# NATIONAL CANCER REGISTRY PROGRAMME

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The publications of NCRP are intended to contribute to the dissemination of authentic information on cancer patterns in the country.

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# NATIONAL CANCER REGISTRY PROGRAMME

## *Indian Council of Medical Research*

## Two-year Report of the Hospital Based Cancer Registries

## 1999 - 2000

*Prepared by*


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# FOREWORD

This two year report of the hospital based cancer registries under the National Cancer Registry Programme (NCRP) for the years 1999 - 2000 is the result of work carried out by the five Hospital Based Cancer Registries located at the respective institutions in different parts of the country.

The broad purpose of a Hospital Based Cancer Registry (HBCR) is to assess and evaluate cancer patient care in the concerned hospital. Besides, the HBCR gives a picture of the magnitude and patterns of cancer in a given hospital and contributes to the population based cancer registry in the geographic area. Information about types of cancers and types of treatment helps in planning the facilities required in the respective hospital, thereby facilitating health services research. The HBCR is also well suited for undertaking epidemiological research.

The HBCRs under the NCRP have over the years given an assessment of the magnitude and patterns of cancer in the particular region, furnished information to the Population Based Cancer Registry and in more recent years provided data to the project on 'Development of an Atlas of Cancer in India'. In addition, they have conducted several case control studies.

The NCRP has commenced through the HBCRs, a detailed systematic study on 'Patterns of Cancer Patient Care and Survival' in three important sites of cancer, viz., cancer cervix, cancer breast and head and neck cancers. These institutions have evolved strategies for patient follow-up. In the coming years, the results of these studies is expected to give a picture of stage and treatment based survival at a national level and more importantly in the Indian context. This would pave the way for initiating multi-centric clinical trials with the HBCR as the backbone.

It is hoped that this report will encourage other cancer centres throughout the country to establish their own HBCRs and commence patterns of care studies.

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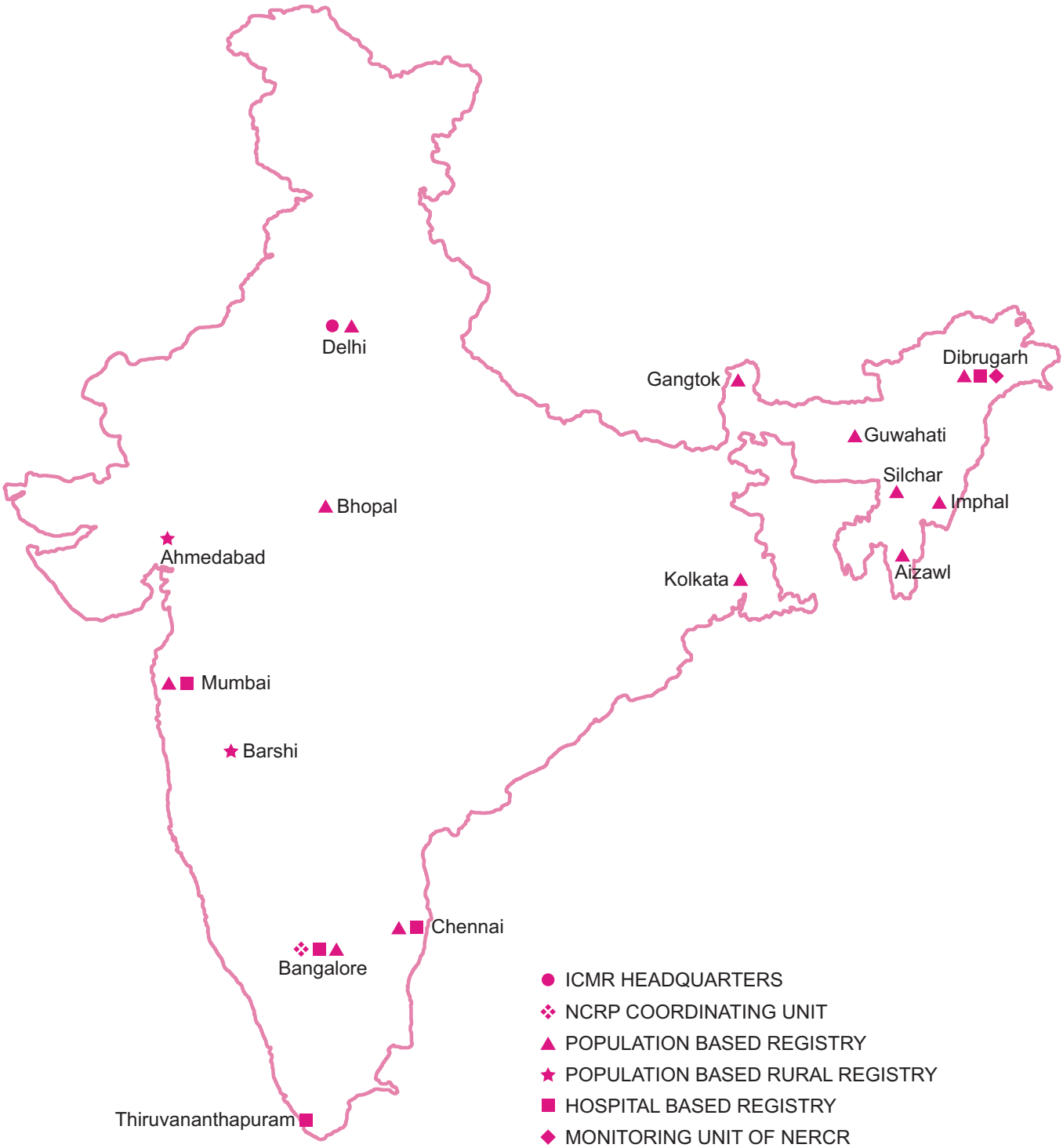
# NATIONAL CANCER REGISTRY PROGRAMME

## (Indian Council of Medical Research)



# National Cancer Registry Programme

The Indian Council of Medical Research initiated the National Cancer Registry Programme (NCRP) in 1981 and commenced a network of cancer registries across the country that started functioning from January 1982. Three hospital based cancer registries (HBCR) were commenced at Assam Medical College, Dibrugarh; Regional Cancer Centre, Trivandrum; and Post Graduate Institute of Medical Education and Research, Chandigarh. In order to extend the assessment of cancer patient care, HBCRs were also started in 1984 at Kidwai Memorial Institute of Oncology, Bangalore; Cancer Institute (WIA), Chennai and Tata Memorial Hospital, Mumbai.

More recently, the HBCRs have embarked on 'Patterns of Cancer Patient Care and Survival Studies' in cancer cervix, cancer breast and head and neck cancers. Several other institutions not in the NCRP network are also collaborating in this multi-centric project. A common agreed patient information form has been developed for each of the sites, incorporating among other things, details of clinical stage, different aspects of types of treatment and meticulous recording of follow-up information. A manual for completing the forms has also been developed.

Data collection also commenced from 1 January 1982 in the population based cancer registries (PBCRs) at Bangalore, Chennai and Mumbai. From 1986 two more urban population based cancer registries were started in Delhi and Bhopal. For the first time a population based rural cancer registry was also started by the ICMR during the subsequent year (1987) in Barshi in the state of Maharashtra. PBCRs to cover the population of Ahmedabad rural district and Kolkata Municipal Corporation have started functioning from 1 January 2004 and 1 January 2005 respectively.

Under the auspices of the World Health Organization a project on "Development of an Atlas of Cancer in India" was commenced in 2001. The two-year report for 2001 and 2002 provided many interesting findings. As a fall out of this a North-Eastern Regional Cancer Registry (NERCR) has been commenced in six areas at Guwahati, Dibrugarh and Silchar in Assam, Aizawl in Mizoram, Imphal in Manipur and Gangtok in Sikkim. These registries have started collation of information on cancer cases from 1 January 2003. A project on developing a cancer atlas especially for the North East states (specifically to include the other four states of Arunachal Pradesh, Meghalaya, Nagaland, Tripura and other areas of Assam not included under the NERCR) has also been initiated. Role of tobacco and pesticides in the occurrence of cancer in these areas is also being investigated.

The NCRP is a long-term activity of the Indian Council of Medical Research. The programme is one of the many major activities of the Division of Non-Communicable Diseases and an Officer-in-charge coordinates it. The Programme is assisted by Steering and Monitoring Committees to help oversee and guide its functioning. A workshop followed by a review meeting is held annually. The Principal Investigators and staff of the registries present data and participate in the discussions. In recent years representatives of other functioning PBCRs that are not in the NCRP Network also participate. Over the years, the National Cancer Registry Programme (NCRP) of the ICMR has laid a strong foundation to build on for cancer research. The entire activity of the NCRP and the projects under it are directed, monitored and executed (including conduct of workshops and coordination of the Annual Review Meetings and workshops) by the Coordinating Unit of the NCRP located at Bangalore.

The NCRP is gradually fulfilling many of the objectives with which it was commenced. These include:

1. Generation of reliable data on the magnitude and patterns of cancer - this would be based on morbidity

and mortality information in different regions of the country according to sex, age and residence of the patient, anatomical site of cancer and proportion of histological type or microscopic confirmation for each site; pattern of different types of cancer according to relative proportions or ratios in various population sub-groups such as religion, language spoken, educational status; clinical stage of disease when patients come to hospital for treatment and where possible the nature of treatment received and outcome;

2. Undertaking epidemiologic research, such as case control or cohort studies based on observations of registry data;

3. Providing data base for developing appropriate strategies to aid in National Cancer Control Programme;

4. Developing human resource in cancer registration and epidemiology.

Cancer registration in India is active. Staff of registries visit hospitals on routine basis and scrutinise the records in various departments that include pathology, radiology, radiotherapy, in-patient wards and out-patient clinics to elicit the desired information on reported cancer cases in a "core proforma" that has been standardised for all cancer registries in India. The hospitals include the main cancer hospitals, other general hospitals in both the government and private sector. Besides pathology laboratories that routinely report cancer cases are also visited. Death certificates are also scrutinised from the municipal corporation units. Every attempt is made by registries to register all cancer patients in the registration area who are resident (at least one year) in the area in all hospitals and copy all death certificates in which cancer is mentioned.

Certain basic checks of data especially those related to duplicate verification and matching with mortality records are carried out by the individual registries. After this, the data is sent to the Coordinating Unit for subjecting the data to various range, consistency and unlikely combinations including a further round of possible duplicate listing. The list of cases with the items of patient information, that require verification are sent to the respective registries by the Coordinating Unit. Individual registries go through the records/reports of such cases and wherever necessary discuss with the concerned clinician or the pathologist. On receiving the clarifications the Coordinating Unit prepares the detailed tabulations by five-year age group, site and sex including rates. The individual registries use these tables to prepare the registry's annual report. The Coordinating Unit collates the data and tables to prepare the consolidated report of that year.

During the annual workshop, the various aspects of working of the registry, problematic cases, use of coding and discussion on medical terminology, statistical and epidemiologic methods are discussed. About 2-3 senior and junior staff from each registry, participate in the workshop.

Apart from the above the Coordinating Unit undertakes and coordinates epidemiologic and other research studies including those to ensure that the quality of data is of a high standard and that coverage of cancer cases in the registry area is as complete as possible. More recently an on-line check programme has been developed. This will enable individual registries to conduct quality checks of their data on the web-site.

Over the years, staff from registries under the NCRP, have benefited from both short and long term training fellowships in established institutions abroad. This has helped them and the registries to develop into departments of epidemiology and undertake several studies on their own and contribute to several research publications in indexed journals.

# Two-year Report of the Hospital Based Cancer Registries: 1999-2000

***An Assessment of the Burden and Care of Cancer Patients***

## INTRODUCTION AND SUMMARY OF THE REPORT

**Objectives of Hospital Based Cancer Registries (HBCRs) (Maclennan *et al*, 1978; Young, J.L. 1991):**

**1. GENERAL:**

1.1 Assess Patient Care;

1.2 Participate in Clinical Research to Evaluate Therapy;

1.3 Provide an idea of the patterns of cancer in the area;

1.4 Help plan hospital facilities.

**2. SPECIFIC:**

2.1 Contribute to active follow-up of the cancer patient;

2.2 Describe length and quality of survival in relation to anatomical site, clinical stage and aspects of types of treatment;

2.3 Contribute to the Population Based Cancer Registries (PBCRs) in the given area;

2.4 Undertake epidemiological research through short-term case control studies;

2.5 Show time trends in proportion of early to late stages at the time of diagnosis;

2.6 Help assess quality of hospital care and cancer services in covered area.

Data collection is done by the individual registries using a standardised agreed common core proforma. The information in this form mainly consists of patient identifying information, demographic facts, details of diagnosis including method of diagnosis, the clinical stage of the disease and the broad type of treatment instituted. Attempts are made to collect particulars of follow-up as well but this has been difficult and in the absence of follow-up of the majority of cases registered by the HBCR, obtaining stage and treatment based survival has not been possible.

Registries send the data to the Coordinating Unit as soft copy in MS-Excel, ASCII or other formats. These data are then converted to a uniform format at the Coordinating Unit and quality control exercises are carried out. Once data is finalized in correspondence with the individual registries, annexure tables are generated and reports prepared.

The two year (1999-2000) report of the five HBCRs is the contribution of data from the hospitals at Tata Memorial Hospital, Mumbai; Kidwai Memorial Institute of Oncology, Bangalore; Cancer Institute-Adyar, Chennai; Regional Cancer Centre, Thiruvananthapuram and Assam Medical College, Dibrugarh.

This report essentially identifies the patients who registered in these institutions and had a diagnosis

of cancer. It further distinguishes those that received cancer directed treatment (CDT) or not. Those who had received prior CDT i.e., before registration at the reporting institution were considered as 'non-analytic cases'. Those who had not received prior CDT were considered as 'analytic cases'. The rationale behind such classification is simple. The main function and objective of HBCRs is to assess and evaluate patient care of that particular hospital or reporting institution. So, if a proportion of patients received some form of cancer directed treatment elsewhere, they are not expected to be reflected in the patient care of the reporting institution, even if this group had received the additional or major course of treatment at this institution. Therefore, this report deals in detail with the analysis of analytic cases.

## Checks on Data

Several range, consistency and duplicate checks are carried out at the Coordinating Unit. These include all the checks based on the IARC publication (Parkin et al, 1994) on 'Comparability and Quality Control in Cancer Registration'. Some checks on certain additional items of patient information including those concerning clinical stage and treatment are also done. Detailed guidelines of each of the items in the core form and related aspects are covered in the coding manual specifically for HBCRs. Registry staff follow these guidelines while completing the core form and checks of data are entirely based on these guidelines.

The summary of checks that were carried out include:

1. **Range checks:** By this is meant that the numeric codes provided should be valid and be in conformity with the key to the codes (for example the code for sex should only be 1 or 2 and not any other number or character).
2. **Consistency checks:** By this is meant, that, while relating the codes of two variables there should be a meaningful or possible logical relationship. For example a patient with a code for prostate cancer can have a code only for male and cannot have the code for female. Similarly, the date of diagnosis should precede the date of commencement of treatment and cannot come after that.
3. **Duplicate checks** based on registration number, name, age, sex and ICD-10 are also carried out.

## ICD-9 vs ICD-10

The tabulations in this report are according to the International Classification of Disease and Related Health Problems, 10th Revision (ICD-10), whereas the previous reports were based on ICD-9. This may be kept in mind while comparing the data of individual sites with the previous reports as some minor differences could be due to this changeover.

The broad purpose of this Two Year (1999-2000) report of the HBCRs is to look into some of their functions outlined above. The HBCRs have over the years given an assessment of the magnitude and patterns of cancer in the region being catered by the centre/registry. They have also contributed to the PBCR of the area. HBCRs have also conducted several case control studies. However, in terms of assessing patient care - for various reasons, follow-up in a routine way has been difficult under Indian conditions. Therefore, the NCRP through the HBCRs has commenced a study on patterns of care and survival in cancer of the breast, cervix and head & neck cancers, so that greater focussed attention could be paid to clinical aspects and management.

The report is mainly in the form of statistical tables and graphs with the corresponding text giving only the factual description. While the report has tried to analyse, compile and consolidate the data provided by the different registries in a set format, it has in no way tried to compare and therefore comment or interpret the data between or among registries. Thus, no judgement is made of the figures in the tables. This is mainly because the individual institutions where the registries are located would have, their own

policies in patient care and management which is beyond the purview of this report. Individual registries, could however view their data, interpret its possible meaning and observe where, if at all modifications are required in administering patient care.

The report provides several pointers to policy makers. It gives an idea of the load of cancer patients in the main cancer hospitals of the country, the proportion and sites of cancers presenting at a late stage of the disease, the resources necessary for diagnosing and treatment according to different modalities, the proportion of patients who require palliative care, and so on. The report forms a base for both policy makers and institutions to plan for the future and would give a fair idea of the optimum number of patients a cancer centre/hospital would be able to effectively handle. The report could also form the basis of working out treatment costs and hospital stay. For the registries themselves the report should be a starting point in conducting follow-up and survival studies on at least selected sites of cancer and also initiating clinical trials.

A brief outline of the purpose and ways of interpreting each of the chapters and some areas where additional information should be gathered in order to get a more complete picture is indicated below.

Chapter 1 gives a picture of the overall magnitude of cancers diagnosed at the respective centres. This has to be further examined in the context of number of patients registered, and number who were diagnosed earlier. The chapter gives the relative frequencies of the leading sites of cancer in broad age groups.

Chapter 2 deals with different types of cancers in childhood.

Chapter 3 indicates the impact of the use of tobacco in the causation of cancer both in proportions and anatomical site of cancer. In planning tobacco control activity across the country this baseline is most important. Though, not in a defined population it gives a fair picture of the problem of cancer associated with the use of tobacco.

The basis of diagnosis in Chapter 4, is one index of the reliability of diagnosis. Microscopic diagnosis that includes histology, cytology and haematology constitutes the basis for establishing a diagnosis of cancer.

Chapter 5 gives an overview of the proportion of patients presenting in various conditions of diagnoses and treatment. It emphasizes the need for distinguishing patients who have been treated elsewhere and those treated only at the reporting hospital/institution.

The proportion of patients presenting in different clinical extents of disease is shown in Chapter 6. Clinical extent of disease at presentation of cancer is directly related to the type and effectiveness of treatment. This is one of the most important baseline indicators for initiating cancer control activity in the area and the success of any education and early detection programmes in the area will be reflected in changes in proportions of stage of presentation of relevant sites of cancer.

Chapter 7 gives the details of different types of treatment at the reporting institution. This is for patients who have not received treatment earlier. The types of treatment and their proportions have been tabulated. The types of treatment and their relative proportions give an idea of the forms of treatment pursued in a given institution.

Chapters 8-14 summarize important selected sites of cancer with the comprehensive tables given in the earlier Chapters. The numbers in these tables of individual sites become more meaningful.

Chapter 15 deals with the relative proportions of histological types of cancer for certain specific sites.

Chapter 16 summarises the relative proportion of cases according to educational status, religion and language spoken.

# HOSPITAL BASED CANCER REGISTRY
## Tata Memorial Hospital, Mumbai

**Dr. K. A. Dinshaw,** D.M.R.T. (Lond), F.R.C.R. (Lond),:Director & Principal Investigator

**Mr. D. N. Rao,** M.Sc., Co-Investigator, Head, Division of Epidemiology & Biostatistics

**Dr. B. Ganesh,** Epidemiologist, Division of Epidemiology & Biostatistics

## INTRODUCTION

The Tata Memorial Centre (TMC) comprises Tata Memorial Hospital (TMH) and ACTREC (Advanced Centre for Treatment Research and Education in Cancer). The Cancer Research Institute (CRI) has now become the basic research wing of ACTREC. This Centre is a grant-in-aid institution under the administrative control of the Department of Atomic Energy, Government of India. The main activities of the centre is diagnosis, treatment and research in cancer as well as training and education to provide the highest standard of patient care.

This report briefly outlines the hospital facilities available for patient care and working of the Hospital Based Cancer Registry during the period 1999-2000.

## TATA MEMORIAL HOSPITAL

The TMH is a comprehensive Cancer Centre with the state of art equipments for diagnosis and treatment and patients from different states in India and abroad attend this hospital. On an average 1000 patients attend this hospital every day. The hospital had 440 in patient beds available for patient care.

The hospital consists of Departments of Surgical Oncology, Medical Oncology, Radiation Oncology, Radio-diagnosis, Pathology, Cytology, Biochemistry and Laboratory Medicine. The Department of Radio-diagnosis is equipped with the latest equipments like CAT Scan, MRI, X-ray machines (1000 mA, 500 mA,), Mammography, Orthopantograph X-ray and Ultrasonography machines for the diagnosis of cancer. The supportive care facilities for cancer patients like Physiotherapy, Ostomy Clinic, Occupational Therapy and Transfusion Medicine are also available. Over 500 patients attend the hospital for radiation treatment on a daily basis.

The hospital initiated the Bone Marrow Transplantation (BMT) programme in 1982 and 23 patients underwent BMT in the year 2000.

The Department of Microbiology has been actively involved in setting up a dedicated system for handling the hospital's infectious waste system. A surveillance system is being set up to monitor post-operative wound infections and also control of infections in the Intensive Care Unit (ICU).

The Department of Preventive Oncology conducts lectures and audiovisual presentations educating

children on the ill effects of tobacco at 28 schools and colleges. The department also arranges poster exhibitions, lectures, workshops etc. on the ill effects of tobacco and Cancer Awareness programmes at 19 different locations for students as well as for general public.

The First Rural Outreach programme for early diagnosis and treatment started by the Centre at Barshi is continued by the Nargis Dutt Memorial Cancer Hospital (Aswini Cancer Research and Relief Society), Barshi with the support of the TMC.

The Clinical Research Secretariat (CRS) which was started in 1997 assists clinical researchers in data management, data analysis and other aspects of research projects. The CRS has offered infra-structural facilities for conducting randomised trials, and prospective clinical research studies.

A Department of Atomic Energy Clinical Trials Centre (DAE CTC) has been established at TMH to initiate clinicians in the concept of scientific and evidence based medicine and also to address burning medical and epidemiological questions essential in this part of the world.

The TMH Tissue Bank - the largest tissue bank in India supplies safe and reliable tissue for human transplantation and it is only one of its kind in processing and distributing multiple types of tissues. Over 900 allographs were produced and utilised so far.

The department of Rehabilitation Services established the Rehabilitation Research Centre (RRC), at the Dr. Earnest Borges Home, Bandra in the year 1998. It offered all types of prosthesis and orthosis and activities of daily living devices specially designed for cancer patients.

The hospital has been actively involved in implementing an "integrated & on-line" Information System for (i) Patient Administration comprising of OPD Registration, Appointments, Follow-up, Admission-Discharge-Transfer System for in-patients, Billing and Receipt system, etc (ii) Inventory Control System for Purchase, Stores, and Dispensary. This software makes use of Visual Basic as a GUI based front-end & DB2/400 on AS/400 as the bank-end database.

Specialised software such as DIS (Diagnostic Information System) RIS (Radiological Information System) were incorporated in the Hospital Information System (HIS) and most of the diagnostic reports were available for on line retrieval.

Telemedicine and telepathology have provided an opportunity for TMH to get connected with international and national centres like Guwahati in the north east and rural cancer centres in the interior of Maharashtra at Barshi and Chiplun along the west coast. This would allow exchange of thoughts, distance bearing, transfer of technology and meaningful collaboration between individual clinicians.

A Touch-Screen facility was set up in the hospital which was inaugurated by Dr. R Chidambaram. It provides information about the hospital, on cancer, on prevention and other related information etc. It was estimated that in the first 5 months about 80,000 visitors have utilized this facility.

TMH is a post-graduate teaching centre, affiliated to the University of Mumbai, National Board of Examinations, New Delhi and Maharashtra University of Health Sciences, Nasik. The Post-graduates courses (M.D.) in Pathology, Radiodiagnosis, Radiotherapy, Anaesthesia (DA), (DMRD) Radiodiagnosis, and (DMRT) Radiotherapy are available and over 50 students were registered during the year 1999-2000.

The Tata Memorial Centre is a recognised training centre by national and international organisations such as WHO, UICC and IAEA. WHO/IAEA Fellows are provided training in various fields. In an ongoing program on Continuing Education in Oncology, trainees are registered for courses such as (i) Oncology Training Program for Doctors (ii) G.I. Endoscopy (iii) Medical Oncology/Clinical Oncology (iv) Radiotherapy & Radiodiagnosis Training Course (v) Oncology Nursing Training Course (vi) Diagnostic Cytology Training Course (vii) Certificate Course in Enterostomal Therapy and (viii) Apprenticeship in Pathology Department.

Observers from all over India, SAARC countries and other parts of the world visit the institution to update their knowledge and share their experiences.

Recognition from Universithy of Mumbai was received for the conduct of MD in Immunoheamatology and Blood Transfusion.

## CANCER REGISTRY

Cancer Registry maintains cancer related information such as site of disease, histological classification, clinical extent of disease and primary treatment since 1941. Over 1,100 patients were diagnosed as cancer cases in 1941, since then there has been increase in patients attendance and at present over 25,000 new patients get registered and over 15,000 patients are diagnosed as cancer annually.

The Population Based Cancer Registry (PBCR) for Greater Bombay was started in the year 1964 and TMH Cancer Registry has been the important source for getting information on resident cancer cases. As TMH is a well recognized institution, patients from other states of India and abroad attend for expert medical care and opinion. Thus this HBCR has become an important source to identify resident cancer cases of PBCR's like Bhopal, Delhi, Chennai and Barshi in NCRP network.

The Cancer Registry operations were computerised in 1985. The new computer was installed and commissioned IBM AS/400 Server, which makes use of OS/400 as operating system, DB2/400 as the RDBMS. This server is based on Client Server architecture and has replaced old ND 550 system (NORSK DATA). The Software is Visual Basic front-end tool and DB2/400 as a back-end database available on AS/400 and is planned to be 'On - Line' system.

The standard international code such as International Classification of Disease for Oncology (ICD-0-ii, ICD-III, ICD-9, TNM (WHO) are used to classify the disease (topography & morphology), clinical extent of disease etc. and codes for demographic variables are also being used. The registry has started using ICD10 for 1999 & 2000 cancer cases. As cancer is not a notifiable disease, information about patient's health status is obtained through active follow-up of patients mostly by postal inquiry.

The Cancer Registry brings out comprehensive annual reports on cancer statistics covering various aspects of cancer management and care. End Results Reports on head & neck cancer and breast cancer are published periodically. Epidemiological studies and case-control studies are carried out to identify high risk and associated factors for common cancers like head & neck, oesophagus and breast cancers and the results are published in Indian and International Journals.

Staff from other hospitals are given training in cancer registry techniques and over 20 personnel have been given training so far. Cancer Registry staff also attend various workshops on cancer registry operations and are trained well in various aspect of cancer registration.

# HOSPITAL BASED CANCER REGISTRY

## Kidwai Memorial Institute of Oncology, Bangalore

**Dr. Bapsy Padmanabhan,** Principal Investigator & Director

**Dr. P.S.Prabhakaran,** Former Principal Investigator & Director

**Dr. K.Ramachandra Reddy,** Co-principal Investigator & Prof. & Head

**Dr. C.Ramesh,** Associate Prof.

**Mr. K.Mani,** Lecturer

Department of Epidemiology and Biostatistics

Kidwai Memorial Institute of Oncology (KMIO) is a Comprehensive and Regional Centre for Cancer Research and Treatment in Karnataka. The Institute has all the state of art facilities for the diagnosis and treatment of cancer and in view of this, patients from all over Karnataka as well as from the adjoining areas of neighbouring states of Andhra Pradesh, Tamil Nadu, Kerala and other regions attend this hospital. The Institute which was established in 1973 with 50 inpatient beds and a radiology department has achieved a bed strength of 429 apart from the Dharmashala, a unique project of its kind in the country which provides accommodation to about 250 ambulatory patients with 250 of their attendants. These patients and attendants at the Dharmashala are provided with free food through perpetual free feeding endowment donation scheme.

As community outreach programme, the mobile cancer education and detection unit (Department of Community Oncology) organizes cancer detection and education camps in rural, semi urban areas of Karnataka and in the neighbouring areas of other states with support from voluntary organizations. KMIO as an apex body for the overall cancer control in the state has initiated several cancer control programmes / activities at different places. The Institute has been recognized as a National Centre of Excellence. Medical and paramedical personnel from all over the country come for training in various specialities / branches of oncology. KMIO is running super speciality courses in M.Ch (Surgical Oncology) and DM (Medical Oncology), Post-graduate courses in MD Radiotherapy, Nuclear Medicine and Radiation Physics apart from Undergraduate courses in B.Sc. Medical Technology (Laboratory / Radiotherapy / Radio Diagnosis). These courses are affiliated to Rajiv Gandhi University of Health Sciences.

In order to provide anti-cancer drugs at reasonably reduced prices, the Kidwai Cancer Drug Foundation Trust has been established where, the cost of Ani Cancer Drugs are available at nearly 30% cheaper rates compared to market prices. Free drugs are provided to poor and needy patients through Karnataka Chief Minister's Medical Relief Fund.

The KMIO is a well equipped Comprehensive Cancer Centre consisting of the departments of Surgical Oncology (General, Head & Neck, Oral, Gynaecologic), Radiotherapy, Medical Oncology, Paediatrics, Radiodiagnosis, Pathology, Biochemistry, Blood transfusion & Immuno Haematology, Microbiology,

Cytogenetics, Nuclear Medicine, Radiation Physics, Anaesthetics & Pain relief, Epidemiology & Biostatistics, Community Oncology, Social Welfare & Public relations, Library and information centre, Administration & supportive care facilities for cancer patients like Physiotherapy, Ostomy clinic, Occupational therapy, are also available.

KMIO being a referral cancer centre, about 70% of the patients are referred by various medical institutions and private practitioners. The Institute has established two Peripheral Cancer Centres at Mandya & Gulbarga with a main intention of reducing the distance of travel of cancer patients from far places to KMIO and to provide cancer treatment facilities at the nearest places as far as possible so that, it also reduces the load on KMIO. During the period 1999-2000 a total number of 24211 new patients were registered of which 14,498 cases were confirmed to have cancer. About 18% of the patients registered annually are from the adjacent states. On an average about 50 new cases are registered every day and 650 follow-up patients come for regular treatment. The Institute offers all modalities of cancer directed treatment - Surgery, RT, CT, Hormone therapy and Pain Relief through a multi-disciplinary team approach.

Of the total number of confirmed cancers of 14498, the proportion of cancers in females were higher and accounted for 56% (8065 cases) of the total cancers compared to 44% (6433 cases) in males.

Among males, cancer of the pharynx (ICD - CO9, C10, C12, C13 & C14) is continued to be the first predominant site of cancer (14%) followed by oral cavity (COO-CO6) (12%), oesophagus(9.4%), stomach (7%) and lung (6.9%). Among females, cancer of the cervix is the most common cancer with 32% of the total female cancer followed by breast(14.5%), oral cavity(12%), oesophagues(5.9%) and ovary (4.5%). Tobacco related cancer sites accounted for 46.5% of the total cancers in males and 22.1% in females. Together in both sexes, the tobacco related cancer sites accounted for 33% of the total cancers.

Paediatric (0-14 years) cancers formed about 4.5% of the total cancers with a slight prepondence in boys (6.02%) compared to girls (3.24%). Leukaemias and Lymphomas were the commonest sites of cancers in paediatric age-group.

**Other staff of Hospital Based Cancer Registry of the Dept. of Epidemiology & Biostatistics**

| | | |
|---|---|---|
| Mr. D.J.Jayaram | : | Sr. Investigator / Scientific Assistant |
| Mr. C. Shivanna | : | Asst. Social Scientist<br>(On deputation to Community Oncology) |
| Mr. V. Bhadraiah | : | Asst. Social Scientist |
| Mr. A.V.Srinivasa Gowda | : | Asst. Social Scientist |
| Mr. R.Lingaraju | : | Asst. Social Scientist |
| Mr. M.K.M. Gowda | : | Asst. Social Scientist |
| Mrs. B.J. Kumudhini | : | Asst. Social Scientist |
| Mr. M.R. Balakrishnoji Rao | : | Asst. Social Scientist<br>(On deputation from Community Oncology) |
| Mr. A. Subramani | : | Coding Clerk |
| Mrs. A.K.Jyothi | : | Stenographer |
| Mr. B.M.Gangaiah | : | Data Entry Operator |
| Mr. Mahadevaiah | : | Literate Attender |

# HOSPITAL BASED CANCER REGISTRY

## Cancer Institute (WIA), Adyar, Chennai

**Dr. V. Shanta,** Principal Investigator, HBCR & Executive Chairman, Cancer Institute (WIA)

**Dr. R. Swaminathan,** Co-Investigator, HBCR & Senior Bio-Statistician,
Division of Epidemiology & Cancer Registry

**Mrs. R. Rama,** Statistical Assistant, Division of Epidemiology & Cancer Registry

The Cancer Institute (W.I.A.), in Chennai, is the first comprehensive cancer care centre to be established in South India and the second in India. It is recognized as a Regional Cancer Centre by the Ministry of Health & Family Welfare, Government of India with state of the art facilities for cancer diagnosis, treatment and research. It is an autonomous non-profit institution with a bed strength of 423; more than 50% of the patients are boarded, lodged and treated at free of cost. The institute is primarily research oriented and is recognized by the University of Madras, Anna University and The Tamil Nadu Dr. M.G.R. Medical University for doctoral and super speciality degrees. The proportion (%) of patients attending the Institute from southern states of India : Tamil Nadu-68%, Andhra Pradesh-26% and Kerala-2%. Over 240 patients (new patients and follow-up cases) are seen at the Institute per day and these figures are increasing over the years. The three leading site of cancers among males are Oral Cavity (UICC), Oropharynx(UICC) and Oesophagus. In females Cervix, Breast and Oral Cavity (UICC) are the leading sites. In paediatric age group, all Leukemias and all Lymphomas are the predominant cancers.

The Hospital Based Cancer Registry has been functioning since the inception of the Institute in 1955. Data collection on the lines of ICMR started on 1st January 1984. All new cases attending the Institute are interviewed during registration and the required data are abstracted from the records using a standard proforma. The coded proforma are then scrutinized by the Medical Officer and Statistician. Data are then computerized. The validity and consistency checks for unlikely combinations of age, sex, site and morphology and other factors are carried out using in-house computer programs. In addition to these the IARC quality control programs are also used to validate the data. The cleaned data are then sent to the ICMR coordinating unit. Exercises on re-abstraction and coding on a random sample of cases are done regularly and presented in national level registry meetings.

Lifetime follow up of the cancer cases is generally felt difficult in India. With great efforts, we have evolved methods to overcome the problems in the follow up of cases treated at the Institute. An address

form consisting of a minimum of seven addresses of patients and their relatives / friends / referring physician is maintained to help in follow up. Reply paid cards are sent to all patients who do not report for check up on the due date. House visits / telephone enquiries are made by the field investigators to find out the vital status of the treated patients who had given a contact address in Chennai and its neighborhood. If there is no response from any of the addresses given by the patients from outside Chennai, letters are written to the Village Headman, referring doctors, President / Secretary of local service organization like the Lion, Rotary etc. for tracing the patient. The help of the cured patients from the area, who are currently on regular follow up is also sought for this purpose. We also provide concession for travel by bus, rail and air to the patient coming for treatment / follow up and an accompanying person. The completeness of follow up at three years from diagnosis is more then 80%.

Reports on the activities of hospital cancer registry are published regularly on annual / biennial basis. We have been organizing workshops on "Techniques for early detection of cancer" for the medical officers in Tamilnadu. This is one registry that has provided long-term cancer survival rates and trends for selected cancers over the period spanning four decades from 1958-1977. We had conducted cases control studies to determine the risk factors of several cancers, cohort studies on cancer patients for occurrence of second cancers and survival studies to elicit the prognostic factors. The results of these studies have been published in reports and international journals. The registry is actively involved in the Clinical trials being carried out at the institute in the form of sample size estimation, randomization of cases and rendering assistance in the analysis.

# HOSPITAL BASED CANCER REGISTRY
## Regional Cancer Centre, Thiruvananthapuram

**Dr. B.Rajan,** Principal Investigator & Director (From December 2003)

**Dr. M. Krishnan Nair,** Principal Investigator (Till November 2003)

**Dr. Aleyamma Mathew,** Associate Professor of Epidemiology & Clinical Research

## REGIONAL CANCER CENTRE

Regional Cancer Centre, Thiruvananthapuram, continues to keep high standards in patient management, research, teaching, training and development activities. The Centre caters to patients from all over the state of Kerala, from the neighboring states of Tamil Nadu and Karnataka and also from neighboring countries. The Centre has in-patient beds strength of 420.

Annually more than 10,000 new patients, with 95,000 follow-up visits and more than 2,00,000 non cancer patients report to the centre for various investigations and treatment. During the last five years, there has been 25% increase in the registration of both cancer and non cancer cases. The Centre conducts cancer control programmes covering the entire state by way of cancer awareness classes, screening camps and other public and professional educations programmes.

### Hospital Based Cancer Registry

The Hospital-Based Cancer Registry (HBCR), at the Regional Cancer Centre(RCC) Thiruvananthapuram provided the data of cancer patients reporting to the RCC, Thiruvananthapuram for the year 1999 and 2000.

The registry data entry is made online using an in-house web based software "rccintranet.org". The demographic details are collected by the social investigators and entered into the computer at the time of new patient registration and transferred to the NCRP core-proforma. The data transfer avoids the manual documentation of the first part (demographic details) of the NCRP core-proforma. The second part (diagnostic, treatment and follow-up details) is entered using the above web based software after retrieving case-sheets from the medical records division.

The HBCR maintains a follow-up system for all cancer patients. Generally all follow-up visits are through prior appointments. In-house software has been developed for appointment scheduling of patients.

Date and disease status for each follow-up visit are entered regularly.

The topography and morphology of various cancers are coded using the third edition of International Classification of Diseases for Oncology (ICD-O-3) and the International Classification of Diseases (ICD-10).

To ensure whether valid codes are entered, a series of range check as well as consistency checks and duplicates verification are done using in-house software. After necessary editing, the data are sent to the coordinating unit of national cancer registry programme in an electronic format for further checking on various range, consistency, unlikely combinations and duplicates. Necessary corrections are done based on the error list of cases sent by the coordinating unit and reports generated. The registry records around 8000 cancer cases annually.

On-line computerization of cancer registration has helped to improve the timely submission and quality of data and facilitate the access and application of data. Further, the medical documentation of case records in electronic form by the HBCR staff has helped clinicians and other researchers to obtain the necessary information. The two population based registries located in Thiruvananthapuram and Karunagappally have largely utilized the HBCR data.

The personnel of the registry are actively conducting several edidemiologic and clinical research programmes, which have helped to bring extramurally funded research programmes and publication of a number of scientific papers in peer-reviewed journals.

The official newsletter of the National Cancer Registry Programme of India, 'CRAB' has been published by the HBCR, Thiruvananthapuram.

**Other staff of Hospital Based Cancer Registry, Thiruvananthapuram**

| | | |
|---|---|---|
| Ms. Padmakumari G. | : | Lecturer in Statistics |
| Ms. Anitha Nayar | : | Social Investigator Gr. I |
| Ms. Jalaja Kumari V | : | Clerk Gr. I |
| Ms. Asha N.M | : | Clerk |

# HOSPITAL BASED CANCER REGISTRY
## Assam Medical College, Dibrugarh

**Dr T.R. Borbora,** Principal Investigator

**Dr. (Mrs) N. Choudhury,** Principal Investigator (upto 30.9.2004)

**Dr. M. S. Ali,** Sr. Biostatiscian & Officer in charge

**Dr. (Ms). R. Akhtar,** Research Officer

Hospital Based Cancer Registry, Dibrugarh which had commenced in February, 1982 as a sequel to the recommendation of the NCRP Task Force of the ICMR has completed this year, its 22 successful years.

A systematic method for case finding, abstracting and processing are key to a successful registry programme. In a cancer hospital these can be achieved without much effort, but in a general hospital set-up achieving these objectives is a Herculean task. There are 23 OPD clinics and cancer patients may attend any clinic on any day depending on the signs and symptoms. The registry workers visit these clinics as per a prepared roster based on the patient and the information flow of certain clinics like ENT, OBG, Surgery, Medicine etc. Cancer patients attending other clinics are identified by scrutinizing the OPD cards retrieved from the central OPD counter and are noted down for subsequent matching with the admitted cases.

The central OPD counter preserves the OPD cards received from different OPD clinics at the end of the day. The Medical Records Department (MRD) of the hospital stores the records of only inpatients in a folder. The case files are not stored systematically according to MRD No. or wards. Identification and retrieval of a cancer case from a heap of files of all types of inpatients pose difficult problems. To ease the problems arrangements have been made with the MRD to transfer the case files of cancer patients to the registry office which are then indexed and arranged systematically for smooth and prompt retrieval.

During 1989-1990 the number of new cancer patients recorded at HBCR, Dibrugarh were 2397, compared to only 1533 cases registered a decade later during 1999-2000. There has been 36% reduction in cancer registration during the decade, whereas there has been around 52% increase during that decade in RCC, Thiruvananthapuram. This only signifies the difference in patient and information flow between a general hospital and an RCC or specialized cancer hospital. Qualitatively also the information on method of diagnosis, extent of disease and treatment modalities may not conform to the state of the art followed by an RCC or a specialised cancer hospital. In a general hospital each clinician usually sees and treats patients separately.

A hospital cancer registry must undertake certain essential supplementary activities like follow-up, survival and evaluation of patient care for some specific cancer sites. But because of the inherent problems

like inadequate case numbers and lack of follow-up information for the sites under review, it was not possible to undertake these activities.

Dibrugarh registry is one of the participating Centres in the WHO sponsored national programme on 'Development of an Atlas of Cancer in India'. The cancer data for the years 2001 and 2002 have already been dispatched to the coordinating unit and 2003 data are being entered in the core proformae.

The registry has also been entrusted to run a project on PBCR for Dibrugarh district comprising an area of 3381 Sq. Km with a population of 1172056 as per 2001 census. The project was initiated in March, 2003 as a part of North East Regional Cancer Registry. The cancer incidence data for the year 2003 was presented at the ARM held at Cancer Institute, Chennai. The data for the year 2004 (upto September) are being processed for presentation in the next ARM. Efforts have been made to optimize the case-finding procedures by sustained liaisoning with all the health centres and diagnostic laboratories of the district. Three camps have been conducted in 2004 in different strategic parts of the district for mobilizing the public awareness on the aims and objectives of the ongoing project and early detection of the disease.

**Other staff of Hospital Based Cancer Registry, Dibrugarh**

| | | |
|---|---|---|
| Mrs. P. Dutta | : | Medical Record Officer |
| Mrs. S. Ahmed | : | Social Investigator |
| Mrs.S. Neog | : | Social Investigator |
| Mr. K. Saikia | : | Clerk |
| Mrs. I. Baruah | : | Clerk |
| Mr. S. R. Nath | : | Clerk |
| Mrs. R. Begum | : | Clerk |
| Mrs. J. Sonowal | : | Coding Clerk |
| Mr. P. Deuri | : | Typist |
| Mr. P.P. Saikia | : | Computer Operator (PBCR) |
| Mr. R. Dutta | : | Investigator (PBCR) |
| Sri B. Mech | : | Helper |

# NATIONAL CANCER REGISTRY PROGRAMME

**Indian Council of Medical Research**

# Chapter 1

## MAGNITUDE AND LEADING SITES OF CANCER

Table 1.1 gives the total number of cancers diagnosed at five different hospital based cancer registries (HBCRs), over the period of two years from 1st January 1999 to 31st December 2000. A total of 74938 cancers (38,794 males and 36,144 females) were diagnosed at the five HBCRs. Among these, the proportion of cancers diagnosed at different HBCR hospitals were: 42% at Mumbai, 18% at Bangalore and Chennai, 20% at Thiruvananthapuram and 2% at Dibrugarh. In Bangalore and Chennai for every 100 female patients 81 to 87 male patients were reported, whereas, in Mumbai (129), Thiruvananthapuram(108) and Dibrugarh(186) more male patients were reported.

Fig. 1 gives the trends in the actual total number of cancers registered from 1984 to 2000 in the different HBCRs. Mumbai, Chennai and Thiruvananthapuram have shown a significant increase in numbers over the years. Dibrugarh has shown a decline.

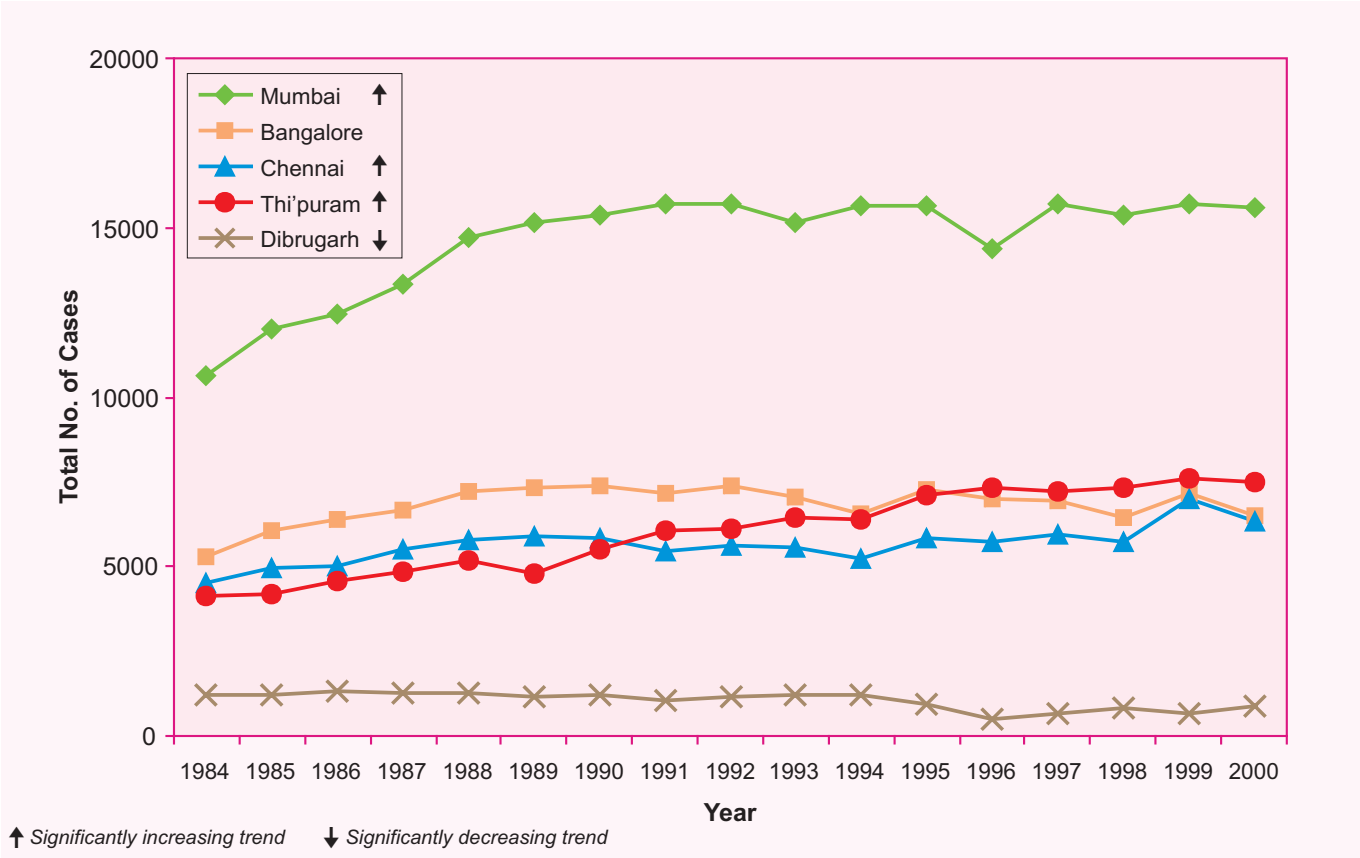
The number, proportion relative to all sites and rank of the ten leading sites in males and females for the year 1999-2000 have been presented in Table 1.2 and represented in Figures 1.1(a) and 1.1(b). While comparing the leading sites with that in earlier reports, it may be noted that leading sites listed here have been provided according to ICD-10.

**TABLE 1.1: Number (#) and Proportion (%) according to sex, sex ratio percent and relative proportion (Rel. Prop.) of cancers (1999-2000)**

| Registry | Males | | Females | | Sex* Ratio% | Total Cases | Rel. Prop. |
|---|---|---|---|---|---|---|---|
| | # | % | # | % | | | |
| **Mumbai** | 17637 | 56.3 | 13679 | 43.7 | 129 | 31316 | 41.8 |
| **Bangalore** | 6106 | 44.7 | 7543 | 55.3 | 81 | 13649 | 18.2 |
| **Chennai** | 6195 | 46.5 | 7139 | 53.5 | 87 | 13334 | 17.8 |
| **Thi'puram** | 7859 | 52.0 | 7247 | 48.0 | 108 | 15106 | 20.2 |
| **Dibrugarh** | 997 | 65.0 | 536 | 35.0 | 186 | 1533 | 2.0 |
| | **38794** | **51.8** | **36144** | **48.2** | **107** | **74938** | **100.0** |

** Number of male patients per 100 female patients*

**Fig. 1: Trends in total number of cancers registered (both sexes) (1984-2000)**




**Males :** *(The proportion(%) of a given site relative to all sites of cancer in that sex are given in parentheses)*

In *Mumbai*, mouth(11%) was the leading site of cancer, followed by lung(7%), tongue(7%), oesophagus(6%) and Non-Hodgkin's Lymphoma(NHL)(5%).

In *Bangalore*, oesophagus(10%), hypopharynx(9%), stomach(7%), lung(7%) and mouth(6%) were the five leading sites in that order.

In *Chennai*, stomach(9%) and mouth(9%) were the leading sites. These two sites were followed by oesophagus(8%), tongue(7%) and hypopharynx(7%).

In *Thiruvananthapuram*, lung(13%) was the leading site followed by mouth(9%), tongue(6%), NHL(5%) and larynx(5%).

In *Dibrugarh*, hypopharynx(16%) and oesophagus(15%) like in past years, remained the leading sites followed by mouth(9%) and tongue(7%).

**Females**

In *Mumbai*, breast(26%) was the leading site of cancer followed by cervix(19%), ovary(6%), mouth(5%) and oesophagus(4%).

# Table 1.2: Number(#), Relative Proportion(%) and Rank(R) of Leading Sites of Cancer (1999-2000)

## MALES

| Sites | Mumbai | | | Bangalore | | | Chennai | | | Thi'puram | | | Dibrugarh | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | R | # | % | R | # | % | R | # | % | R | # | % | R |
| Mouth | 1986 | 11.3 | 1 | 368 | 6.0 | 5 | 544 | 8.8 | 2 | 734 | 9.3 | 2 | 86 | 8.6 | 3 |
| Lung | 1253 | 7.1 | 2 | 432 | 7.1 | 3 | 378 | 6.1 | 6 | 1041 | 13.2 | 1 | 46 | 4.6 | 6 |
| Tongue | 1236 | 7.0 | 3 | 346 | 5.7 | 6 | 450 | 7.3 | 4 | 473 | 6.0 | 3 | 67 | 6.7 | 4 |
| Oesophagus | 998 | 5.7 | 4 | 587 | 9.6 | 1 | 478 | 7.7 | 3 | 412 | 5.2 | 5 | 147 | 14.7 | 2 |
| NHL | 950 | 5.4 | 5 | 250 | 4.1 | 8 | 269 | 4.3 | 7 | 408 | 5.2 | 6 | 10 | 1.0 | * |
| Larynx | 937 | 5.3 | 6 | 192 | 3.1 | 10 | 238 | 3.8 | 8 | 417 | 5.3 | 4 | 52 | 5.2 | 5 |
| Hypopharynx | 935 | 5.3 | 7 | 554 | 9.1 | 2 | 420 | 6.8 | 5 | 250 | 3.2 | 9 | 163 | 16.3 | 1 |
| Myel. Leuk. | 838 | 4.8 | 8 | 202 | 3.3 | 9 | 205 | 3.3 | 9 | 237 | 3.0 | * | 7 | 0.7 | * |
| Lymph. Leuk. | 609 | 3.5 | 9 | 173 | 2.8 | * | 119 | 1.9 | * | 270 | 3.4 | 8 | 2 | 0.2 | * |
| Stomach | 504 | 2.9 | 10 | 427 | 7.0 | 4 | 562 | 9.1 | 1 | 323 | 4.1 | 7 | 42 | 4.2 | 8 |
| Brain, NS. | 370 | 2.1 | * | 252 | 4.1 | 7 | 43 | 0.7 | * | 249 | 3.2 | 10 | 10 | 1.0 | * |
| Rectum | 483 | 2.7 | * | 128 | 2.1 | * | 174 | 2.8 | 10 | 213 | 2.7 | * | 14 | 1.4 | * |
| Tonsil | 332 | 1.9 | * | 123 | 2.0 | * | 111 | 1.8 | * | 79 | 1.0 | * | 45 | 4.5 | 7 |
| Pharynx uns. | 12 | 0.1 | * | 84 | 1.4 | * | 41 | 0.7 | * | 17 | 0.2 | * | 21 | 2.1 | 9 |
| Oth. Oroph. | 222 | 1.3 | * | 104 | 1.7 | * | 59 | 1.0 | * | 143 | 1.8 | * | 18 | 1.8 | 10 |
| **Total** | **11665** | **66.1** | | **4222** | **69.1** | | **4091** | **66.0** | | **5266** | **67.0** | | **730** | **73.2** | |
| **All Sites** | **17637** | **100.0** | | **6106** | **100.0** | | **6195** | **100.0** | | **7859** | **100.0** | | **997** | **100.0** | |

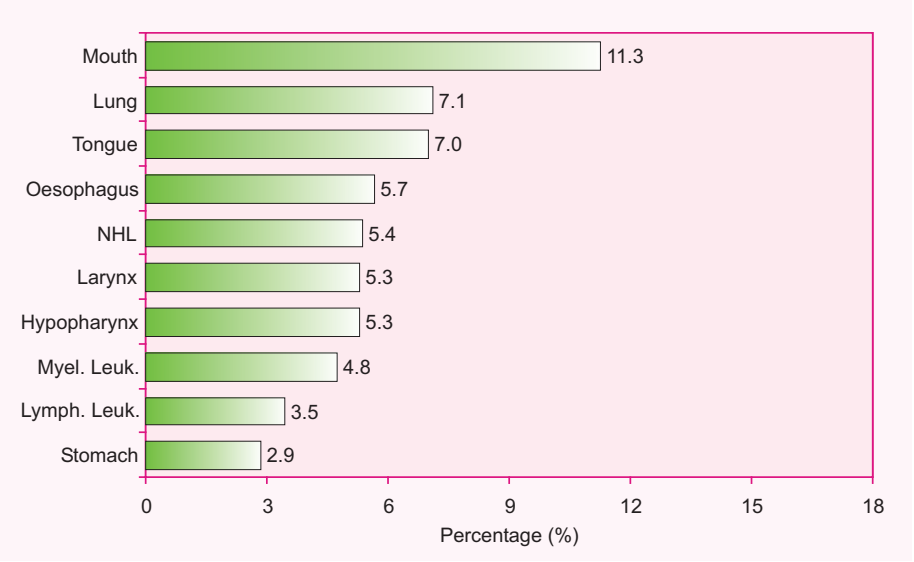
## FEMALES

| Sites | Mumbai | | | Bangalore | | | Chennai | | | Thi'puram | | | Dibrugarh | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | R | # | % | R | # | % | R | # | % | R | # | % | R |
| Breast | 3617 | 26.4 | 1 | 1001 | 13.3 | 2 | 1412 | 19.8 | 2 | 1991 | 27.5 | 1 | 65 | 12.1 | 3 |
| Cervix uteri | 2643 | 19.3 | 2 | 2490 | 33.0 | 1 | 2499 | 35.0 | 1 | 951 | 13.1 | 2 | 82 | 15.3 | 1 |
| Ovary | 777 | 5.7 | 3 | 328 | 4.3 | 5 | 248 | 3.5 | 5 | 559 | 7.7 | 4 | 42 | 7.8 | 4 |
| Mouth | 656 | 4.8 | 4 | 833 | 11.0 | 3 | 441 | 6.2 | 3 | 384 | 5.3 | 5 | 37 | 6.9 | 5 |
| Oesophagus | 505 | 3.7 | 5 | 467 | 6.2 | 4 | 263 | 3.7 | 4 | 109 | 1.5 | * | 68 | 12.7 | 2 |
| Gallbladder | 381 | 2.8 | 6 | 23 | 0.3 | * | 19 | 0.3 | * | 17 | 0.2 | * | 29 | 5.4 | 6 |
| Tongue | 370 | 2.7 | 7 | 86 | 1.1 | * | 119 | 1.7 | 10 | 237 | 3.3 | 6 | 19 | 3.5 | 8 |
| NHL | 359 | 2.6 | 8 | 127 | 1.7 | 9 | 96 | 1.3 | * | 200 | 2.8 | 7 | 1 | 0.2 | * |
| Myel. Leuk. | 351 | 2.6 | 9 | 174 | 2.3 | 7 | 123 | 1.7 | 9 | 176 | 2.4 | 8 | 6 | 1.1 | * |
| Lung | 298 | 2.2 | 10 | 82 | 1.1 | * | 84 | 1.2 | * | 134 | 1.8 | * | 8 | 1.5 | * |
| Thyroid | 261 | 1.9 | * | 212 | 2.8 | 6 | 135 | 1.9 | 8 | 621 | 8.6 | 3 | 5 | 0.9 | * |
| Stomach | 207 | 1.5 | * | 172 | 2.3 | 8 | 223 | 3.1 | 6 | 84 | 1.2 | * | 22 | 4.1 | 7 |
| Brain, NS. | 204 | 1.5 | * | 121 | 1.6 | 10 | 21 | 0.3 | * | 160 | 2.2 | 9 | 4 | 0.7 | * |
| Hypopharynx | 161 | 1.2 | * | 112 | 1.5 | * | 154 | 2.2 | 7 | 36 | 0.5 | * | 17 | 3.2 | 9 |
| Corpus uteri | 281 | 2.1 | * | 75 | 1.0 | * | 87 | 1.2 | * | 160 | 2.2 | 10 | 4 | 0.7 | * |
| Tonsil | 41 | 0.3 | * | 15 | 0.2 | * | 14 | 0.2 | * | 9 | 0.1 | * | 13 | 2.4 | 10 |
| **Total** | **11112** | **81.2** | | **6318** | **83.8** | | **5938** | **83.2** | | **5828** | **80.4** | | **422** | **78.7** | |
| **All Sites** | **13679** | **100.0** | | **7543** | **100.0** | | **7139** | **100.0** | | **7247** | **100.0** | | **536** | **100.0** | |

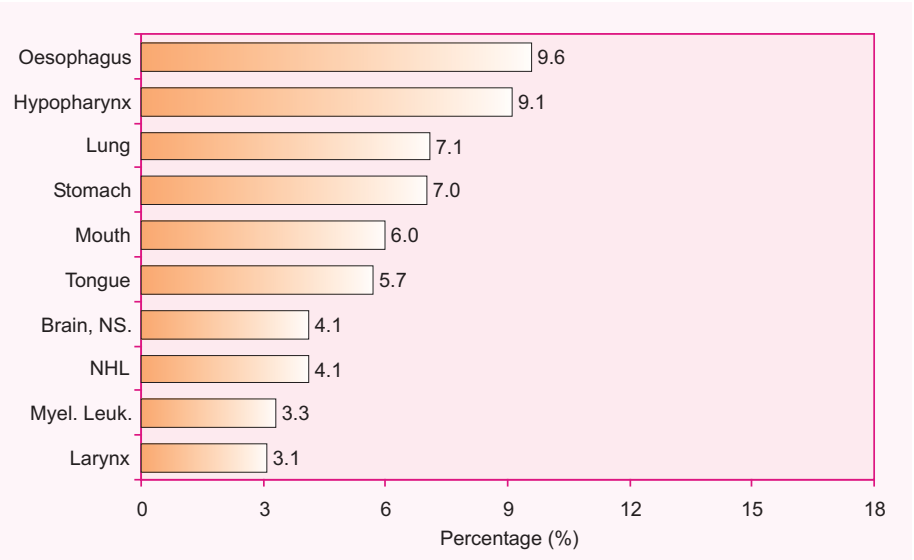
** Rank not within first ten*

## Fig. 1.1(a) : Ten Leading Sites of Cancer - Males

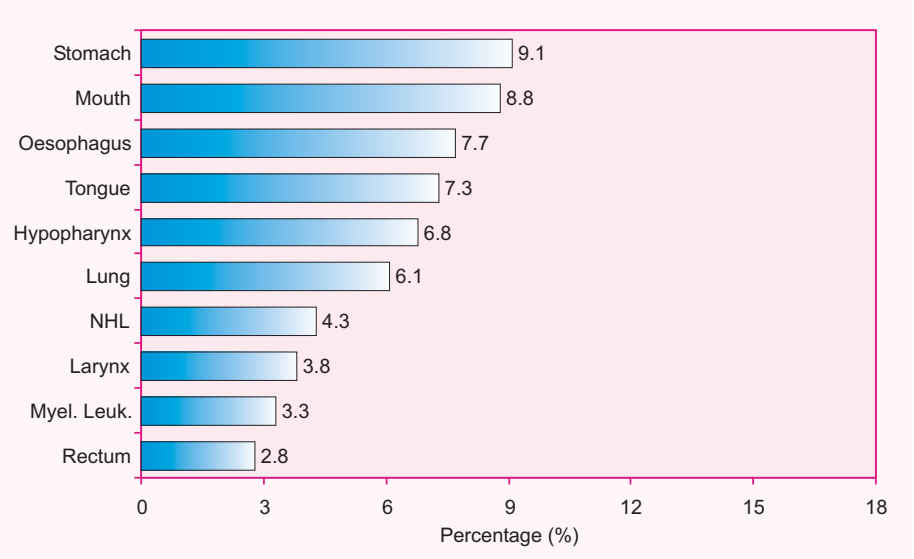
### Mumbai




### Bangalore

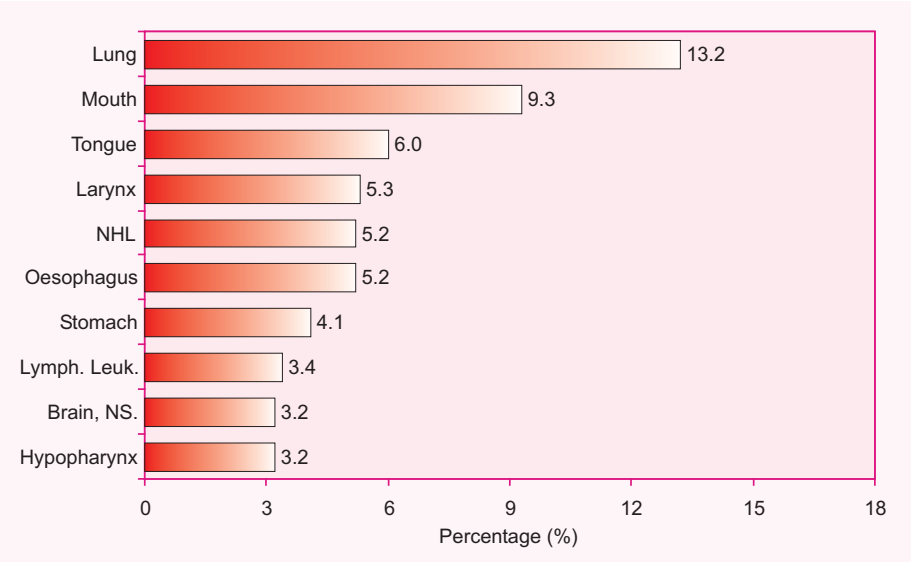



### Chennai

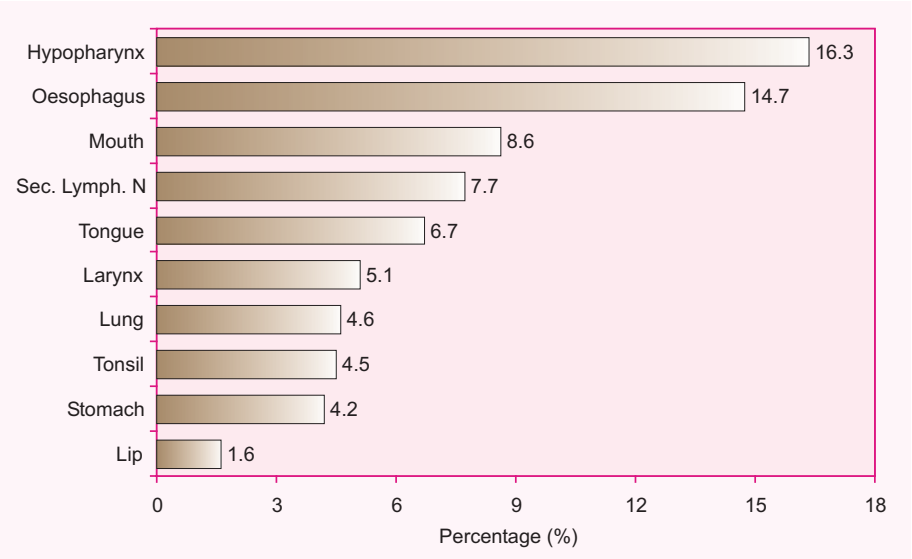


## Fig. 1.1(a) : Ten Leading Sites of Cancer - Males (Contd..)

### Thiruvananthapuram




### Dibrugarh




In *Bangalore*, cancer of the cervix was the leading site, accounting for about 33% of cancers in females, followed by breast(13%), mouth(11%), oesophagus(6%) and ovary(4%).

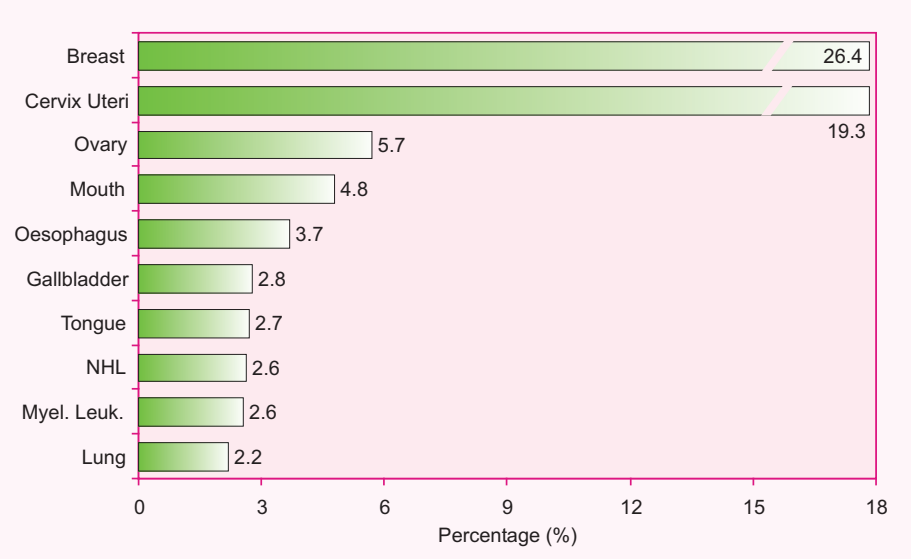
In *Chennai*, the five leading sites were the same as that in Bangalore.

In *Thiruvananthapuram*, thyroid gland(9%) was the third leading site after breast(28%) and cervix(13%). Thyroid gland was followed by the cancers of ovary(8%) and mouth(5%).

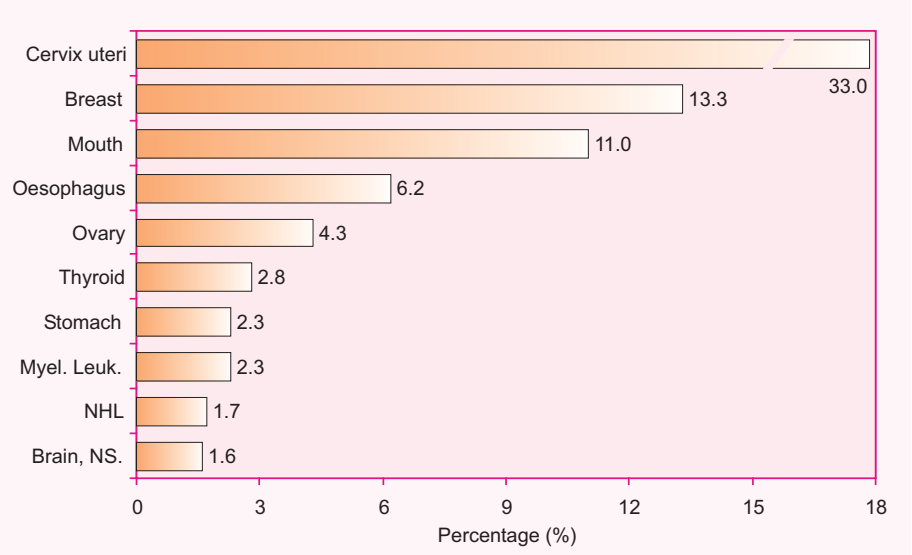
In *Dibrugarh*, cervix was the leading site, accounting for 15% of cancers in females, followed by oesophagus(13%), breast(12%), ovary(8%) and mouth(7%).

## Fig. 1.1(b) : Ten Leading Sites of Cancer - Females

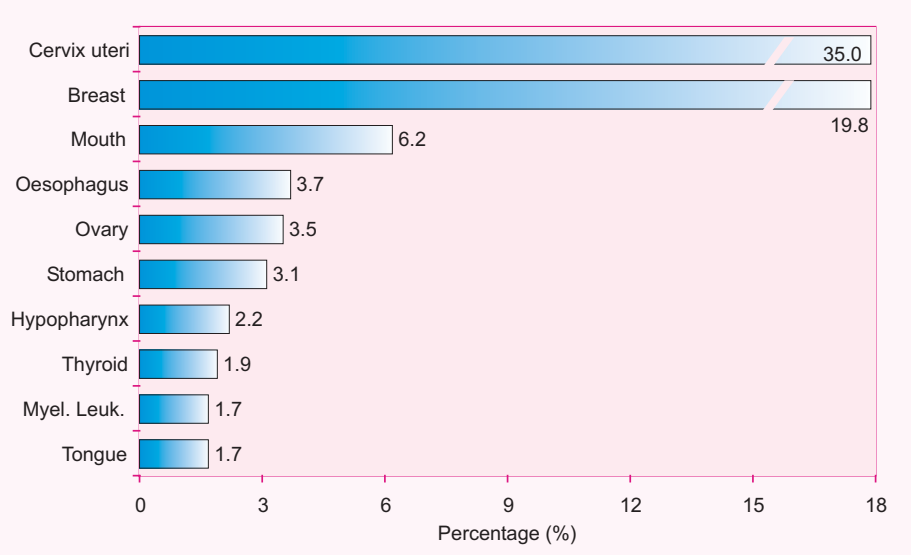
### Mumbai




### Bangalore

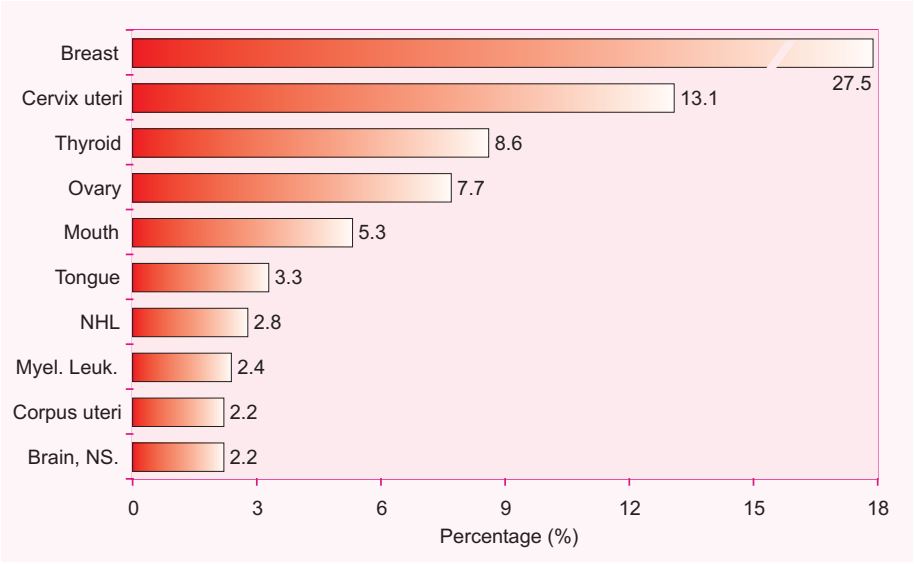



### Chennai

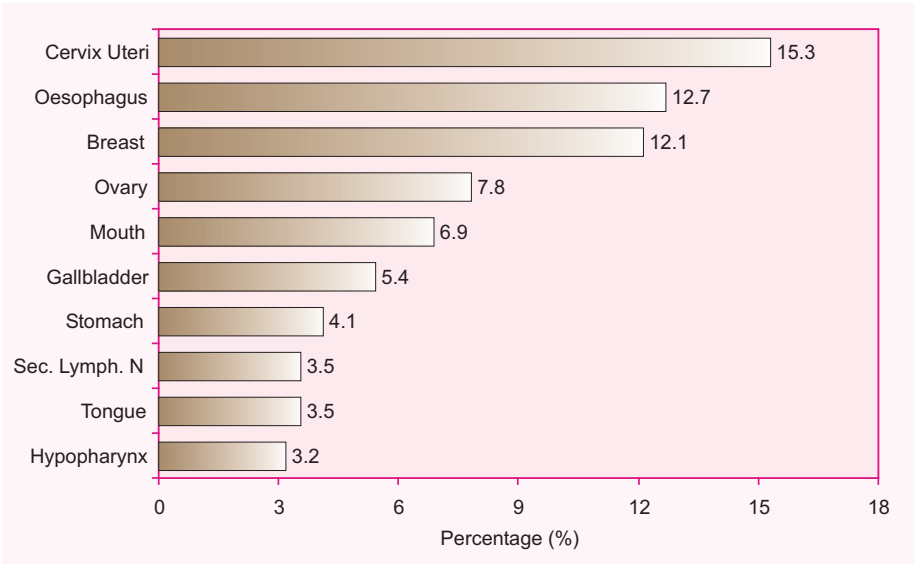


## Fig. 1.1(b) : Ten Leading Sites of Cancer - Females (Contd..)

### Thiruvananthapuram




### Dibrugarh



## LEADING SITES IN BROAD AGE GROUPS

The numbers and relative proportions of cancers in the broad age groups 0-14, 15-34, 35-64 and 65 and above years of age, for both sexes across registries is shown in Table 1.3 and Fig. 1.2. Figures 1.3 to 1.5 give the leading sites with their relative proportions in each of these broad age groups, except, childhood cancers (which is given separately in Chapter 3).

Proportion of young adults(15-34 years) varied from 7 to 14% in all the registries and both sexes. Proportion of patients in the age group 35-64 years varied from 57% in males in Thiruvananthanpuram 75% of cancers in females in Chennai and Dibrugarh. The mean age of female patients was 48.2 while that of male patients was 50.4.

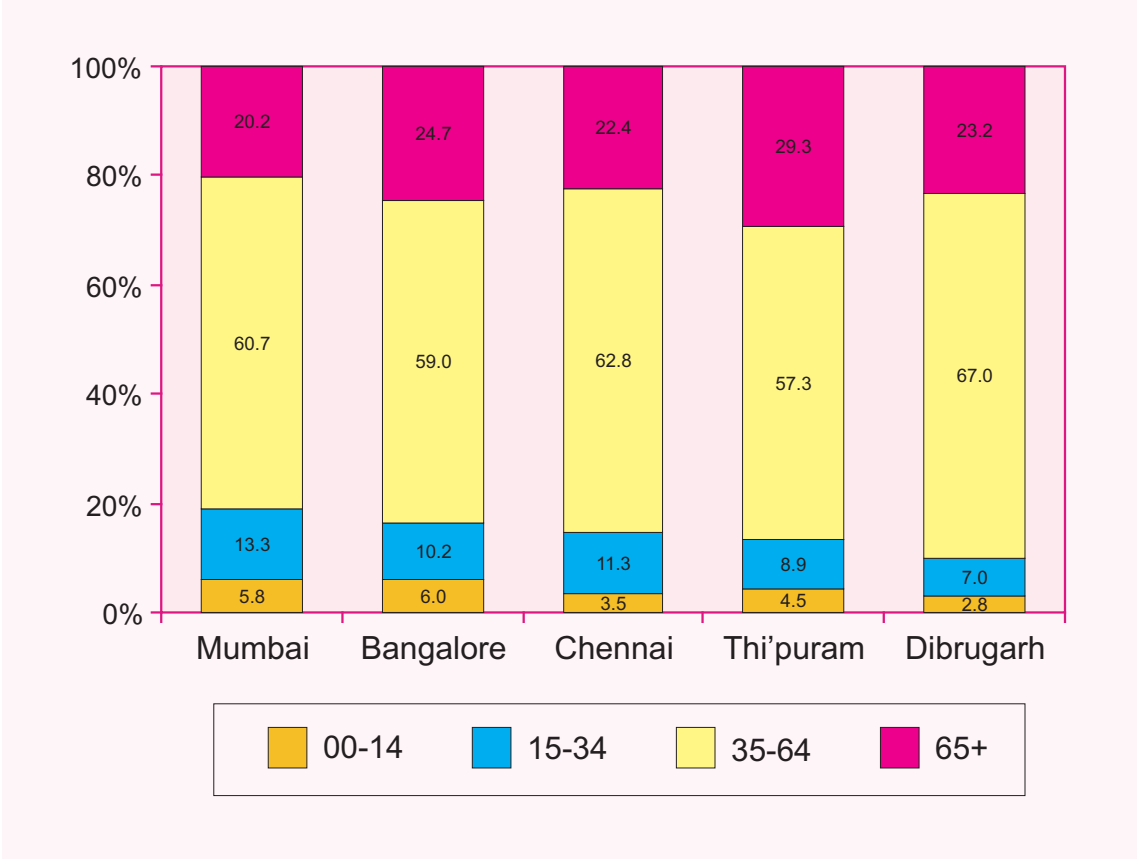
The leading sites of cancers according to broad age groups are depicted in Fig. 1.3(a) to 1.5(b).

**Table 1.3: Number (#) and Proportion(%) of Cancers by Broad Age Groups (1999-2000)**

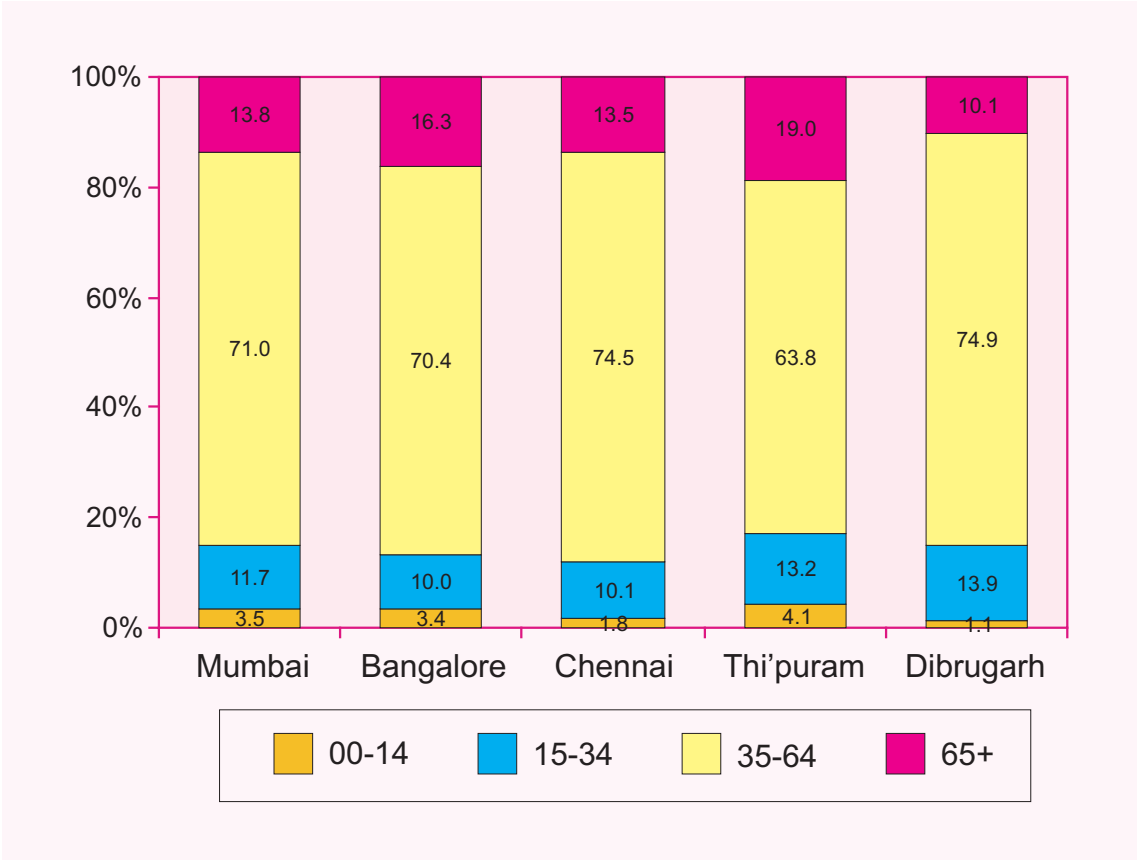
| Registry | 00-14 | | 15-34 | | 35-64 | | 65+ | | All Ages |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # |
| **Males** | | | | | | | | | |
| **Mumbai** | 1029 | 5.8 | 2342 | 13.3 | 10707 | 60.7 | 3559.0 | 20.2 | 17637 |
| **Bangalore** | 369 | 6.0 | 623 | 10.2 | 3603 | 59.0 | 1511.0 | 24.7 | 6106 |
| **Chennai** | 215 | 3.5 | 702 | 11.3 | 3892 | 62.8 | 1386.0 | 22.4 | 6195 |
| **Thi'puram** | 355 | 4.5 | 702 | 8.9 | 4500 | 57.3 | 2302.0 | 29.3 | 7859 |
| **Dibrugarh** | 28 | 2.8 | 70 | 7.0 | 668 | 67.0 | 231.0 | 23.2 | 997 |
| **Females** | | | | | | | | | |
| **Mumbai** | 472 | 3.5 | 1601 | 11.7 | 9716 | 71.0 | 1890.0 | 13.8 | 13679 |
| **Bangalore** | 254 | 3.4 | 755 | 10.0 | 5307 | 70.4 | 1227.0 | 16.3 | 7543 |
| **Chennai** | 130 | 1.8 | 721 | 10.1 | 5321 | 74.5 | 967.0 | 13.5 | 7139 |
| **Thi'puram** | 295 | 4.1 | 956 | 13.2 | 4621 | 63.8 | 1375.0 | 19.0 | 7247 |
| **Dibrugarh** | 6 | 1.1 | 74 | 13.9 | 400 | 74.9 | 54.0 | 10.1 | 534 |
| **Both Sexes** | | | | | | | | | |
| **Mumbai** | 1501 | 4.8 | 3943 | 12.6 | 20423 | 65.2 | 5449.0 | 17.4 | 31316 |
| **Bangalore** | 623 | 4.6 | 1378 | 10.1 | 8910 | 65.3 | 2738.0 | 20.1 | 13649 |
| **Chennai** | 345 | 2.6 | 1423 | 10.7 | 9213 | 69.1 | 2353.0 | 17.6 | 13334 |
| **Thi'puram** | 650 | 4.3 | 1658 | 11.0 | 9121 | 60.4 | 3677.0 | 24.3 | 15106 |
| **Dibrugarh** | 34 | 2.2 | 144 | 9.4 | 1068 | 69.8 | 285.0 | 18.6 | 1531 |

## Fig. 1.2 : Stack(100%) diagram showing Proportion of Cancers by Broad Age Groups

### Males




### Females



### Age Group (15-34 Years)

**Males:**

Myeloid leukaemia was the leading site in Mumbai and the second leading site in Bangalore, Chennai and Thiruvananthapuram. Brain was the leading site in Bangalore and within first five in Thiruvananthapuram and Dibrugarh. Bone was the leading site in Chennai and Dibrugarh and within first five at other HBCRs. NHL was an important site figuring within first five at all the registries.

**Females:**

Breast was the leading site followed by cervix and myeloid leukaemia in Mumbai and Chennai whereas in Bangalore, the leading site was cervix followed by breast and thyroid gland. Thiruvananthapuram reported thyroid gland as the leading site followed by breast and ovary. In Dibrugarh, ovary was the leading site followed by breast and cervix.

### Age Group (35-64 Years)

**Males:**

Mouth was the leading site in Mumbai, second leading site in Chennai and Thiruvananthapuram and third in Dibrugarh. Oesophagus was the leading site in Bangalore and within first five in other registries. Stomach was first in Chennai, fourth in Bangalore and within ten in other registries. Lung was the leading site in Thiruvananthapuram and within five in other registries except Dibrugarh. Hypopharynx was the leading site in Dibrugarh.

**Females:**

Breast and cervix were the leading sites in all the registries; breast being the first in Mumbai and Thiruvananthapuram and cervix in Bangalore and Chennai. Ovary and mouth were other important sites within first five. Oesophagus was within first five leading sites in all the registries except Thiruvananthapuram. Thyroid gland was fourth leading site only in Thiruvananthapuram and within first ten in Bangalore and Chennai.

### Age Group (65 Years and above)

**Males:**

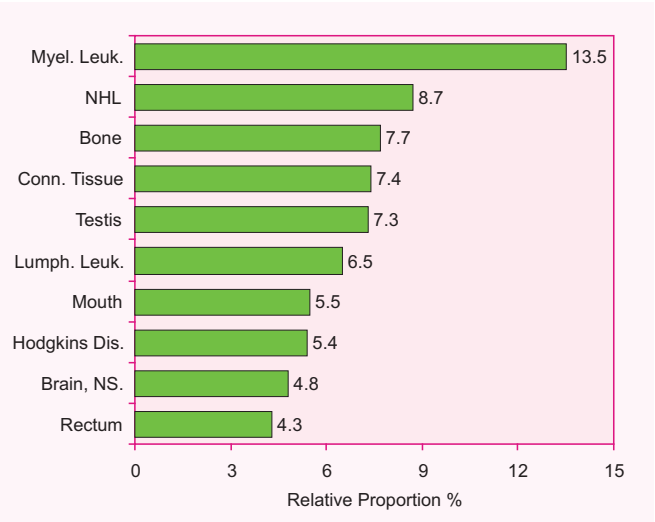
In this age group, lung was the leading site in Mumbai and Thiruvananthapuram, oesophagus in Bangalore and Dibrugarh and mouth in Chennai. Hypopharynx was within five in Mumbai (third), Bangalore (second) and Chennai (second). Gall bladder was one of the leading sites in Dibrugarh (second) only.

**Females:**

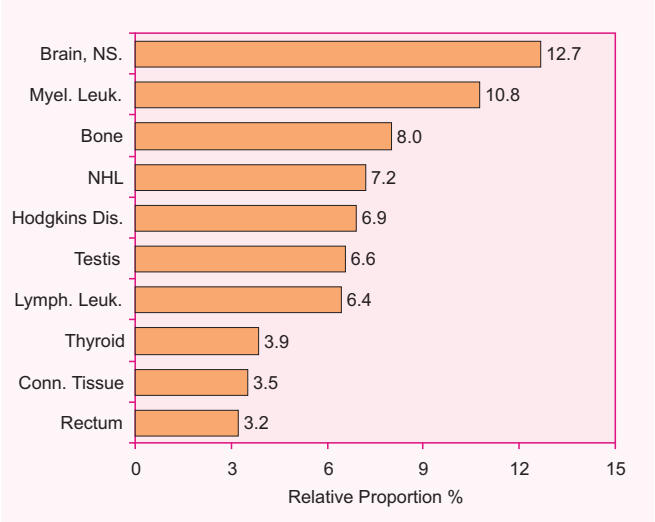
Cervix was the leading site in this age group in all the registries except Dibrugarh. It was followed by breast except in Bangalore (mouth). In Dibrugarh, cervix was fourth leading site. Oesophagus was the leading site followed by gall bladder and mouth.

# Fig. 1.3(a) : Leading Sites in Broad Age Group (15-34 Years) - Males (1999-2000)

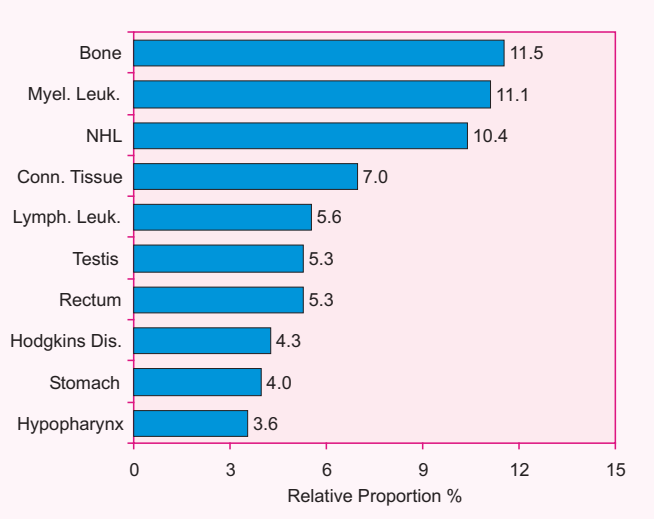
## Mumbai



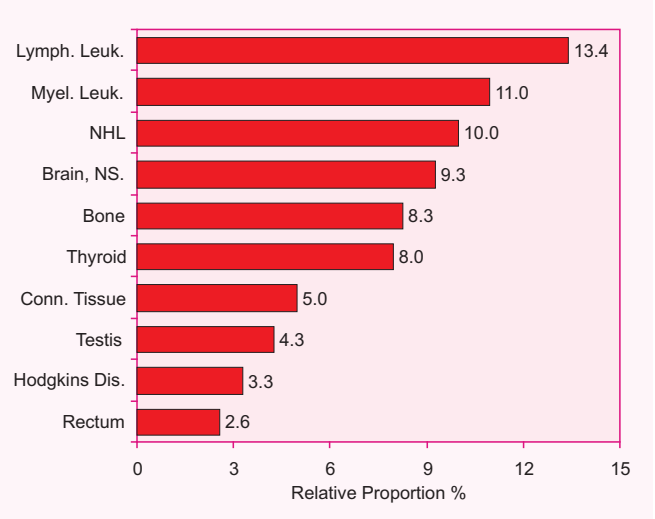

## Bangalore



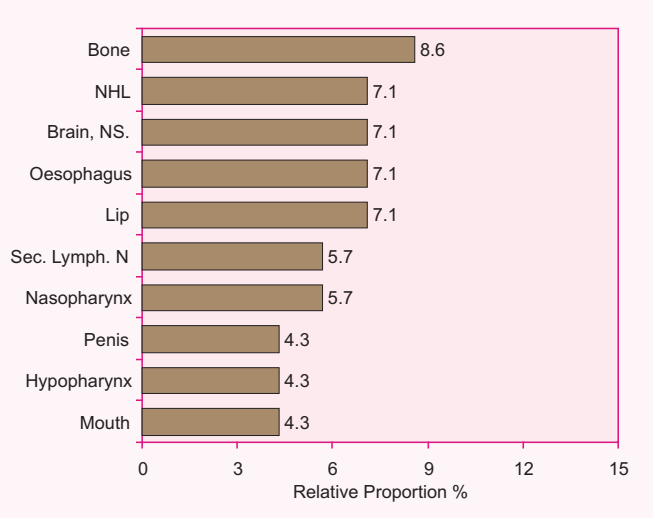

## Chennai




## Thiruvananthapuram

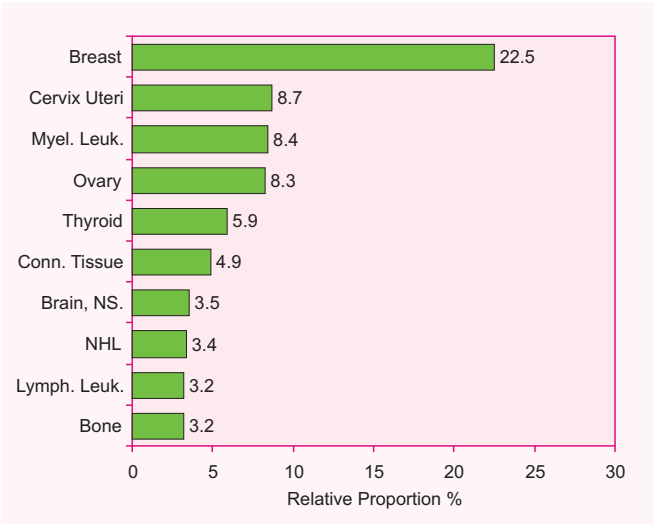



## Dibrugarh

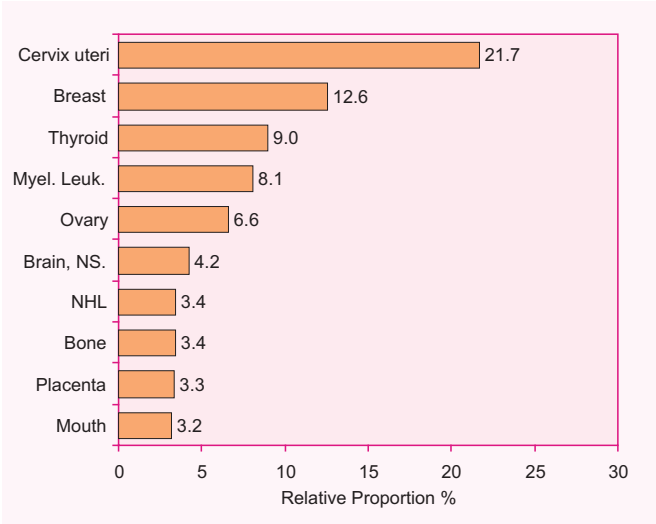


# Fig. 1.3(b) : Leading Sites in Broad Age Group (15-34 Years) - Females (1999-2000)

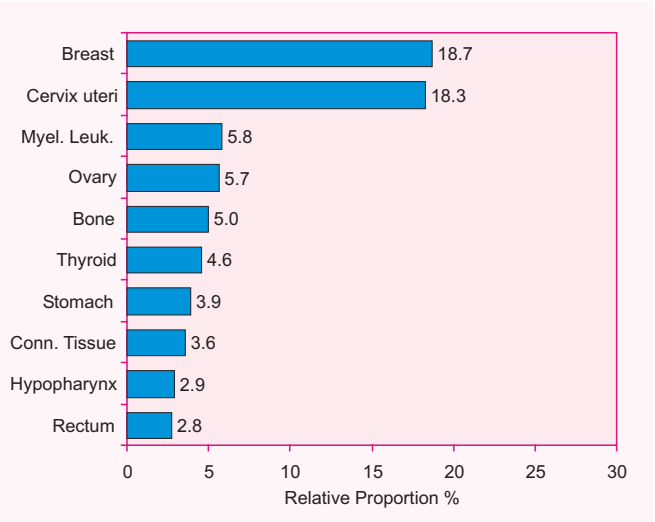
## Mumbai



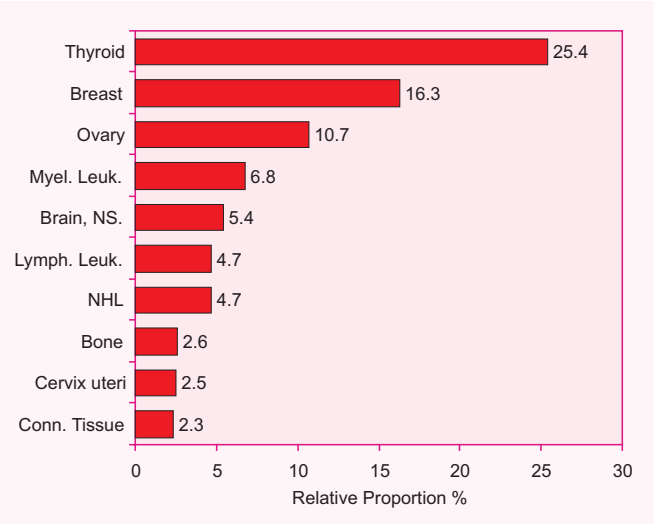

## Bangalore



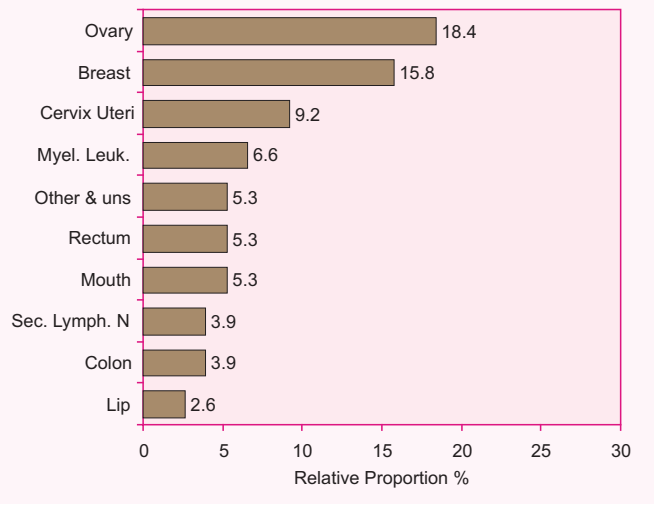

## Chennai




## Thiruvananthapuram

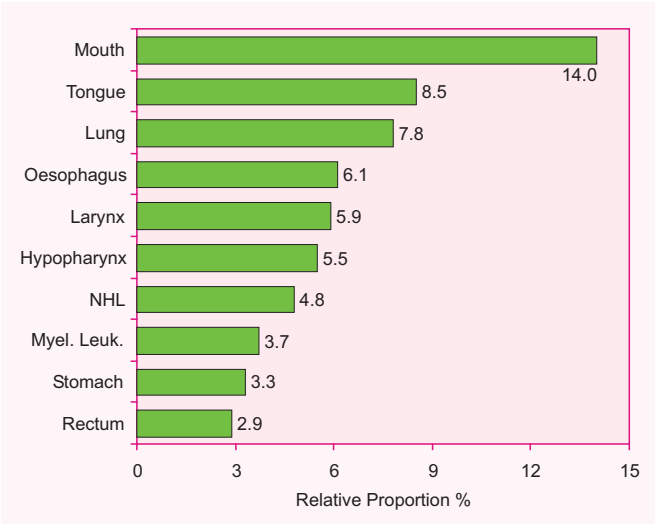



## Dibrugarh

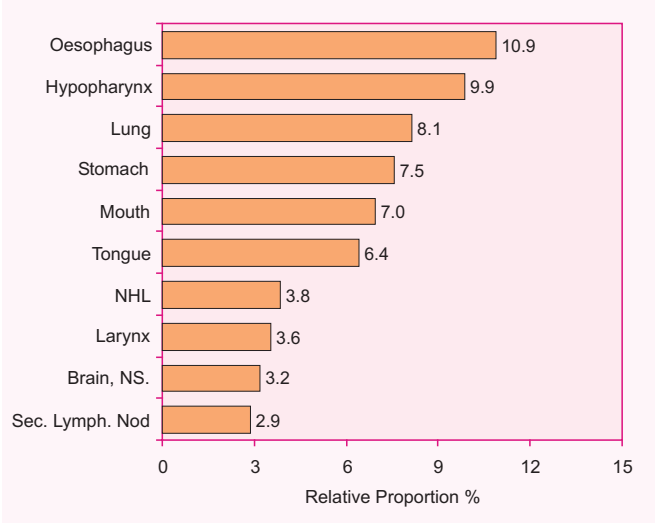


# Fig. 1.4(a) : Leading Sites in Broad Age Group (35-64 Years) - Males (1999-2000)

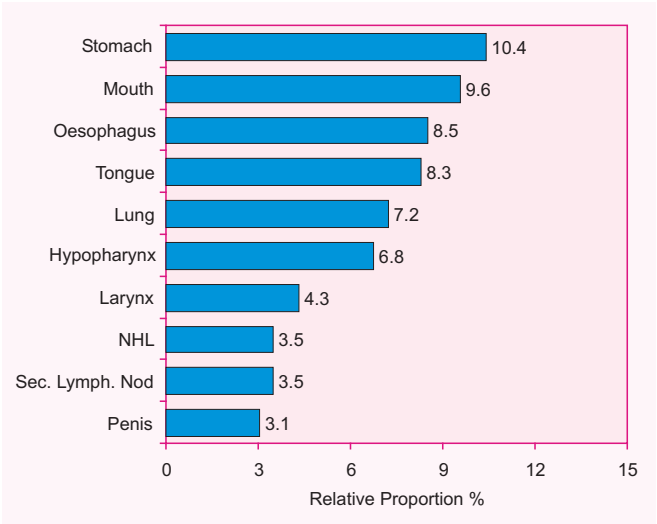
## Mumbai



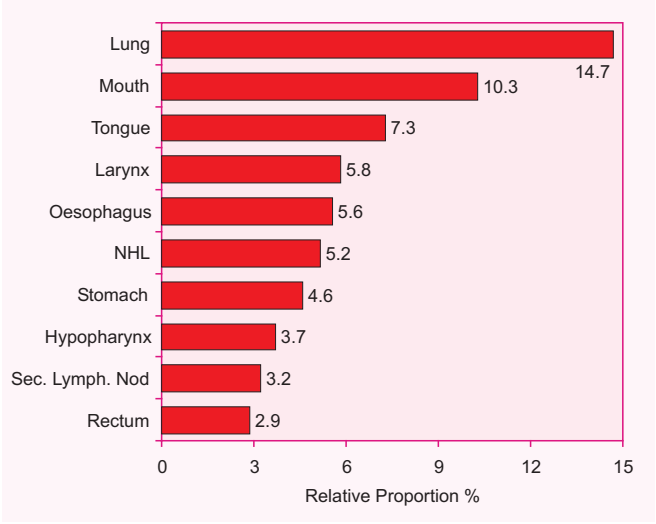

## Bangalore



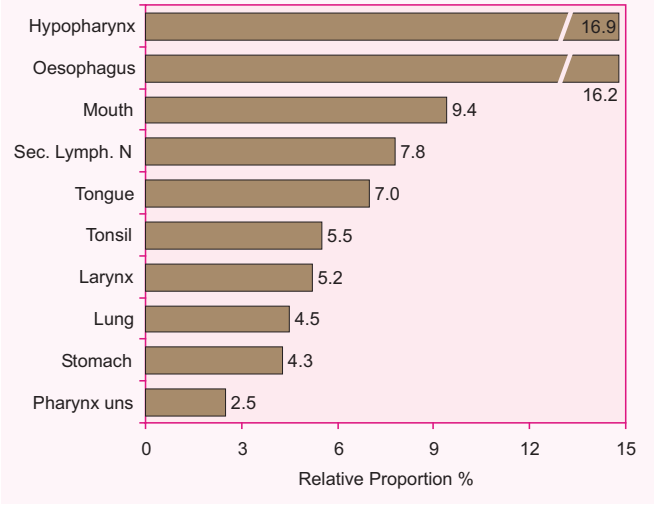

## Chennai




## Thiruvananthapuram

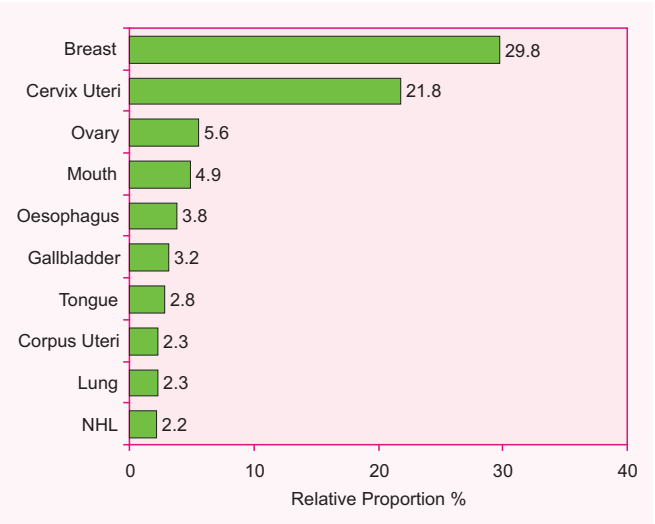



## Dibrugarh

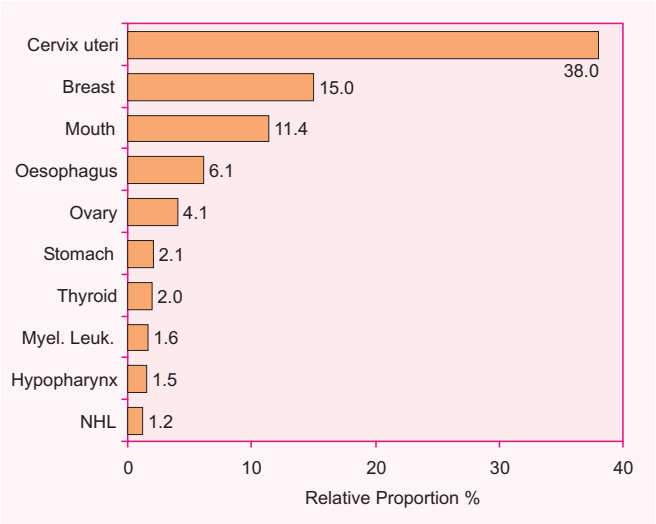


# Fig. 1.4(b) : Leading Sites in Broad Age Group (35-64 Years) - Females (1999-2000)

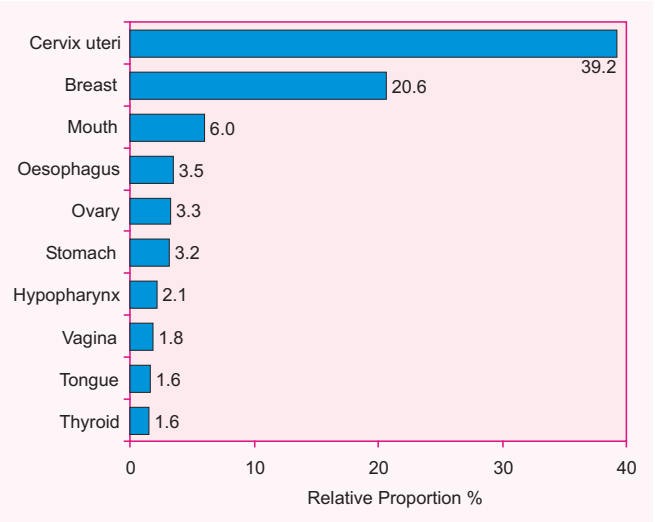
## Mumbai



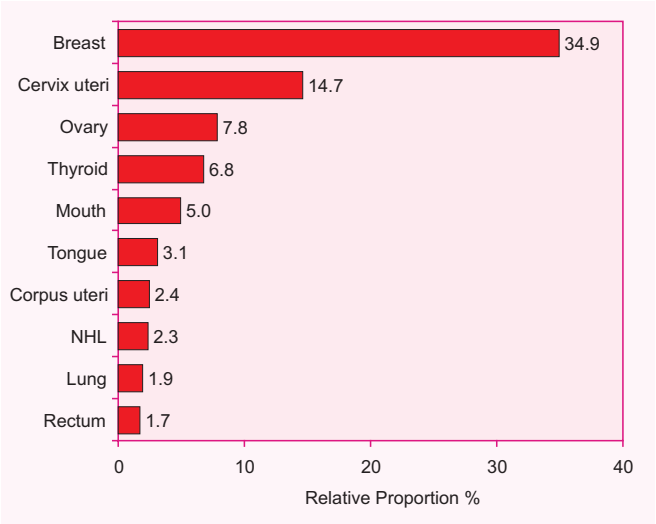

## Bangalore



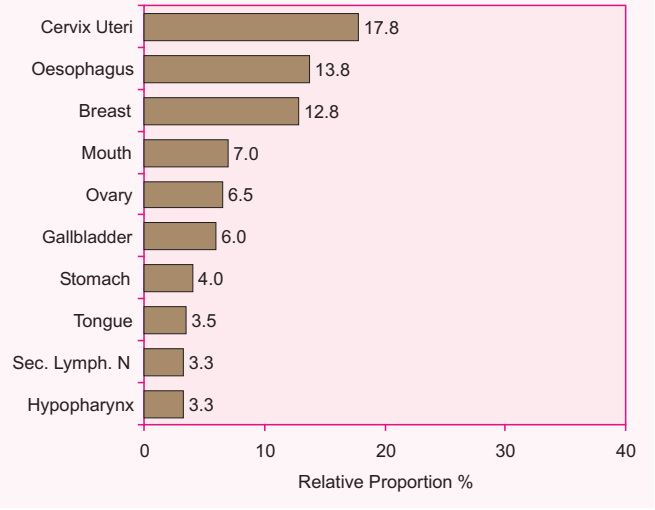

## Chennai




## Thiruvananthapuram

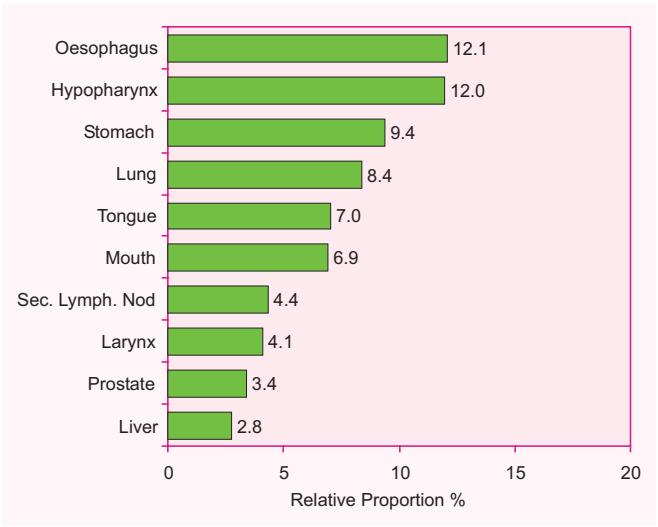



## Dibrugarh

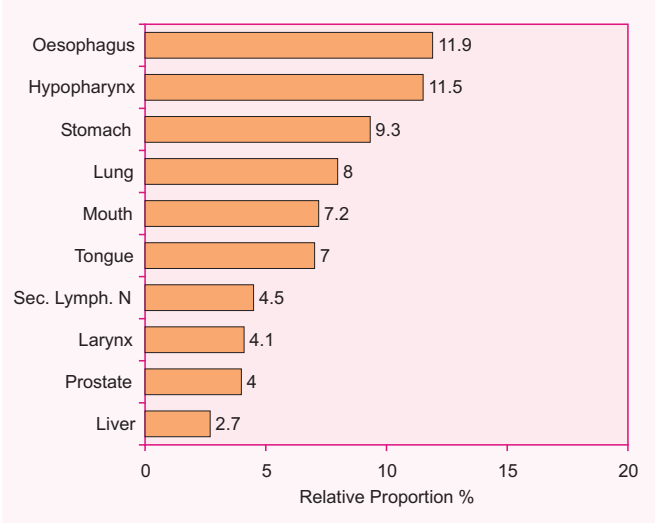


# Fig. 1.5(a) : Leading Sites in Broad Age Group (65 Years and above) - Males (1999-2000)

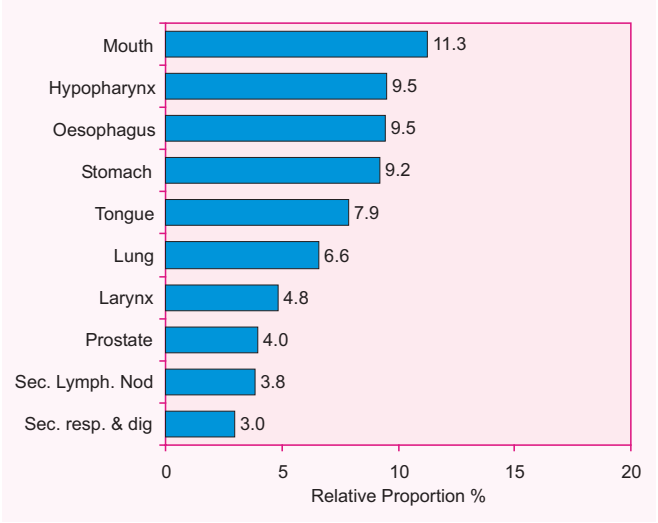
## Mumbai



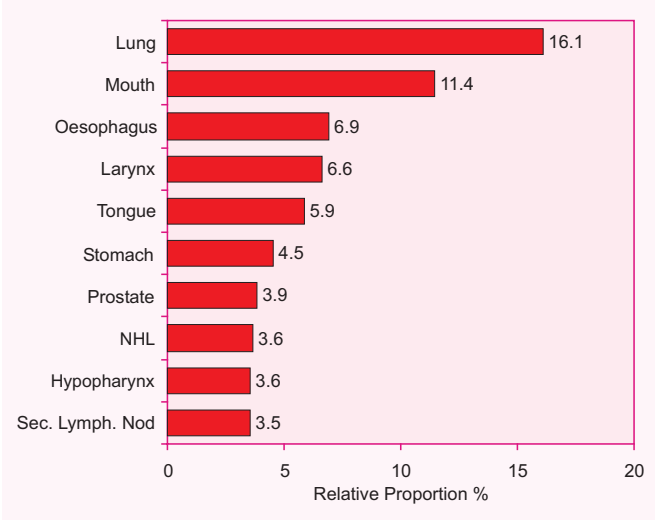

## Bangalore



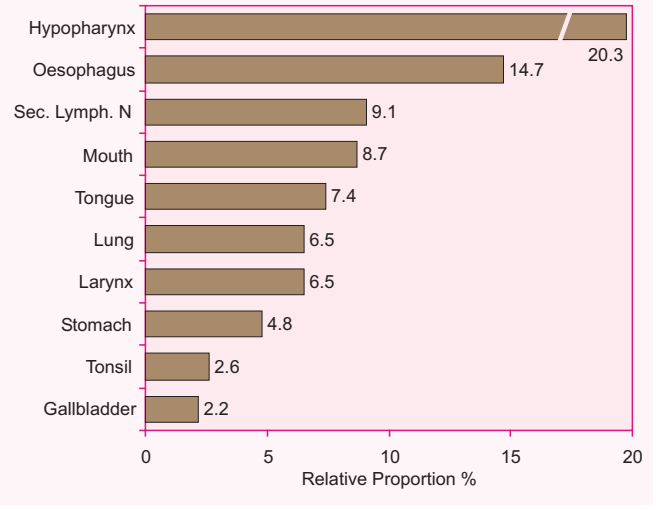

## Chennai




## Thiruvananthapuram

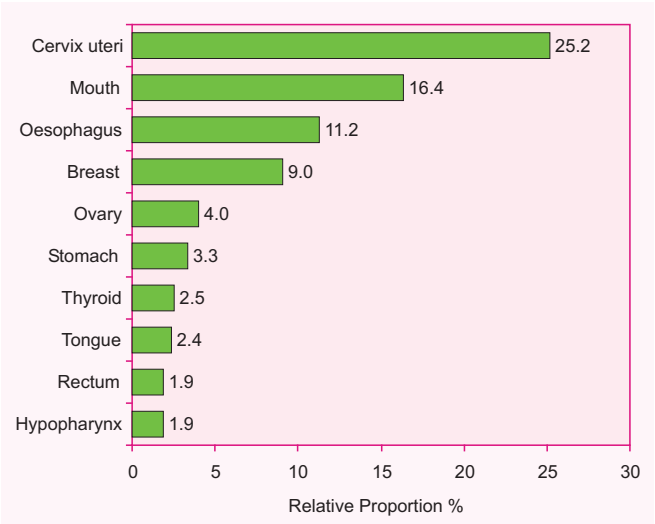



## Dibrugarh

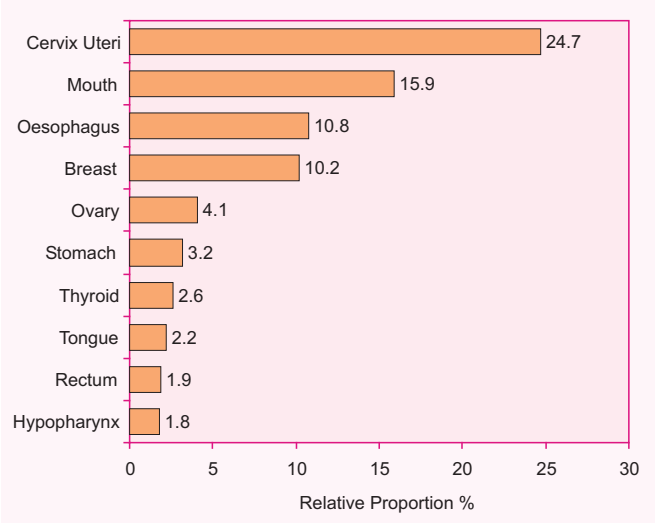


# Fig. 1.5(b) : Leading Sites in Broad Age Group (65 Years and above) - Females (1999-2000)

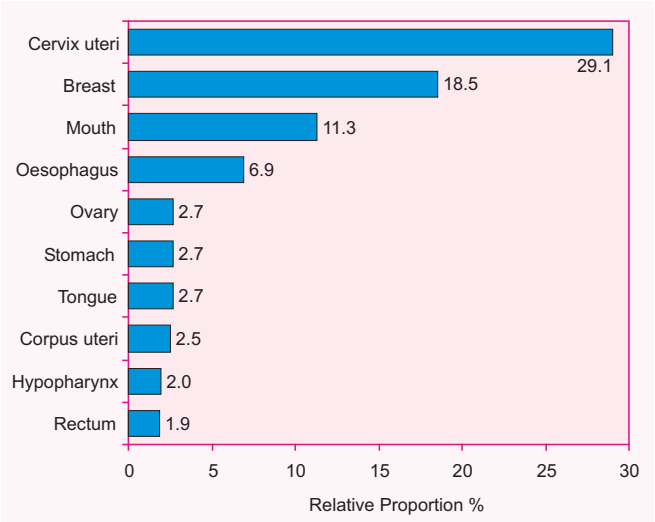
## Mumbai



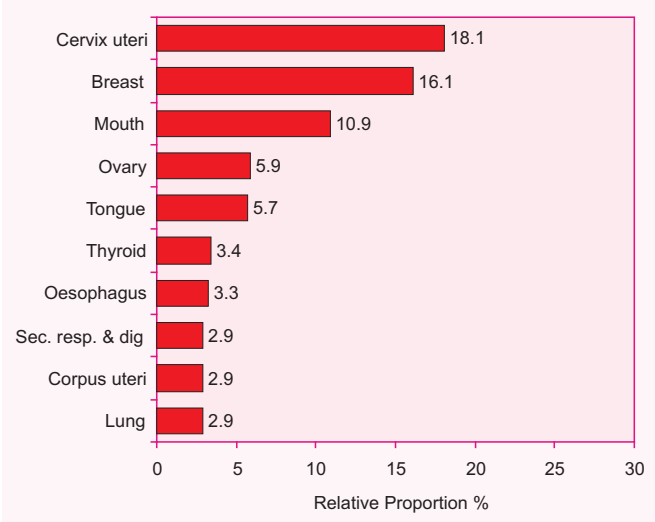

## Bangalore



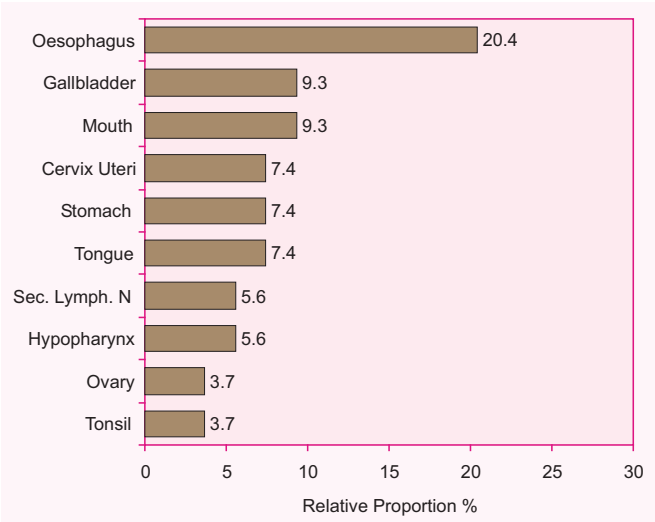

## Chennai




## Thiruvananthapuram




## Dibrugarh



# Chapter 2

## CANCERS IN CHILDHOOD

In all registries, childhood cancer constituted approximately 1-6% (Table 2.1) of all cancers. In boys, the proportion was lowest in Dibrugarh (about 3%) and highest in Bangalore (6%). In girls, it varied from 1% at Dibrugarh to 4% at Thiruvananthapuram.

The five year age distribution of childhood cancer in different registries has been given in Table 2.2. The relative proportion in the age group 0-4 varied from 30% in boys and 32% in girls in Mumbai to a high of 43% in boys and 41% in girls in Thiruvananthapuram. The relative proportion in the age group 5-9 years varied from 28.5% in boys in Thiruvananthapuram to 35.7% in boys in Dibrugarh. This proportion was slightly less in girls in all HBCRs. Girls in all registries had a higher relative proportion of cancers in the 10-14 year age group.

Table 2.3 and Figures 2.1(a) and 2.1(b) present the proportion according to broad types of childhood cancers. Tables 2.4(a) and 2.4(b) give further details of types of childhood cancer. Leukaemia is the predominant form of childhood cancer followed by lymphomas. Tumours of the central nervous system, bone tumours, soft-tissue sarcomas and germ-cell tumours are other important types of cancer in childhood. Proportion of lymphomas was higher in boys compared to that in girls.

**TABLE 2.1: Number (#) and Proportion (%) of cancers in childhood relative to all cancers (1999-2000)**

| Registry | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | All Cancers | # | % | All Cancers | # | % |
| **Mumbai** | 17637 | 1029 | 5.8 | 13679 | 472 | 3.5 |
| **Bangalore** | 6106 | 369 | 6.0 | 7543 | 254 | 3.4 |
| **Chennai** | 6195 | 215 | 3.5 | 7139 | 130 | 1.8 |
| **Thi'puram** | 7859 | 355 | 4.5 | 7247 | 295 | 4.1 |
| **Dibrugarh** | 997 | 28 | 2.8 | 536 | 6 | 1.1 |

## Table 2.2: Number (#) & Proportion (%) of Childhood Cancers by 5-year Age Group (1999-2000)

| Registry | Age Group (Years) | | | | | | All Childhood Cancers |
|---|---|---|---|---|---|---|---|
| | 0-4 | | 5-9 | | 10-14 | | |
| | # | % | # | % | # | % | |
| **Males** | | | | | | | |
| **Mumbai** | 306 | 29.7 | 337 | 32.8 | 386 | 37.5 | 1029 |
| **Bangalore** | 124 | 33.6 | 125 | 33.9 | 120 | 32.5 | 369 |
| **Chennai** | 64 | 29.8 | 72 | 33.5 | 79 | 36.7 | 215 |
| **Thi'puram** | 154 | 43.4 | 101 | 28.5 | 100 | 28.2 | 355 |
| **Dibrugarh** | 12 | 42.9 | 10 | 35.7 | 6 | 21.4 | 28 |
| **Females** | | | | | | | |
| **Mumbai** | 151 | 32.0 | 144 | 30.5 | 177 | 37.5 | 472 |
| **Bangalore** | 83 | 32.7 | 77 | 30.3 | 94 | 37.0 | 254 |
| **Chennai** | 48 | 36.9 | 31 | 23.8 | 51 | 39.2 | 130 |
| **Thi'puram** | 122 | 41.4 | 67 | 22.7 | 106 | 35.9 | 295 |
| **Dibrugarh** | 2 | 33.3 | 2 | 33.3 | 2 | 33.3 | 6 |
| **Both Sexes** | | | | | | | |
| **Mumbai** | 389 | 30.3 | 414 | 32.3 | 480 | 37.4 | 1283 |
| **Bangalore** | 172 | 34.5 | 156 | 31.3 | 171 | 34.3 | 499 |
| **Chennai** | 112 | 32.5 | 103 | 29.9 | 130 | 37.7 | 345 |
| **Thi'puram** | 276 | 42.5 | 168 | 25.8 | 206 | 31.7 | 650 |
| **Dibrugarh** | 14 | 41.2 | 12 | 35.3 | 8 | 23.5 | 34 |

## Table 2.3: Number (#) & Relative Proportion (%) of Broad Types of Cancers in childhood (0-14 years) (1999-2000)

### Males

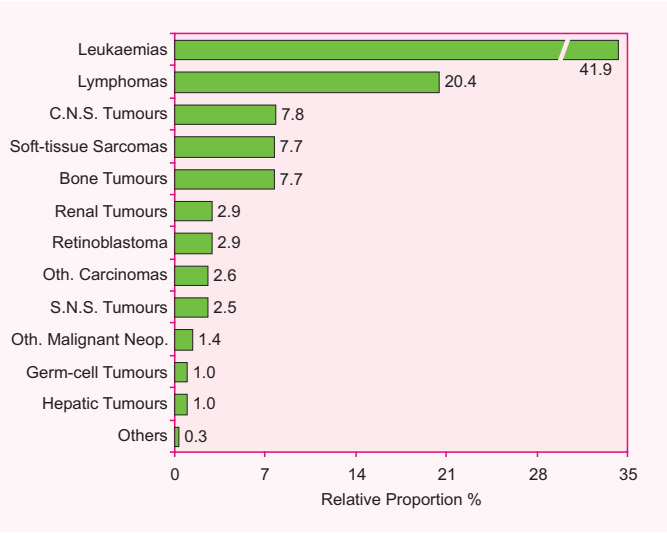
| Broad Types of Cancers in Childhood | | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # | % | # | % | # | % | # | % | # | % |
| I | Leukaemias | 431 | 41.89 | 140 | 37.94 | 77 | 35.81 | 157 | 44.23 | 7 | 25.00 |
| II | Lymphomas | 210 | 20.41 | 60 | 16.26 | 44 | 20.47 | 46 | 12.96 | 3 | 10.71 |
| III | C.N.S. Tumours | 80 | 7.77 | 53 | 14.36 | 8 | 3.72 | 36 | 10.14 | 2 | 7.14 |
| IV | S.N.S. Tumours | 26 | 2.53 | 9 | 2.44 | 7 | 3.26 | 17 | 4.79 | 0 | 0.00 |
| V | Retinoblastoma | 30 | 2.92 | 17 | 4.61 | 18 | 8.37 | 15 | 4.23 | 2 | 7.14 |
| VI | Renal Tumours | 30 | 2.92 | 14 | 3.79 | 5 | 2.33 | 14 | 3.94 | 4 | 14.29 |
| VII | Hepatic Tumours | 10 | 0.97 | 8 | 2.17 | 3 | 1.40 | 8 | 2.25 | 0 | 0.00 |
| VIII | Bone Tumours | 79 | 7.68 | 20 | 5.42 | 26 | 12.09 | 20 | 5.63 | 1 | 3.57 |
| IX | Soft-tissue Sarcomas | 79 | 7.68 | 10 | 2.71 | 12 | 5.58 | 26 | 7.32 | 5 | 17.86 |
| X | Germ-cell Tumours | 10 | 0.97 | 8 | 2.17 | 2 | 0.93 | 6 | 1.69 | 2 | 7.14 |
| XI | Oth. Carcinomas | 27 | 2.62 | 14 | 3.79 | 8 | 3.72 | 6 | 1.69 | 1 | 3.57 |
| XII | Oth. Malignant Neop. | 14 | 1.36 | 13 | 3.52 | 4 | 1.86 | 3 | 0.85 | 1 | 3.57 |
| XIII | Others | 3 | 0.29 | 3 | 0.81 | 1 | 0.47 | 1 | 0.28 | 0 | 0.00 |
| | **All Types** | **1029** | **100.00** | **369** | **100.00** | **215** | **100.00** | **355** | **100.00** | **28** | **100.00** |

### Females

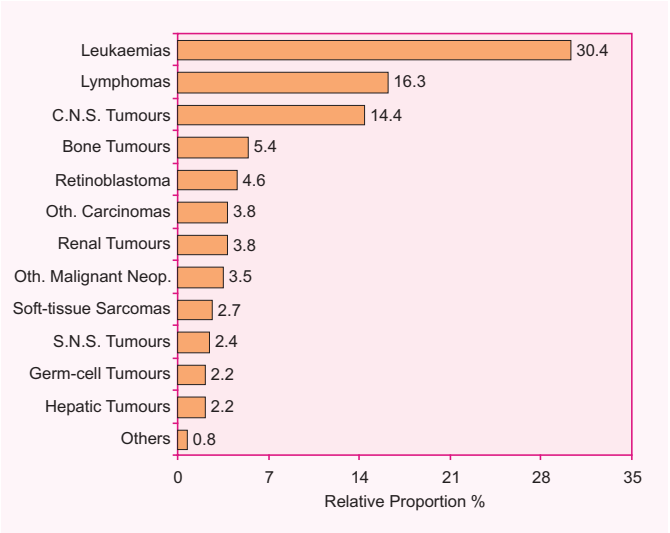
| Broad Types of Cancers in Childhood | | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | # | % | # | % | # | % | # | % | # | % |
| I | Leukaemias | 186 | 39.41 | 91 | 35.83 | 51 | 39.23 | 109 | 36.95 | 0 | 0.00 |
| II | Lymphomas | 40 | 8.47 | 27 | 10.63 | 10 | 7.69 | 10 | 3.39 | 0 | 0.00 |
| III | C.N.S. Tumours | 61 | 12.92 | 35 | 13.78 | 4 | 3.08 | 38 | 12.88 | 1 | 16.67 |
| IV | S.N.S. Tumours | 4 | 0.85 | 9 | 3.54 | 4 | 3.08 | 11 | 3.73 | 0 | 0.00 |
| V | Retinoblastoma | 22 | 4.66 | 13 | 5.12 | 14 | 10.77 | 16 | 5.42 | 0 | 0.00 |
| VI | Renal Tumours | 14 | 2.97 | 12 | 4.72 | 3 | 2.31 | 17 | 5.76 | 1 | 16.67 |
| VII | Hepatic Tumours | 2 | 0.42 | 0 | 0.00 | 3 | 2.31 | 3 | 1.02 | 0 | 0.00 |
| VIII | Bone Tumours | 40 | 8.47 | 17 | 6.69 | 19 | 14.62 | 25 | 8.47 | 1 | 16.67 |
| IX | Soft-tissue Sarcomas | 46 | 9.75 | 14 | 5.51 | 9 | 6.92 | 17 | 5.76 | 0 | 0.00 |
| X | Germ-cell Tumours | 31 | 6.57 | 12 | 4.72 | 6 | 4.62 | 19 | 6.44 | 0 | 0.00 |
| XI | Oth. Carcinomas | 17 | 3.60 | 11 | 4.33 | 4 | 3.08 | 28 | 9.49 | 1 | 16.67 |
| XII | Oth. Malignant Neop. | 9 | 1.91 | 13 | 5.12 | 2 | 1.54 | 1 | 0.34 | 0 | 0.00 |
| XIII | Others | 0 | 0.00 | 0 | 0.00 | 1 | 0.77 | 1 | 0.34 | 2 | 33.33 |
| | **All Types** | **472** | **100.00** | **254** | **100** | **130** | **100.00** | **295** | **100.00** | **6** | **100.0** |

# Fig. 2.1(a): Proportion of Broad Types of Childhood Cancers (0-14 years) - Males (1999-2000)

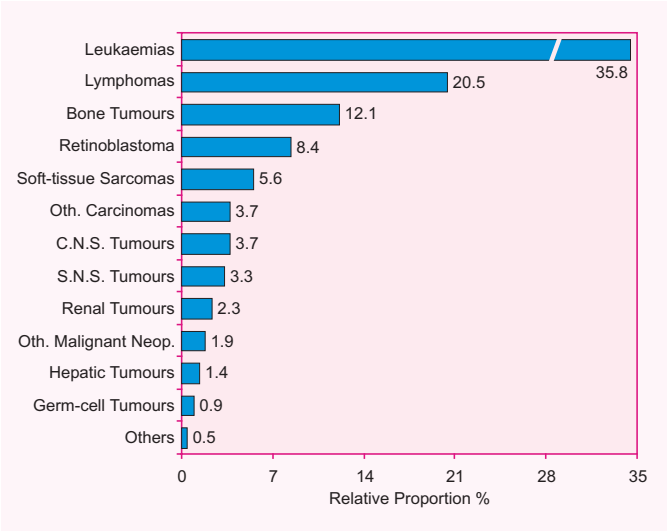
## Mumbai



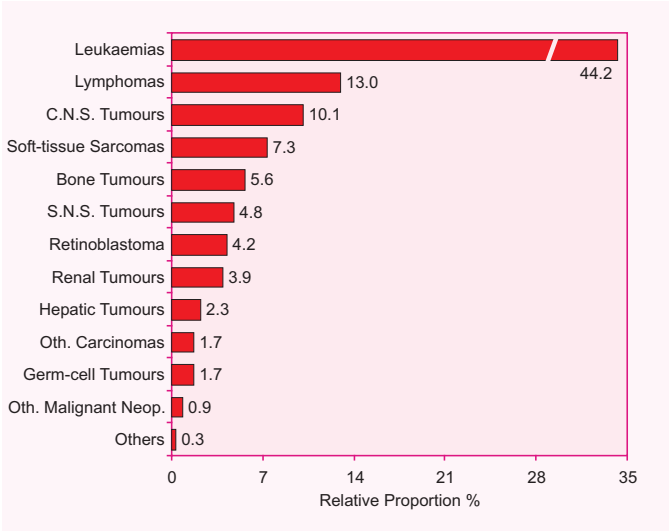

## Bangalore



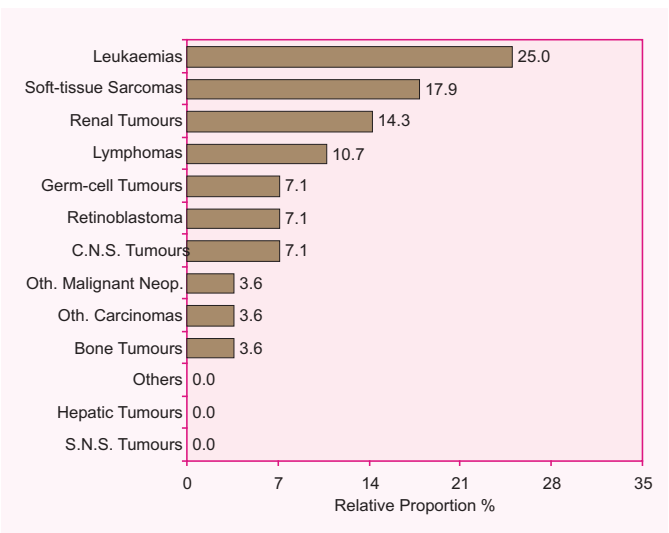

## Mumbai




## Bangalore

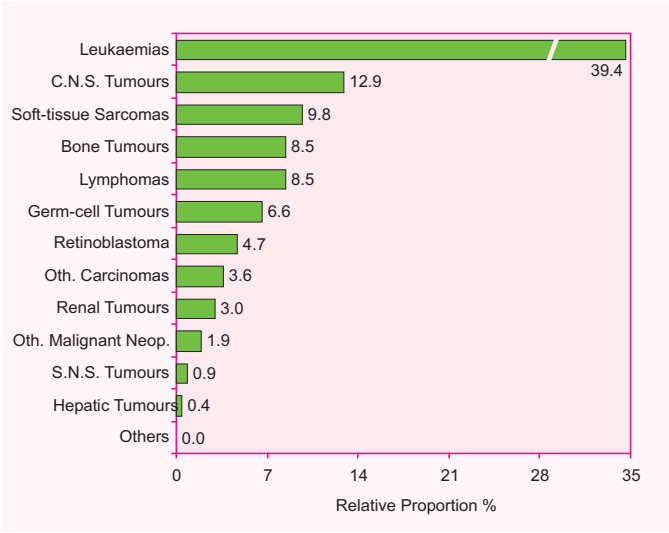



## Dibrugarh

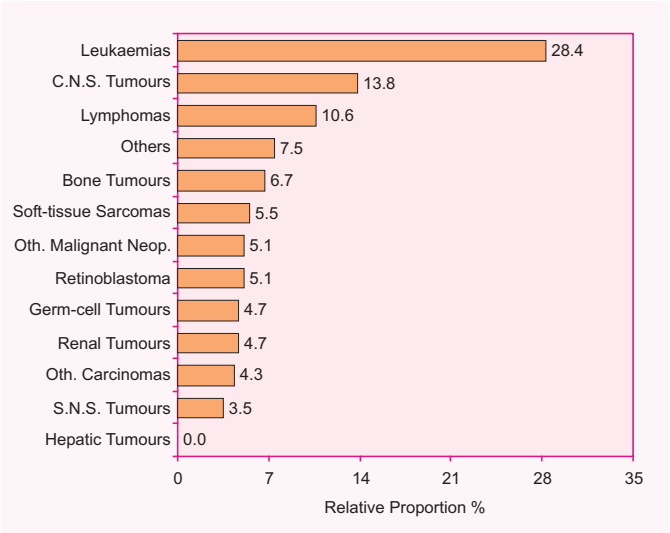


# Fig. 2.1(b): Proportion of Broad Types of Childhood Cancers (0-14 years) - Females (1999-2000)

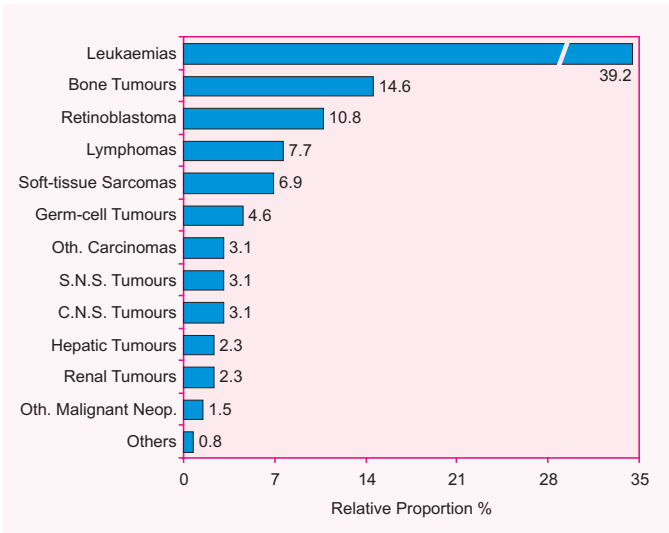
## Mumbai



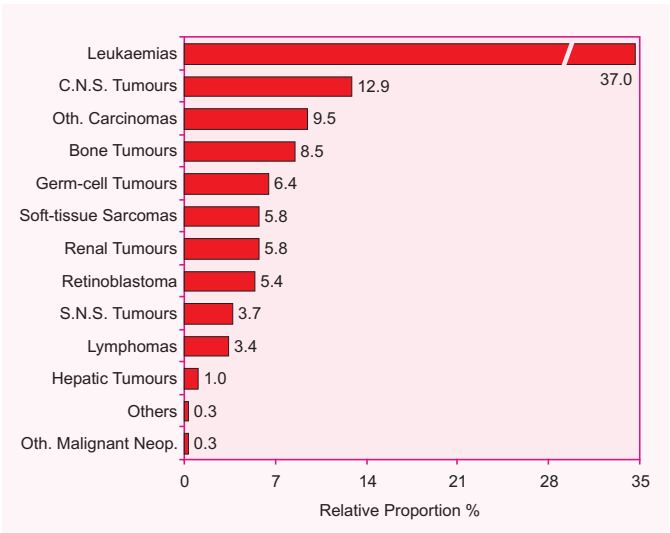

## Bangalore



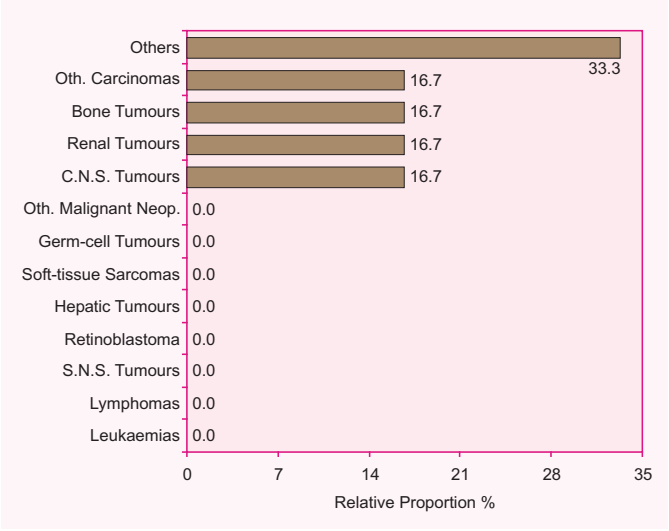

## Mumbai




## Bangalore




## Dibrugarh



## Table 2.4(a): Number (#) & Relative Proportion (%) of Specific Types of Cancer in Childhood (0-14 years) - Males (1999-2000)

| Specific Types of Cancers in Childhood | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| I. LEUKAEMIAS | 431 | 41.89 | 140 | 37.94 | 77 | 35.81 | 157 | 44.23 | 7 | 25.00 |
| (a) Lymphoid leukaemia | 301 | 29.25 | 93 | 25.20 | 50 | 23.26 | 123 | 34.65 | 6 | 21.43 |
| (b) Acute non-lymphocytic leukaemia | 88 | 8.55 | 25 | 6.78 | 17 | 7.91 | 30 | 8.45 | 1 | 3.57 |
| (c) Chronic myeloid leukaemia | 12 | 1.17 | 5 | 1.36 | 2 | 0.93 | 2 | 0.56 | 0 | 0.00 |
| (d) Other specified leukaemias | 1 | 0.10 | 3 | 0.81 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (e) Unspecified leukaemia | 29 | 2.82 | 14 | 3.79 | 8 | 3.72 | 2 | 0.56 | 0 | 0.00 |
| II. LYMPHOMAS & RETICULOENDOTHELIAL NPLMS | 210 | 20.41 | 60 | 16.26 | 44 | 20.47 | 46 | 12.96 | 3 | 10.71 |
| (a) Hodgkin's disease | 120 | 11.66 | 35 | 9.49 | 20 | 9.30 | 26 | 7.32 | 0 | 0.00 |
| (b) Non-Hodgkin lymphoma | 64 | 6.22 | 10 | 2.71 | 19 | 8.84 | 13 | 3.66 | 3 | 10.71 |
| (c) Burkitt's lymphoma | 23 | 2.24 | 5 | 1.36 | 0 | 0.00 | 1 | 0.28 | 0 | 0.00 |
| (d)Miscellaneous lymphoreticular nplms | 1 | 0.10 | 4 | 1.08 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (e) Unspecified lymphomas | 2 | 0.19 | 6 | 1.63 | 5 | 2.33 | 6 | 1.69 | 0 | 0.00 |
| III. C.N.S.& MISC.INTRACRANIAL & INTRASPINAL NEOP. | 80 | 7.77 | 53 | 14.36 | 8 | 3.72 | 36 | 10.14 | 2 | 7.14 |
| (a) Ependymoma | 7 | 0.68 | 2 | 0.54 | 0 | 0.00 | 1 | 0.28 | 1 | 3.57 |
| (b) Astrocytoma | 30 | 2.92 | 14 | 3.79 | 2 | 0.93 | 11 | 3.10 | 0 | 0.00 |
| (c) Primitive neuroectodermal tumours | 26 | 2.53 | 24 | 6.50 | 4 | 1.86 | 12 | 3.38 | 1 | 3.57 |
| (d) Other gliomas | 13 | 1.26 | 6 | 1.63 | 1 | 0.47 | 3 | 0.85 | 0 | 0.00 |
| (e) Other specified intracranial & intraspinal | 4 | 0.39 | 1 | 0.27 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (f) Unspecified intracranial & intraspinal | 0 | 0.00 | 6 | 1.63 | 1 | 0.47 | 9 | 2.54 | 0 | 0.00 |
| IV. SYMPATHETIC NERVOUS SYSTEM TUMOURS | 26 | 2.53 | 9 | 2.44 | 7 | 3.26 | 17 | 4.79 | 0 | 0.00 |
| (a) Neuroblastoma & ganglioneuroblastoma | 26 | 2.53 | 9 | 2.44 | 7 | 3.26 | 17 | 4.79 | 0 | 0.00 |
| (b) Other SNS tumours | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| V. RETINOBLASTOMA | 30 | 2.92 | 17 | 4.61 | 18 | 8.37 | 15 | 4.23 | 2 | 7.14 |
| VI. RENAL TUMOURS | 30 | 2.92 | 14 | 3.79 | 5 | 2.33 | 14 | 3.94 | 4 | 14.29 |
| (a) Wilms' tumour | 30 | 2.92 | 11 | 2.98 | 4 | 1.86 | 13 | 3.66 | 1 | 3.57 |
| (b) Renal carcinoma | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 0.28 | 0 | 0.00 |
| (c) Unsp. malignant renal tumours | 0 | 0.00 | 3 | 0.81 | 1 | 0.47 | 0 | 0.00 | 3 | 10.71 |
| VII. HEPATIC TUMOURS | 10 | 0.97 | 8 | 2.17 | 3 | 1.40 | 8 | 2.25 | 0 | 0.00 |
| (a) Hepatoblastoma | 9 | 0.87 | 5 | 1.36 | 3 | 1.40 | 7 | 1.97 | 0 | 0.00 |
| (b) Hepatic carcinoma | 0 | 0.00 | 1 | 0.27 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (c) Unsp. malignant hepatic tumours | 1 | 0.10 | 2 | 0.54 | 0 | 0.00 | 1 | 0.28 | 0 | 0.00 |
| VIII. MALIGNANT BONE TUMOURS | 79 | 7.68 | 20 | 5.42 | 26 | 12.09 | 20 | 5.63 | 1 | 3.57 |
| (a) Osteosarcoma | 49 | 4.76 | 9 | 2.44 | 13 | 6.05 | 16 | 4.51 | 1 | 3.57 |
| (b) Chondrosarcoma | 0 | 0.00 | 1 | 0.27 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (c) Ewing's sarcoma | 25 | 2.43 | 8 | 2.17 | 11 | 5.12 | 4 | 1.13 | 0 | 0.00 |
| (d) Other specified malignant bone tumours | 0 | 0.00 | 1 | 0.27 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (e) Unspecified malignant bone tumours | 5 | 0.49 | 1 | 0.27 | 2 | 0.93 | 0 | 0.00 | 0 | 0.00 |
| IX. SOFT-TISSUE(S-T) SARCOMAS(S) | 79 | 7.68 | 10 | 2.71 | 12 | 5.58 | 26 | 7.32 | 5 | 17.86 |
| (a) Rhabdomyos. embryonals. | 33 | 3.21 | 4 | 1.08 | 8 | 3.72 | 15 | 4.23 | 0 | 0.00 |
| (b) Fibros.neurofibros.&oth.fibromatous neop. | 4 | 0.39 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 2 | 7.14 |
| (c) Kaposi's sarcoma | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (d) Other specified soft-tissue sarcoma | 28 | 2.72 | 4 | 1.08 | 0 | 0.00 | 8 | 2.25 | 2 | 7.14 |
| (e) Unspecified soft-tissue sarcoma | 14 | 1.36 | 2 | 0.54 | 4 | 1.86 | 3 | 0.85 | 1 | 3.57 |
| X. GERM-CELL TROPHOBLASTIC & OTH GONADAL NEOP. | 10 | 0.97 | 8 | 2.17 | 2 | 0.93 | 6 | 1.69 | 2 | 7.14 |
| (a) Intracranial & intraspinal gc tumours | 2 | 0.19 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (b) Other & unspecified non-gonadal gc tumours | 1 | 0.10 | 1 | 0.27 | 1 | 0.47 | 3 | 0.85 | 1 | 3.57 |
| (c) Gonadal gc tumours | 7 | 0.68 | 5 | 1.36 | 1 | 0.47 | 3 | 0.85 | 1 | 3.57 |
| (d) Gonadal carcinomas | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (e) Other & unsp.malignant gonadal tumours | 0 | 0.00 | 2 | 0.54 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| XI. CARCINOMA & OTH MALIGNANT EPITHELIAL NEOP. | 27 | 2.62 | 14 | 3.79 | 8 | 3.72 | 6 | 1.69 | 1 | 3.57 |
| (a) Adrenocortical carcinoma | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (b) Thyroid carcinoma | 7 | 0.68 | 2 | 0.54 | 1 | 0.47 | 0 | 0.00 | 0 | 0.00 |
| (c) Nasopharyngeal carcinoma | 7 | 0.68 | 2 | 0.54 | 3 | 1.40 | 3 | 0.85 | 0 | 0.00 |
| (d) Malignant melanoma | 0 | 0.00 | 1 | 0.27 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (e) Skin carcinoma | 1 | 0.10 | 0 | 0.00 | 1 | 0.47 | 0 | 0.00 | 0 | 0.00 |
| (f) Other & unspec.carcinomas | 12 | 1.17 | 9 | 2.44 | 3 | 1.40 | 3 | 0.85 | 1 | 3.57 |
| XII. OTHER & UNSP. MALIGNANT NEOPLASMS | 14 | 1.36 | 13 | 3.52 | 4 | 1.86 | 3 | 0.85 | 1 | 3.57 |
| (a) Other spec.malignant tumours | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (b) Other unspec.malignant tumours | 14 | 1.36 | 13 | 3.52 | 4 | 1.86 | 3 | 0.85 | 1 | 3.57 |
| XIII. OTHERS (Not Classified) | 3 | 0.29 | 3 | 0.81 | 1 | 0.47 | 1 | 0.28 | 0 | 0.00 |
| **All Types** | **1029** | **100.00** | **369** | **100.00** | **215** | **100.00** | **355** | **100.00** | **28** | **100.00** |

## Table 2.4(b): Number (#) & Relative Proportion (%) of Specific Types of Cancer in Childhood (0-14 years) - Females (1999-2000)

| Specific Types of Cancers in Childhood | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| I. LEUKAEMIAS | 186 | 39.41 | 91 | 35.83 | 51 | 39.23 | 109 | 36.95 | 0 | 0.00 |
| (a) Lymphoid leukaemia | 114 | 24.15 | 63 | 24.80 | 29 | 22.31 | 82 | 27.80 | 0 | 0.00 |
| (b) Acute non-lymphocytic leukaemia | 40 | 8.47 | 16 | 6.30 | 11 | 8.46 | 22 | 7.46 | 0 | 0.00 |
| (c) Chronic myeloid leukaemia | 10 | 2.12 | 2 | 0.79 | 5 | 3.85 | 1 | 0.34 | 0 | 0.00 |
| (d) Other specified leukaemias | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (e) Unspecified leukaemia | 22 | 4.66 | 10 | 3.94 | 6 | 4.62 | 4 | 1.36 | 0 | 0.00 |
| II. LYMPHOMAS & RETICULOENDOTHELIAL NPLMS | 40 | 8.47 | 27 | 10.63 | 10 | 7.69 | 10 | 3.39 | 0 | 0.00 |
| (a) Hodgkin's disease | 18 | 3.81 | 11 | 4.33 | 5 | 3.85 | 3 | 1.02 | 0 | 0.00 |
| (b) Non-Hodgkin lymphoma | 19 | 4.03 | 4 | 1.57 | 3 | 2.31 | 5 | 1.69 | 0 | 0.00 |
| (c) Burkitt's lymphoma | 1 | 0.21 | 4 | 1.57 | 0 | 0.00 | 1 | 0.34 | 0 | 0.00 |
| (d)Miscellaneous lymphoreticular nplms | 1 | 0.21 | 3 | 1.18 | 1 | 0.77 | 0 | 0.00 | 0 | 0.00 |
| (e) Unspecified lymphomas | 1 | 0.21 | 5 | 1.97 | 1 | 0.77 | 1 | 0.34 | 0 | 0.00 |
| III. C.N.S.& MISC.INTRACRANIAL & INTRASPINAL NEOP. | 61 | 12.92 | 35 | 13.78 | 4 | 3.08 | 38 | 12.88 | 1 | 16.67 |
| (a) Ependymoma | 3 | 0.64 | 1 | 0.39 | 0 | 0.00 | 1 | 0.34 | 0 | 0.00 |
| (b) Astrocytoma | 32 | 6.78 | 12 | 4.72 | 0 | 0.00 | 12 | 4.07 | 1 | 16.67 |
| (c) Primitive neuroectodermal tumours | 18 | 3.81 | 11 | 4.33 | 1 | 0.77 | 13 | 4.41 | 0 | 0.00 |
| (d) Other gliomas | 7 | 1.48 | 6 | 2.36 | 1 | 0.77 | 1 | 0.34 | 0 | 0.00 |
| (e) Other specified intracranial & intraspinal | 1 | 0.21 | 1 | 0.39 | 0 | 0.00 | 1 | 0.34 | 0 | 0.00 |
| (f) Unspecified intracranial & intraspinal | 0 | 0.00 | 4 | 1.57 | 2 | 1.54 | 10 | 3.39 | 0 | 0.00 |
| IV. SYMPATHETIC NERVOUS SYSTEM TUMOURS | 4 | 0.85 | 9 | 3.54 | 4 | 3.08 | 11 | 3.73 | 0 | 0.00 |
| (a) Neuroblastoma & ganglioneuroblastoma | 4 | 0.85 | 9 | 3.54 | 4 | 3.08 | 11 | 3.73 | 0 | 0.00 |
| (b) Other SNS tumours | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| V. RETINOBLASTOMA | 22 | 4.66 | 13 | 5.12 | 14 | 10.77 | 16 | 5.42 | 0 | 0.00 |
| VI. RENAL TUMOURS | 14 | 2.97 | 12 | 4.72 | 3 | 2.31 | 17 | 5.76 | 1 | 16.67 |
| (a) Wilms' tumour | 14 | 2.97 | 11 | 4.33 | 2 | 1.54 | 17 | 5.76 | 1 | 16.67 |
| (b) Renal carcinoma | 0 | 0.00 | 1 | 0.39 | 1 | 0.77 | 0 | 0.00 | 0 | 0.00 |
| (c) Unsp. malignant renal tumours | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| VII. HEPATIC TUMOURS | 2 | 0.42 | 0 | 0.00 | 3 | 2.31 | 3 | 1.02 | 0 | 0.00 |
| (a) Hepatoblastoma | 2 | 0.42 | 0 | 0.00 | 3 | 2.31 | 3 | 1.02 | 0 | 0.00 |
| (b) Hepatic carcinoma | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (c) Unsp. malignant hepatic tumours | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| VIII. MALIGNANT BONE TUMOURS | 40 | 8.47 | 17 | 6.69 | 19 | 14.62 | 25 | 8.47 | 1 | 16.67 |
| (a) Osteosarcoma | 23 | 4.87 | 8 | 3.15 | 7 | 5.38 | 16 | 5.42 | 0 | 0.00 |
| (b) Chondrosarcoma | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (c) Ewing's sarcoma | 13 | 2.75 | 6 | 2.36 | 7 | 5.38 | 9 | 3.05 | 1 | 16.67 |
| (d) Other specified malignant bone tumours | 1 | 0.21 | 0 | 0.00 | 1 | 0.77 | 0 | 0.00 | 0 | 0.00 |
| (e) Unspecified malignant bone tumours | 3 | 0.64 | 3 | 1.18 | 4 | 3.08 | 0 | 0.00 | 0 | 0.00 |
| IX. SOFT-TISSUE(S-T) SARCOMAS(S) | 46 | 9.75 | 14 | 5.51 | 9 | 6.92 | 17 | 5.76 | 0 | 0.00 |
| (a) Rhabdomyos. embryonals. | 18 | 3.81 | 8 | 3.15 | 4 | 3.08 | 12 | 4.07 | 0 | 0.00 |
| (b) Fibros.neurofibros.&oth.fibromatous neop. | 2 | 0.42 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (c) Kaposi's sarcoma | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (d) Other specified soft-tissue sarcoma | 12 | 2.54 | 4 | 1.57 | 1 | 0.77 | 4 | 1.36 | 0 | 0.00 |
| (e)_Unspecified soft-tissue sarcoma | 14 | 2.97 | 2 | 0.79 | 4 | 3.08 | 1 | 0.34 | 0 | 0.00 |
| X. GERM-CELL TROPHOBLASTIC & OTH GONADAL NEOP. | 31 | 6.57 | 12 | 4.72 | 6 | 4.62 | 19 | 6.44 | 0 | 0.00 |
| (a) Intracranial & intraspinal gc tumours | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (b) Other & unspecified non-gonadal gc tumours | 4 | 0.85 | 1 | 0.39 | 1 | 0.77 | 5 | 1.69 | 0 | 0.00 |
| (c) Gonadal gc tumours | 25 | 5.30 | 8 | 3.15 | 4 | 3.08 | 13 | 4.41 | 0 | 0.00 |
| (d) Gonadal carcinomas | 1 | 0.21 | 1 | 0.39 | 1 | 0.77 | 1 | 0.34 | 0 | 0.00 |
| (e) Other & unsp.malignant gonadal tumours | 1 | 0.21 | 2 | 0.79 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| XI. CARCINOMA & OTH MALIGNANT EPITHELIAL NEOP. | 17 | 3.60 | 11 | 4.33 | 4 | 3.08 | 28 | 9.49 | 1 | 16.67 |
| (a) Adrenocortical carcinoma | 1 | 0.21 | 0 | 0.00 | 1 | 0.77 | 0 | 0.00 | 0 | 0.00 |
| (b) Thyroid carcinoma | 7 | 1.48 | 6 | 2.36 | 1 | 0.77 | 19 | 6.44 | 0 | 0.00 |
| (c) Nasopharyngeal carcinoma | 1 | 0.21 | 0 | 0.00 | 0 | 0.00 | 4 | 1.36 | 0 | 0.00 |
| (d) Malignant melanoma | 1 | 0.21 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (e) Skin carcinoma | 1 | 0.21 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (f) Other & unspec.carcinomas | 6 | 1.27 | 5 | 1.97 | 2 | 1.54 | 5 | 1.69 | 1 | 16.67 |
| XII. OTHER & UNSP. MALIGNANT NEOPLASMS | 9 | 1.91 | 13 | 5.12 | 2 | 1.54 | 1 | 0.34 | 0 | 0.00 |
| (a) Other spec.malignant tumours | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| (b) Other unspec.malignant tumours | 9 | 1.91 | 13 | 5.12 | 2 | 1.54 | 1 | 0.34 | 0 | 0.00 |
| XIII. OTHERS (Not Classified) | 0 | 0.00 | 0 | 0.00 | 1 | 0.77 | 1 | 0.34 | 2 | 33.33 |
| **All Types** | **472** | **100.00** | **254** | **100** | **130** | **100.00** | **295** | **100.00** | **6** | **100.00** |

# Chapter 3

# TOBACCO RELATED CANCERS

A list of sites of cancer (alongwith corresponding ICD-10 codes) considered to be associated with the use of tobacco [Tobacco Related Cancers (TRC)] is provided in the table below. This consideration is based on IARC monographs on overall evaluations of carcinogenicity (IARC, 1987).

Recently, International Agency for Research on Cancer Monograph (IARC 2004) states, that, there is now sufficient evidence to establish a causal association between cigarette smoking and cancers of the

**Table 3.1: Sites of cancer included in TRCs alongwith corresponding ICD codes (1999-2000)**

| Site | ICD-10 Code |
|---|---|
| Lip | C00 |
| Tongue | C01-C02 |
| Mouth | C03-C06 |
| Pharynx | C09-C10 and C12-C14 |
| Oesophagus | C15 |
| Larynx | C32 |
| Lung | C33-34 |
| Urinary Bladder | C67 |

**Table 3.2 : Number(#) & Proportion(%) of cancers associated with use of tobacco relative to all sites of cancer (1999-2000)**

| Registry | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | All sites | # | % | All sites | # | % |
| **Mumbai** | 17637 | 8476 | 48.1 | 13679 | 2262 | 16.5 |
| **Bangalore** | 6106 | 2886 | 47.3 | 7543 | 1731 | 22.9 |
| **Chennai** | 6195 | 2815 | 45.4 | 7139 | 1159 | 16.2 |
| **Thi'puram** | 7859 | 3701 | 47.1 | 7247 | 983 | 13.6 |
| **Dibrugarh** | 997 | 683 | 68.5 | 536 | 187 | 34.9 |
| **All Registries** | **38794** | **18561** | **47.8** | **36144** | **6322** | **17.5** |

nasal cavities and nasal sinuses, oesophagus (Adenocarcinoma), stomach, liver, kidney(Renal Cell Carcinoma), uterine cervix and myeloid leukaemia apart from the sites in the earlier monograph (IARC,1987).

Table 3.2 and Figure 3.1 give the number and proportion of sites of cancer associated with use of tobacco as a whole relative to all sites of cancer, in different registries. The highest percentage of TRC was observed in Dibrugarh; both in males (69%) and in females (35%). In the other registries, it varied from 45 to 48% of all cancers in males and from 14 to 23% in females.

Table 3.3 and Figure 3.2 give the number and relative precentage according to the specific sites of TRC in different registries.

**Males** *(Relative proportion (%) of TRC given given in parentheses)*

*Mumbai*: Mouth(23%), tongue(15%), and lung(15%) were the main sites that contributed to overall TRCs.

*Bangalore*: Oesophagus(20%) was the leading site in TRCs followed by hypopharynx(19%) and lung(15%).

*Chennai*: Mouth(19%) was the leading contributor to TRCs followed by oesophagus(17%) and tongue(16%).

*Thiruvananthapuram*: Cancer of lung accounted for 28% of TRCs followed by mouth(20%) and tongue(13%).

*Dibrugarh*: Cancer of the hypopharynx constituted 24% of TRCs followed by oesophagus(22%) and mouth(13%).

**Females**

*Mumbai*: Mouth(29%), oesophagus(22%) and tongue(16%) were the leading sites among TRCs.

*Bangalore*: Mouth(48%) contributed almost half of the TRCs. Another important site was oesophagus(27%).

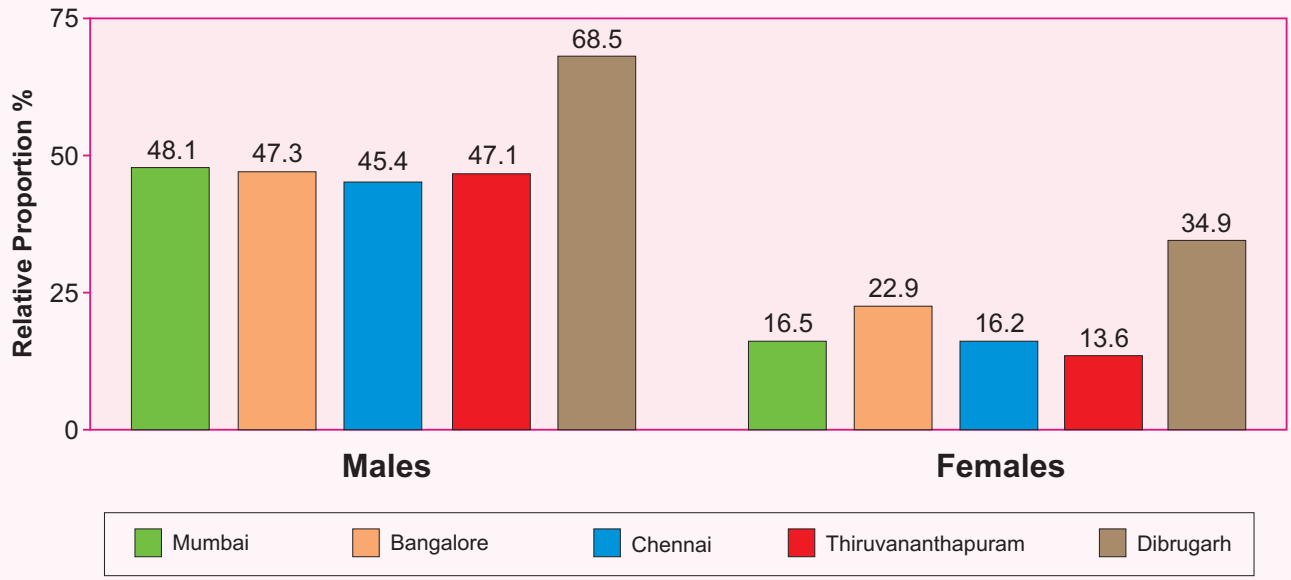
*Chennai*: Mouth(38%) accounted for most of TRCs followed by oesophagus(22%) and hypopharynx(13%).

*Thiruvananthapuram*: Like in Chennai, in Thiruvananthapuram also mouth(39%) accounted for most of TRCs followed by tongue(24%) and lung(14%).

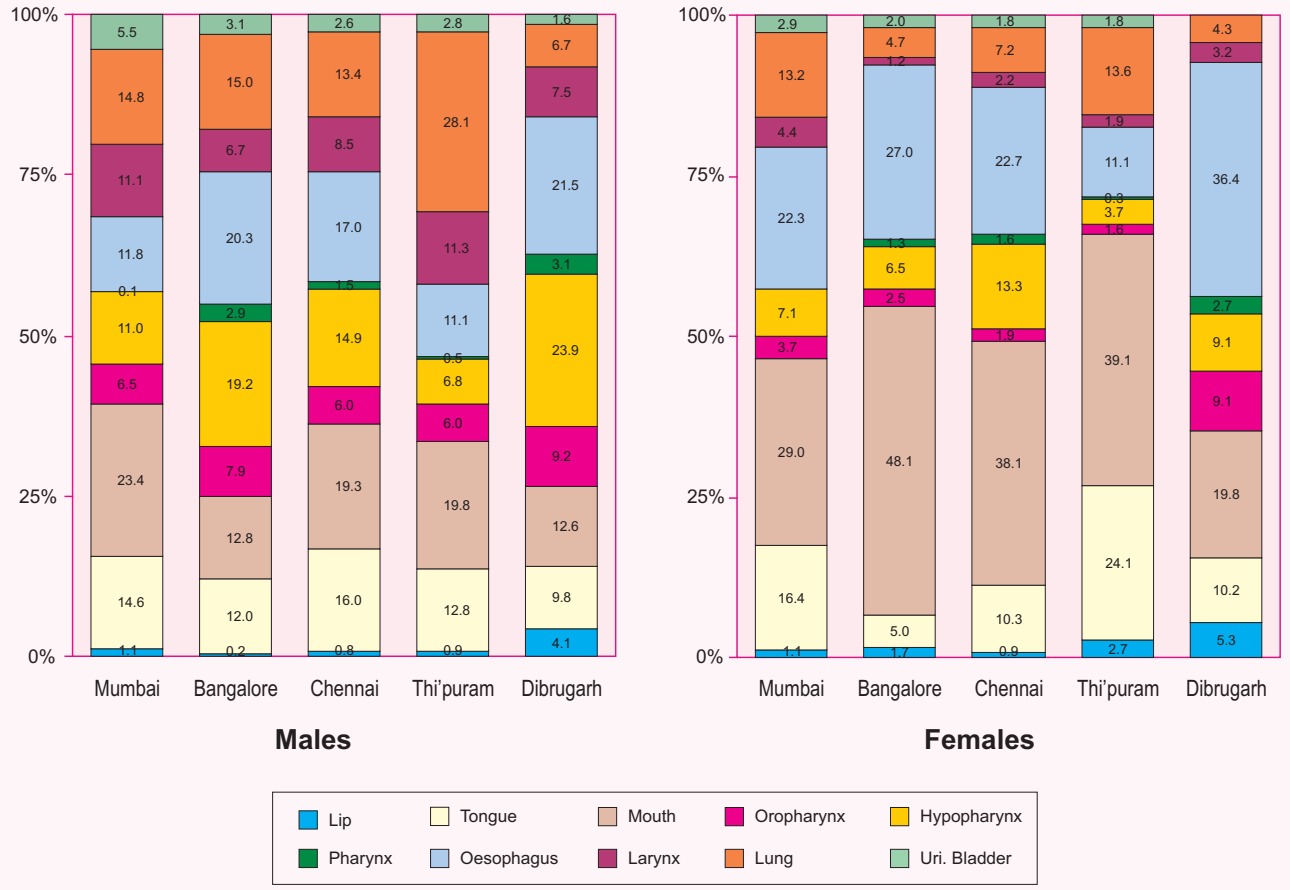
*Dibrugarh*: Oesophagus(36%) was the leading site in TRCs followed by mouth(20%) and tongue(10%).

Table 3.4 shows the age distribution of all TRCs taken together. Among males, the mean($\pm$SD) age of TRCs varied between 55.1 $\pm$ 12.17 in Mumbai to 59.3 $\pm$ 11.11 in Thiruvananthapuram. Similarly in females, mean age varied between 51.0 $\pm$ 12.18 in Dibrugarh to 58.7 $\pm$ 12.68 in Thiruvananthapuram.

## Fig. 3.1: Proportion(%) of Tobacco Related Cancers Relative to All Sites (1999-2000)




## Fig. 3.2: Stack(100%) diagram showing Proportion of Specific Tobacco Related Sites Relative to All Tobacco Related Cancers (1999-2000)



## Table 3.3 : Number(#) & Relative Proportion(%) of specific sites of cancer among Tobacco Related Cancers (TRC) (1999-2000)

### Males

| Sites of Cancer | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Lip | 96 | 1.1 | 7 | 0.2 | 22 | 0.8 | 32 | 0.9 | 28 | 4.1 |
| Tongue | 1236 | 14.6 | 346 | 12.0 | 450 | 16.0 | 473 | 12.8 | 67 | 9.8 |
| Mouth | 1986 | 23.4 | 368 | 12.8 | 544 | 19.3 | 734 | 19.8 | 86 | 12.6 |
| Oropharynx | 554 | 6.5 | 227 | 7.9 | 170 | 6.0 | 222 | 6.0 | 63 | 9.2 |
| Hypopharynx | 935 | 11.0 | 554 | 19.2 | 420 | 14.9 | 250 | 6.8 | 163 | 23.9 |
| Pharynx | 12 | 0.1 | 84 | 2.9 | 41 | 1.5 | 17 | 0.5 | 21 | 3.1 |
| Oesophagus | 998 | 11.8 | 587 | 20.3 | 478 | 17.0 | 412 | 11.1 | 147 | 21.5 |
| Larynx | 937 | 11.1 | 192 | 6.7 | 238 | 8.5 | 417 | 11.3 | 51 | 7.5 |
| Lung | 1253 | 14.8 | 432 | 15.0 | 378 | 13.4 | 1041 | 28.1 | 46 | 6.7 |
| Uri. Bladder | 469 | 5.5 | 89 | 3.1 | 74 | 2.6 | 103 | 2.8 | 11 | 1.6 |
| **TRC** | **8476** | **100.0** | **2886** | **100.0** | **2815** | **100.0** | **3701** | **100.0** | **683** | **100.0** |

### Females

| Sites of Cancer | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Lip | 25 | 1.1 | 30 | 1.7 | 11 | 0.9 | 27 | 2.7 | 10 | 5.3 |
| Tongue | 370 | 16.4 | 86 | 5.0 | 119 | 10.3 | 237 | 24.1 | 19 | 10.2 |
| Mouth | 656 | 29.0 | 833 | 48.1 | 441 | 38.1 | 384 | 39.1 | 37 | 19.8 |
| Oropharynx | 83 | 3.7 | 44 | 2.5 | 22 | 1.9 | 16 | 1.6 | 17 | 9.1 |
| Hypopharynx | 161 | 7.1 | 112 | 6.5 | 154 | 13.3 | 36 | 3.7 | 17 | 9.1 |
| Pharynx | 0 | 0.0 | 23 | 1.3 | 18 | 1.6 | 3 | 0.3 | 5 | 2.7 |
| Oesophagus | 505 | 22.3 | 467 | 27.0 | 263 | 22.7 | 109 | 11.1 | 68 | 36.4 |
| Larynx | 99 | 4.4 | 20 | 1.2 | 26 | 2.2 | 19 | 1.9 | 6 | 3.2 |
| Lung | 298 | 13.2 | 82 | 4.7 | 84 | 7.2 | 134 | 13.6 | 8 | 4.3 |
| Uri. Bladder | 65 | 2.9 | 34 | 2.0 | 21 | 1.8 | 18 | 1.8 | 0 | 0.0 |
| TRC | 2262 | 100.0 | 1731 | 100.0 | 1159 | 100.0 | 983 | 100.0 | 187 | 100.0 |

## Table 3.4: Number(#) and Relative Proportion(%) of Tobacco Related Cancers by five-year age groups with Standard Deviation (SD) (1999-2000)

### Males

| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 00-14 | 6 | 0.1 | 2 | 0.1 | 1 | 0.0 | 2 | 0.1 | 6 | 0.9 |
| 15-19 | 9 | 0.1 | 3 | 0.1 | 3 | 0.1 | 2 | 0.1 | 2 | 0.3 |
| 20-24 | 34 | 0.4 | 6 | 0.2 | 15 | 0.5 | 3 | 0.1 | 6 | 0.9 |
| 25-29 | 91 | 1.1 | 26 | 0.9 | 28 | 1.0 | 8 | 0.2 | 5 | 0.7 |
| 30-34 | 224 | 2.6 | 39 | 1.4 | 50 | 1.8 | 26 | 0.7 | 18 | 2.6 |
| 35-39 | 467 | 5.5 | 93 | 3.2 | 102 | 3.6 | 92 | 2.5 | 30 | 4.4 |
| 40-44 | 758 | 8.9 | 137 | 4.7 | 174 | 6.2 | 175 | 4.7 | 43 | 6.3 |
| 45-49 | 987 | 11.6 | 311 | 10.8 | 318 | 11.3 | 393 | 10.6 | 81 | 11.9 |
| 50-54 | 1268 | 15.0 | 403 | 14.0 | 437 | 15.5 | 481 | 13.0 | 91 | 13.3 |
| 55-59 | 1262 | 14.9 | 450 | 15.6 | 486 | 17.3 | 596 | 16.1 | 94 | 13.8 |
| 60-64 | 1165 | 13.7 | 526 | 18.2 | 433 | 15.4 | 609 | 16.5 | 140 | 20.5 |
| 65-69 | 1116 | 13.2 | 405 | 14.0 | 371 | 13.2 | 622 | 16.8 | 73 | 10.7 |
| 70-74 | 635 | 7.5 | 267 | 9.3 | 221 | 7.9 | 367 | 9.9 | 52 | 7.6 |
| 75+ | 454 | 5.4 | 218 | 7.6 | 176 | 6.3 | 325 | 8.8 | 42 | 6.1 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Ages** | **8476** | **100.0** | **2886** | **100.0** | **2815** | **100.0** | **3701** | **100.0** | **683** | **100.0** |
| **Mean** | 55.1 | | 57.3 | | 56.4 | | 59.3 | | 55.5 | |
| **SD** | 12.17 | | 11.55 | | 11.71 | | 11.11 | | 12.14 | |

### Females

| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 00-14 | 1 | 0.0 | 2 | 0.1 | 1 | 0.1 | 3 | 0.3 | 0 | 0.0 |
| 15-19 | 6 | 0.3 | 3 | 0.2 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| 20-24 | 16 | 0.7 | 7 | 0.4 | 6 | 0.5 | 3 | 0.3 | 2 | 1.1 |
| 25-29 | 23 | 1.0 | 19 | 1.1 | 25 | 2.2 | 7 | 0.7 | 4 | 2.1 |
| 30-34 | 66 | 2.9 | 26 | 1.5 | 38 | 3.3 | 22 | 2.2 | 8 | 4.3 |
| 35-39 | 151 | 6.7 | 100 | 5.8 | 62 | 5.3 | 27 | 2.7 | 18 | 9.6 |
| 40-44 | 211 | 9.3 | 139 | 8.0 | 82 | 7.1 | 52 | 5.3 | 17 | 9.1 |
| 45-49 | 304 | 13.4 | 207 | 12.0 | 175 | 15.1 | 95 | 9.7 | 26 | 13.9 |
| 50-54 | 345 | 15.3 | 283 | 16.3 | 190 | 16.4 | 105 | 10.7 | 29 | 15.5 |
| 55-59 | 306 | 13.5 | 212 | 12.2 | 150 | 12.9 | 160 | 16.3 | 33 | 17.6 |
| 60-64 | 330 | 14.6 | 285 | 16.5 | 179 | 15.4 | 152 | 15.5 | 23 | 12.3 |
| 65-69 | 259 | 11.5 | 204 | 11.8 | 130 | 11.2 | 146 | 14.9 | 12 | 6.4 |
| 70-74 | 143 | 6.3 | 145 | 8.4 | 62 | 5.3 | 101 | 10.3 | 9 | 4.8 |
| 75+ | 101 | 4.5 | 99 | 5.7 | 59 | 5.1 | 109 | 11.1 | 6 | 3.2 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Ages** | **2262** | **100.0** | **1731** | **100.0** | **1159** | **100.0** | **983** | **100.0** | **187** | **100.0** |
| **Mean** | 53.6 | | 54.7 | | 53.6 | | 58.7 | | 51.0 | |
| **SD** | 12.26 | | 12.24 | | 12.27 | | 12.68 | | 12.18 | |

# Chapter 4

## BASIS OF DIAGNOSIS

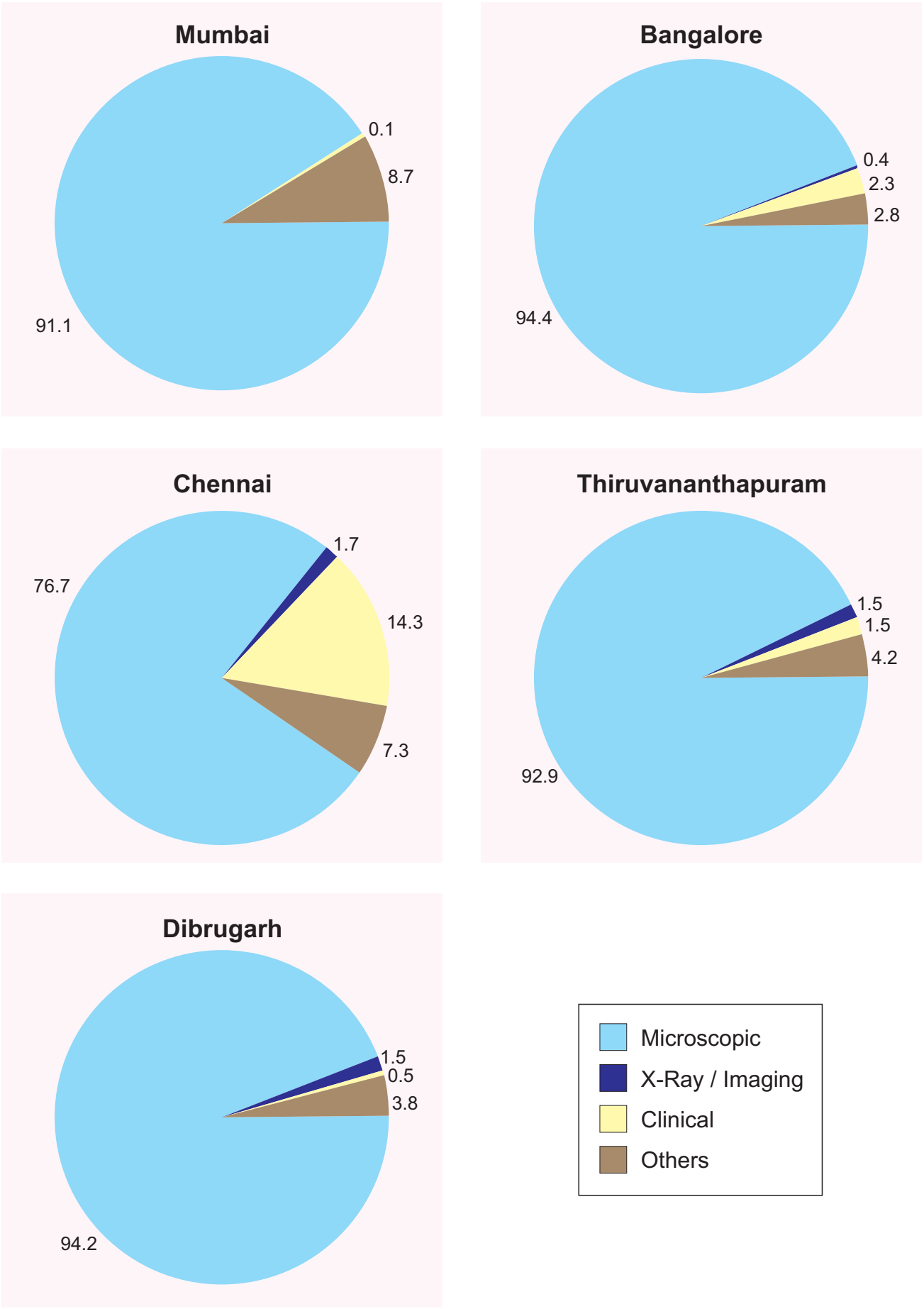
The basis of diagnosis of cancers registered at the various centres is shown in Table 4.1 and depicted as Pie(Π) diagrams in Figure 4.1. The proportion of microscopic confirmation was about 90% and above in both sexes except in Chennai where it was 77% in males and 85% in females. Correspondingly, the proportion of diagnosis based on X-ray was higher in Chennai.

Table 4.2 and Figure 4.2 give further details of microscopically verified cancers by various types of microscopic diagnosis. Primary Histology was the predominant form of microscopic diagnosis in all registries in both sexes. In Bangalore(23% in males and 13% in females) and Thiruvananthapuram (17% in males and 9% in females), the percentage of diagnoses based on cytology was relatively higher compared to

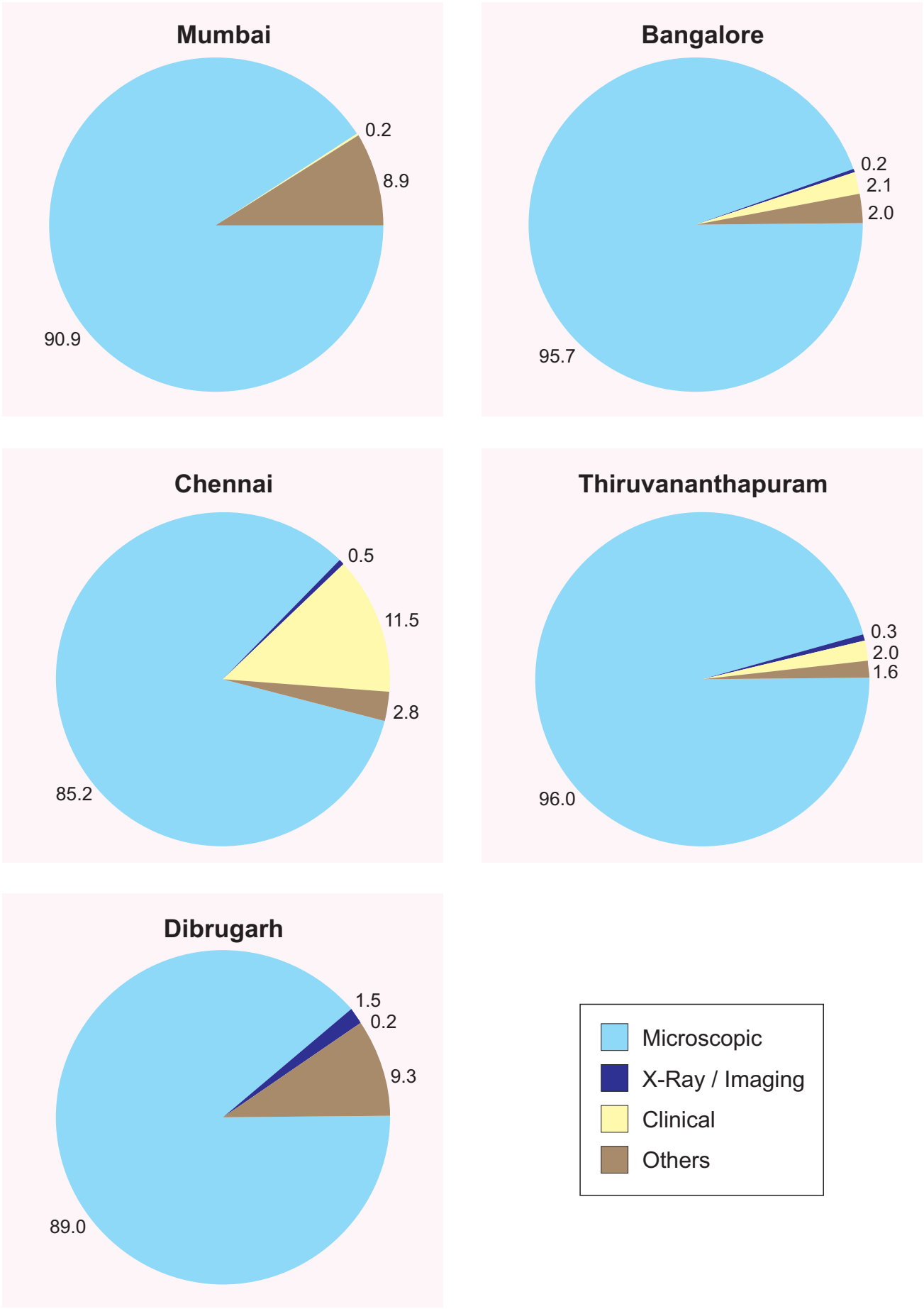
**Table 4.1 : Number(#) & Relative Proportion(%) of cancers based on different methods of diagnosis (1999-2000)**

| Registry | Microscopic | | X-ray | | Clinical | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | |
| **Mumbai** | 16064 | 91.1 | 23 | 0.1 | 7 | 0.0 | 1543 | 8.7 | 17637 | 100.0 |
| **Bangalore** | 5767 | 94.4 | 140 | 2.3 | 25 | 2.3 | 174 | 2.8 | 6106 | 100.0 |
| **Chennai** | 4751 | 76.7 | 888 | 14.3 | 104 | 14.3 | 452 | 7.3 | 6195 | 100.0 |
| **Thi'puram** | 7301 | 92.9 | 117 | 1.5 | 114 | 1.5 | 327 | 4.2 | 7859 | 100.0 |
| **Dibrugarh** | 939 | 94.2 | 5 | 0.5 | 15 | 0.5 | 38 | 3.8 | 997 | 100.0 |
| **Females** | | | | | | | | | | |
| **Mumbai** | 12433 | 90.9 | 21 | 0.2 | 2 | 0.0 | 1223 | 8.9 | 13679 | 100.0 |
| **Bangalore** | 7217 | 95.7 | 157 | 2.1 | 16 | 0.2 | 153 | 2.0 | 7543 | 100.0 |
| **Chennai** | 6083 | 85.2 | 821 | 11.5 | 38 | 0.5 | 197 | 2.8 | 7139 | 100.0 |
| **Thi'puram** | 6960 | 96.0 | 146 | 2.0 | 23 | 0.3 | 118 | 1.6 | 7247 | 100.0 |
| **Dibrugarh** | 477 | 89.0 | 1 | 0.2 | 8 | 1.5 | 50 | 9.3 | 536 | 100.0 |

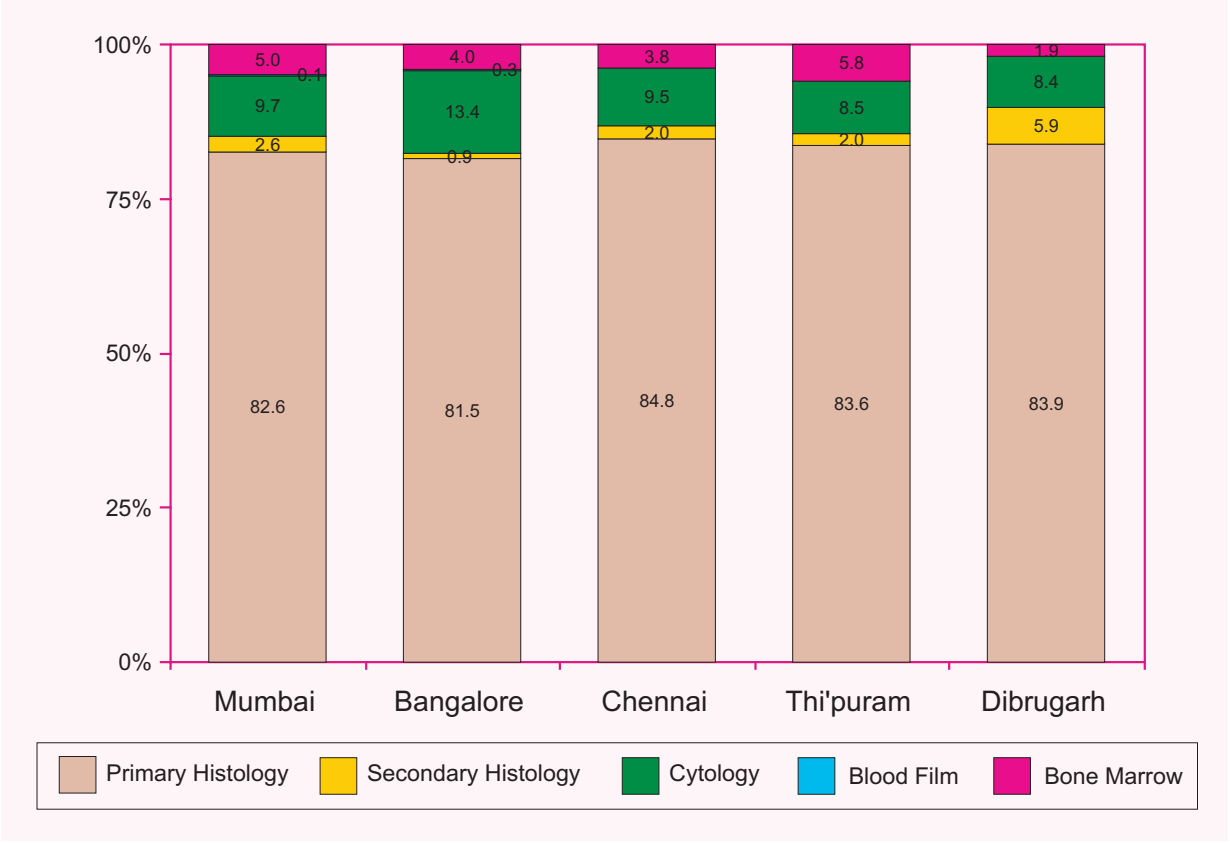
## Fig. 4.1(a): Pie(Π) diagram showing Proportion (%) of Patients according to Method of Diagnosis - Males (1999-2000)



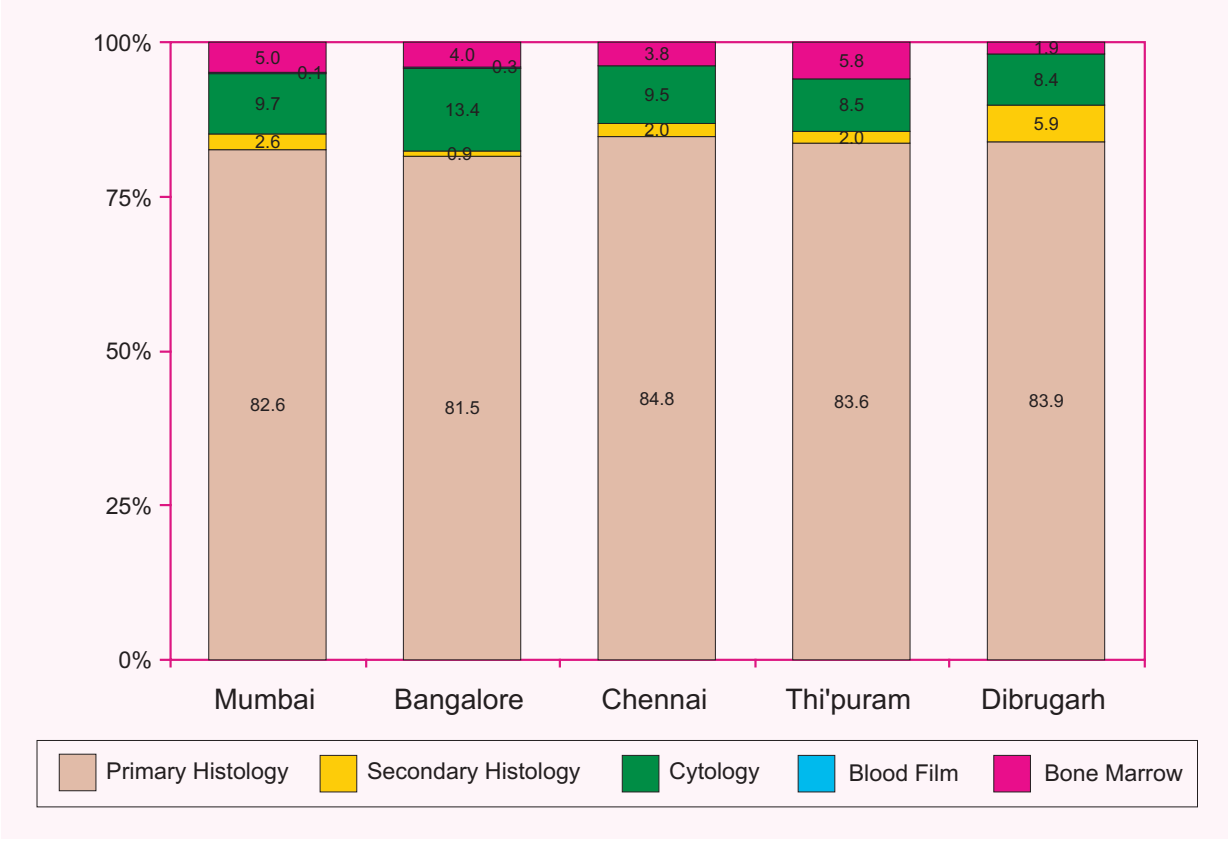
## Fig. 4.1(b): Pie(Π) diagram showing Proportion (%) of Patients according to Method of Diagnosis - Females (1999-2000)



## Fig. 4.2(a): Stack(100%) diagram showing Proportion(%) of Microscopically Diagnosed patients according to specific Microscopic Diagnosis - Males (1999-2000)




## Fig. 4.2(b): Stack(100%) diagram showing Proportion(%) of Microscopically Diagnosed patients according to specific Microscopic Diagnosis - Females (1999-2000)



## Table 4.2: Number (#) & Relative Proportion (%) of cancers based on different types of Microscopic Diagnosis (1999-2000)

### Males

| Registry | Primary Histology | | Secondary Histology | | Cytology | | Peripheral Blood | | Bone Marrow | | All Microscopic* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 11676 | 72.7 | 6.5 | 3.8 | 2181 | 13.6 | 20 | 0.1 | 1582 | 9.8 | 16064 | 100.0 |
| Bangalore | 3871 | 67.1 | 110 | 1.9 | 1350 | 23.4 | 19 | 0.3 | 417 | 7.2 | 5767 | 100.0 |
| Chennai | 3753 | 79.0 | 247 | 5.2 | 343 | 7.2 | 6 | 0.1 | 402 | 8.5 | 4751 | 100.0 |
| Thi'puram | 5091 | 69.7 | 352 | 4.8 | 1202 | 16.5 | 7 | 0.1 | 649 | 8.9 | 7301 | 100.0 |
| Dibrugarh | 708 | 75.4 | 118 | 12.6 | 91 | 9.7 | 0 | 0.0 | 22 | 2.3 | 939 | 100.0 |

### Females

| Registry | Primary Histology | | Secondary Histology | | Cytology | | Peripheral Blood | | Bone Marrow | | All Microscopic* | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 10269 | 82.6 | 321 | 2.6 | 1212 | 9.7 | 13 | 0.1 | 618 | 5.0 | 12433 | 100.0 |
| Bangalore | 5880 | 81.5 | 63 | 0.9 | 964 | 13.4 | 21 | 0.3 | 289 | 4.0 | 7217 | 100.0 |
| Chennai | 5159 | 84.8 | 119 | 2.0 | 575 | 9.5 | 1 | 0.0 | 229 | 3.8 | 6083 | 100.0 |
| Thi'puram | 5819 | 83.6 | 142 | 2.0 | 590 | 8.5 | 2 | 0.0 | 407 | 5.8 | 6960 | 100.0 |
| Dibrugarh | 400 | 83.9 | 28 | 5.9 | 40 | 8.4 | 0 | 0.0 | 9 | 1.9 | 477 | 100.0 |

** Excludes few cases diagnosed by autopsy.*

other registries especially in males. Dibrugarh (13%) had a high proportion of cases based on secondary histology in males.

Table 4.3 presents the proportion of microscopic diagnosis from 1994-2000. The proportion has been stable in both sexes in all the registries except for a slight increase in males in Thiruvananthapuram. Table 4.4 further gives the proportion of microscopic diagnosis for the three time periods of publication of HBCR reports. The proportion seems to be stable in the three time periods except slight increase in Chennai and Thiruvananthapuram.

The relative proportion of cytological diagnosis during the three periods has been presented in Table 4.5. The proportion is stable in both sexes in Mumbai and in males in Bangalore. In other registry hospitals,

## Table 4.3 : Number(#) & Relative Proportion(%) of Microscopic Diagnosis across different years of diagnosis

| Year of Diagnosis | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| 1994 | 7914 | 90.0 | 2913 | 92.9 | 1970 | 72.3 | 3092 | 88.2 | 710 | 92.8 |
| 1995 | 7758 | 88.4 | 3163 | 94.2 | 2041 | 75.8 | 3318 | 87.3 | 579 | 93.4 |
| 1996 | 7269 | 90.2 | 3018 | 94.2 | 2052 | 78.1 | 3563 | 89.7 | 286 | 92.9 |
| 1997 | 7945 | 90.9 | 3076 | 94.8 | 2180 | 78.3 | 3460 | 90.2 | 396 | 94.5 |
| 1998 | 7870 | 91.0 | 2838 | 95.1 | 2027 | 78.4 | 3540 | 91.6 | 513 | 96.2 |
| 1999 | 7991 | 90.7 | 2812 | 94.8 | 2270 | 76.4 | 3676 | 92.2 | 421 | 93.8 |
| 2000 | 8073 | 90.9 | 2955 | 93.6 | 2481 | 75 | 3625 | 93.4 | 518 | 93.4 |
| **1994-2000** | **54820** | **90.2** | **20775** | **94.3** | **15021** | **76.55** | **24274** | **89.9** | **3423** | **93.9** |
| **FEMALES** | | | | | | | | | | |
| 1994 | 6098 | 89.2 | 3485 | 94.8 | 2521 | 81.4 | 2921 | 93.0 | 397 | 90.2 |
| 1995 | 6113 | 88.8 | 3780 | 96.0 | 2592 | 83.0 | 3069 | 92.8 | 290 | 90.9 |
| 1996 | 5673 | 89.4 | 3614 | 95.8 | 2603 | 84.6 | 3173 | 94.3 | 178 | 90.8 |
| 1997 | 6283 | 90.4 | 3558 | 96.1 | 2670 | 84.5 | 3200 | 94.8 | 240 | 92.3 |
| 1998 | 6041 | 90.2 | 3320 | 95.9 | 2609 | 83.5 | 3312 | 95.8 | 264 | 93.3 |
| 1999 | 6253 | 90.5 | 3636 | 96.1 | 2986 | 85.5 | 2472 | 96.2 | 185 | 86.0 |
| 2000 | 6180 | 90.7 | 3581 | 93.5 | 3097 | 80.7 | 4488 | 95.6 | 292 | 92.0 |
| **1994-2000** | **42641** | **89.8** | **24974** | **95.8** | **19078** | **83.75** | **22635** | **94.5** | **1846** | **90.6** |

## Table 4.4: Proportion(%) of Microscopic Diagnosis during the three periods 1984-93, 1994-98 and 1999-2000

| Registry | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | 1984-93 | 1994-98 | 1999-00 | 1984-93 | 1994-98 | 1999-00 |
| **Mumbai** | 91.3 | 90.1 | 91.1 | 91.5 | 89.6 | 90.9 |
| **Bangalore** | 91.1 | 94.2 | 94.2 | 94.8 | 95.7 | 94.8 |
| **Chennai** | 69.5 | 76.6 | 75.7 | 71.5 | 83.4 | 83.1 |
| **Thi'puram** | 86.0 | 89.4 | 92.8 | 90.3 | 94.2 | 95.9 |
| **Dibrugarh** | 88.3 | 93.9 | 94.2 | 88.3 | 91.4 | 89.0 |

## Table 4.5: Proportion(%) of Cytological Diagnosis during the three periods 1984-93, 1994-98 and 1999-2000

| Registry | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | 1984-93 | 1994-98 | 1999-00 | 1984-93 | 1994-98 | 1999-00 |
| **Mumbai** | 13.3 | 13.2 | 13.6 | 8.2 | 9.9 | 9.7 |
| **Bangalore** | 23.2 | 23.6 | 23.2 | 8.5 | 10.7 | 13.5 |
| **Chennai** | 4.0 | 4.7 | 7.0 | 4.2 | 4.7 | 9.1 |
| **Thi'puram** | 9.6 | 12.8 | 16.0 | 5.6 | 7.3 | 8.4 |
| **Dibrugarh** | 2.6 | 8.1 | 9.7 | 3.6 | 7.6 | 8.4 |

# Chapter 5

## BROAD TREATMENT GROUPS

In order to study different aspects in the management of cancer patients the data from the HBCRs are categorized into the following four groups:

***Prior Treatment Only (Prior Tmt. Only):***

Those patients who have received some or complete cancer directed treatment before registration and have not received any further treatment at the reporting institution(RI).

***Prior Treatment & Treatment at Reporting Institution (Prior & Tmt. at RI):***

These are patients who have received cancer directed treatment prior to registration and have received further treatment at the reporting institution.

***Treatment Only at Reporting Institution (Tmt. only at RI):***

Patients who have come for the first time to the reporting institution with or without a confirmed diagnosis of malignancy and have not received any cancer directed treatment earlier and received complete cancer directed treatment at the reporting institution.

***No Cancer Directed Treatment (No CDT):***

This group includes patients who have neither received nor accepted any treatment. It also includes the patients who have not completed any form of treatment and where the treatment status is unknown.

Table 5.1 and stack diagram (Fig. 5.1) shows the number and relative proportion of the patients by the above four broad treatment groups in different registries for the year 1999-2000. The proportion of patients belonging to Prior Tmt. Only varied from less than one percent in either sex in Dibrugarh to 14 -15% in both sexes at Mumbai. Similarly, the relative proportion in the second group, viz., Prior and Tmt. at RI also showed variation among the registries - from 3% in Dibrugarh to 13% in Thiruvananthapuram in males and 3% in Dibrugarh to 31% in Thiruvananthapuram in females. The relative proportion of the patients treated only at the reporting institution (Tmt. only at RI) was comparatively higher in the centres at Thiruvananthapuram and Dibrugarh with a correspondingly lower relative proportion in the 'No CDT' category as compared with the centres at Mumbai, Bangalore and Chennai.

## Table 5.1 : Number(#) & Relative Proportion(%) of cancer patients according to Broad Groups of Treatment (Tmt) at Reporting Institution (RI) and/or elsewhere (1999-2000)

### Males

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Prior Tmt. Only | 2452 | 13.9 | 391 | 6.4 | 884 | 14.3 | 541 | 6.9 | 1 | 0.1 |
| Prior & Tmt. at RI | 1490 | 8.4 | 340 | 5.6 | 255 | 4.1 | 1052 | 13.4 | 30 | 3.0 |
| Tmt. Only at RI | 5667 | 32.1 | 2227 | 36.5 | 1828 | 29.5 | 4766 | 60.6 | 832 | 83.5 |
| No CDT* | 8028 | 45.5 | 3148 | 51.6 | 3228 | 52.1 | 1500 | 19.1 | 134 | 13.4 |
| **Total Patients** | **17637** | **100.0** | **6106** | **100.0** | **6195** | **100.0** | **7859** | **100.0** | **997** | **100.0** |

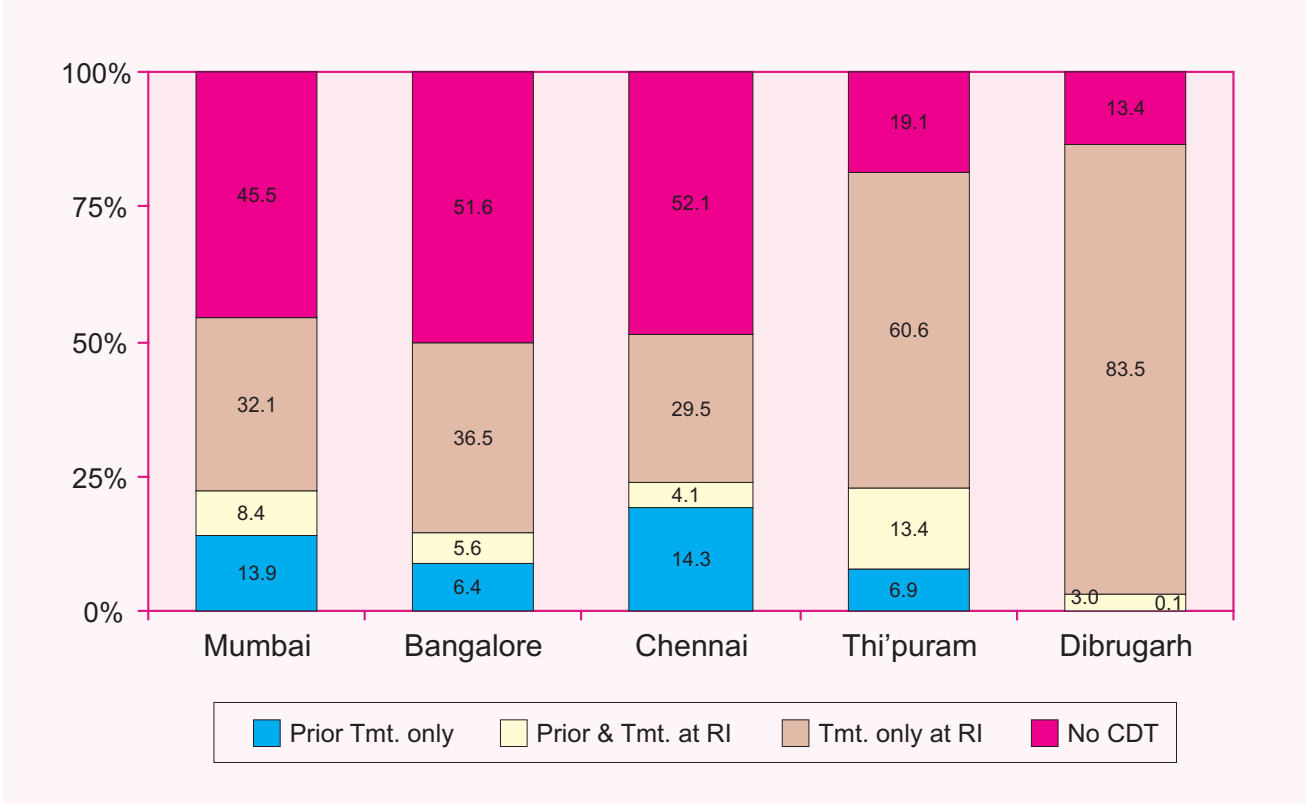
### Females

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Prior Tmt. Only | 2112 | 15.4 | 546 | 7.2 | 919 | 12.9 | 892 | 12.3 | 4 | 0.7 |
| Prior & Tmt. at RI | 2119 | 15.5 | 583 | 7.7 | 520 | 7.3 | 2212 | 30.5 | 15 | 2.8 |
| Tmt. Only at RI | 4470 | 32.7 | 3334 | 44.2 | 2616 | 36.6 | 3325 | 45.9 | 430 | 80.2 |
| No CDT* | 4978 | 36.4 | 3080 | 40.8 | 3084 | 43.2 | 818 | 11.3 | 87 | 16.2 |
| **Total Patients** | **13679** | **100.0** | **7543** | **100.0** | **7139** | **100.0** | **7247** | **100.0** | **536** | **100.** |

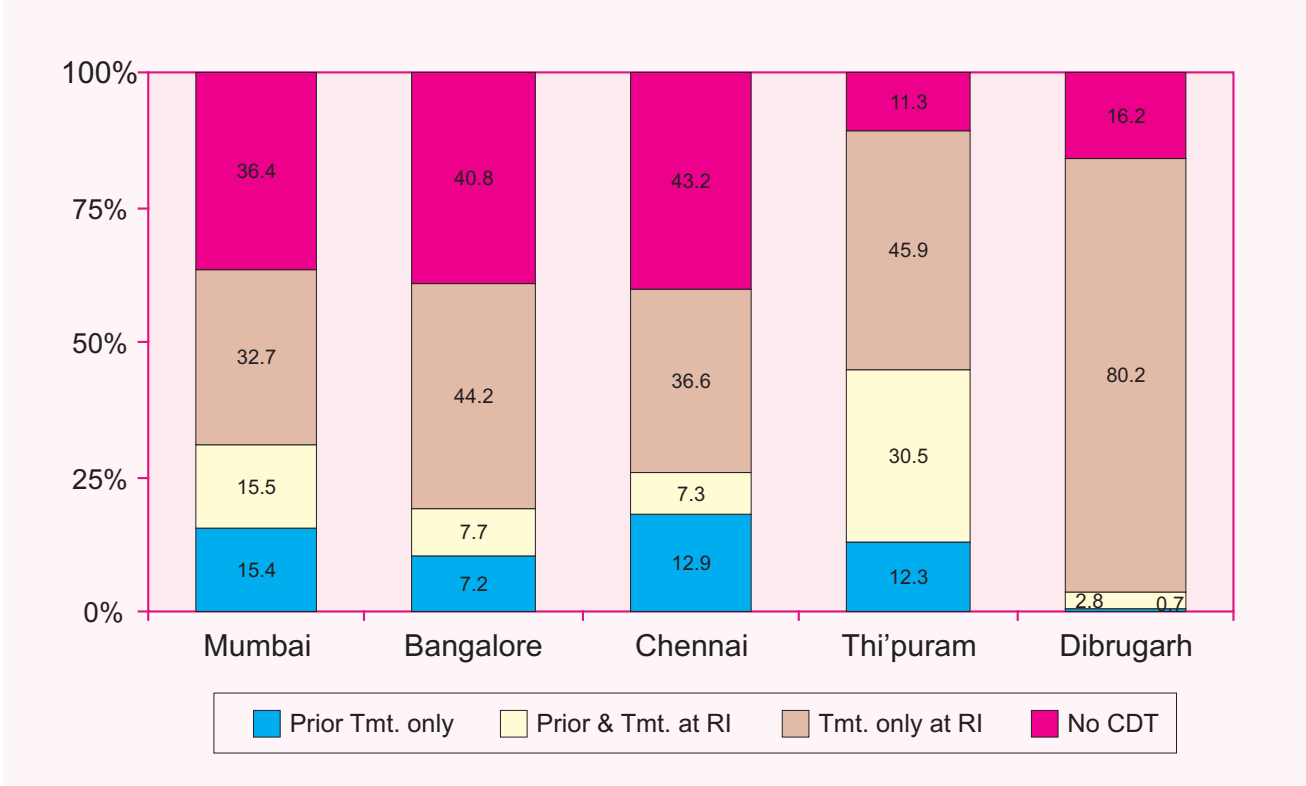
** CDT - Cancer Directed Treatment*

## Fig. 5.1 : Stack(100%) diagram showing HBCRs, Proportion(%) According To Broad Groups of Treatment(Tmt) (1999-2000)

### Males




### Females



# Chapter 6

## CLINICAL EXTENT OF DISEASE AT PRESENTATION

Table 6.1 presents number and relative proportion of cancer patients in various clinical extent of disease of presentation at the time of registering at the reporting institution for the year 1999-2000. The proportion of the patients with localised disease varied from 4.6% in males at Chennai to 34% in both sexes at Mumbai. The proportion of the patients with distant or advanced cancer was 12% in Chennai, 14% in Bangalore and 16-18% in other three registries in males. In females, the proportion was lower, 5% in Chennai to 14% in Thiruvananthapuram. The proportion under the category `Others' mainly refers to Lymphomas and Leukaemias, which are generally not staged according to the above system.

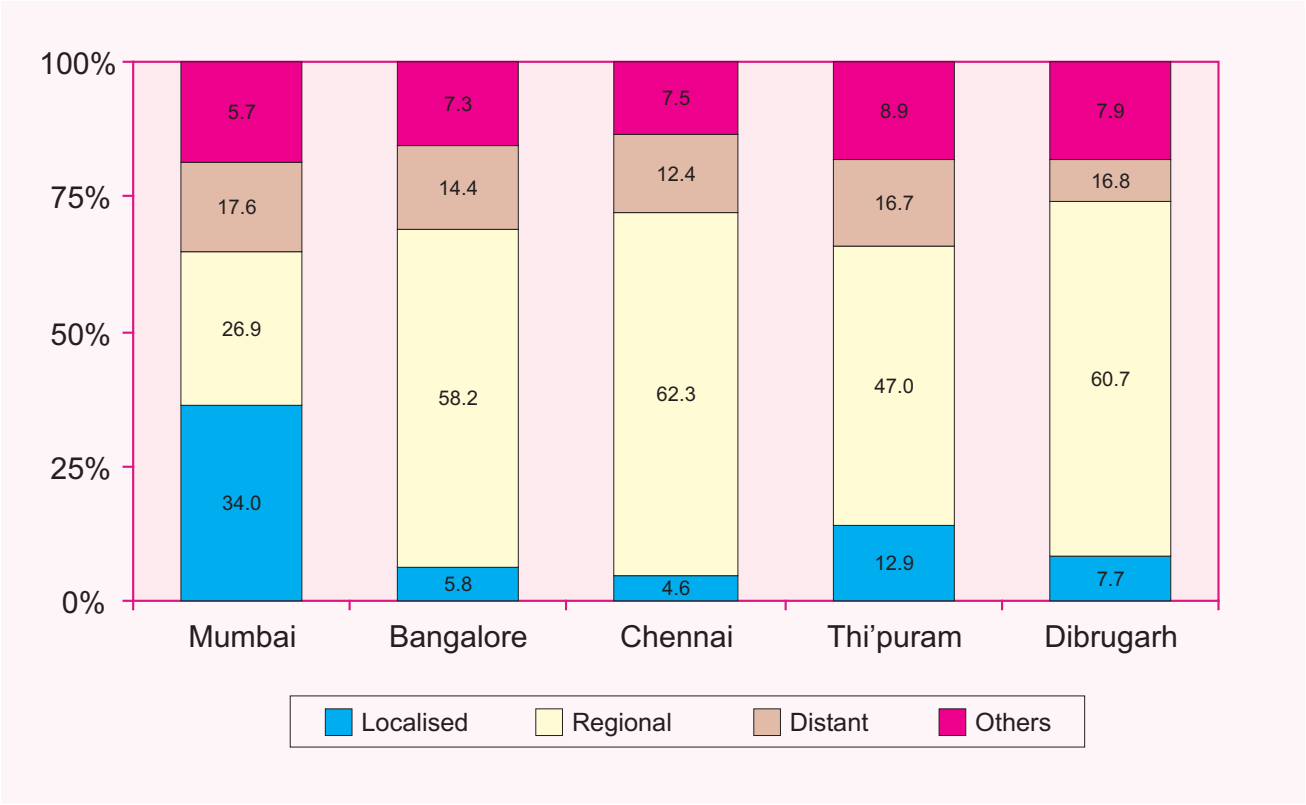
*Due to a number of reasons (which are beyond the scope of this report) there have been difficulties in abstracting and standardizing this particular information (Clinical Extent of Disease) in a uniform way by all registries. Therefore, noticeable variations in relative proportions of clinical extent of disease are observed (as also in previous reports). The same problem is seen in individual site chapters as well. The patterns of care and survival studies commenced by HBCRs is expected to iron out anomalies if any. The above may be kept in mind, while observing the relative proportion of Clinical Extent of Disease.*

**Table 6.1: Number(#) and Relative Proportion(%) of patients according to Clinical Extent of Disease (Excludes Patients Previously Treated) (1999-2000)**

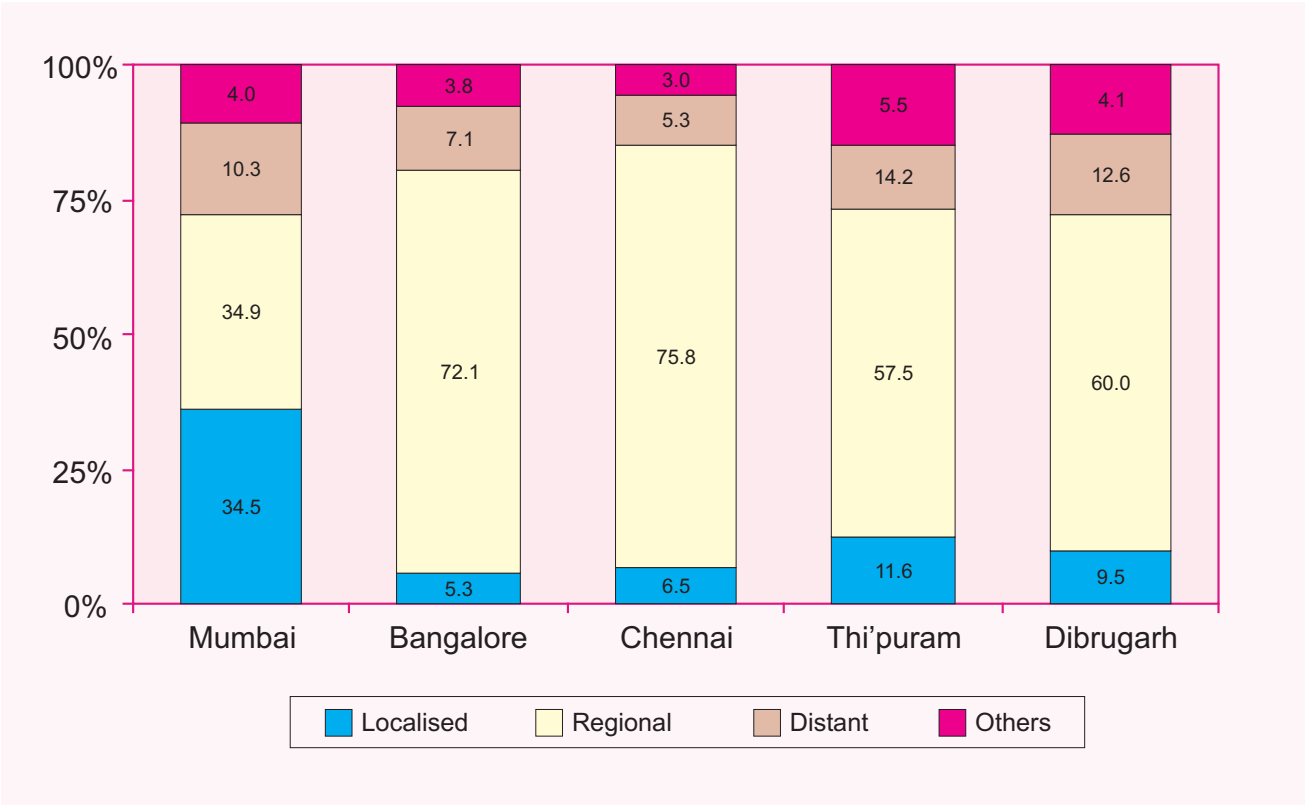
| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | | | |
| **Mumbai** | 4650 | 34.0 | 3685 | 26.9 | 8335 | 60.9 | 2406 | 17.6 | 786 | 5.7 | 13695 | 100.0 |
| **Bangalore** | 311 | 5.8 | 3128 | 58.2 | 3439 | 64.0 | 774 | 14.4 | 391 | 7.3 | 5375 | 100.0 |
| **Chennai** | 231 | 4.6 | 3149 | 62.3 | 3380 | 66.9 | 625 | 12.4 | 377 | 7.5 | 5056 | 100.0 |
| **Thi'puram** | 806 | 12.9 | 2945 | 47.0 | 3751 | 59.9 | 1048 | 16.7 | 556 | 8.9 | 6266 | 100.0 |
| **Dibrugarh** | 74 | 7.7 | 586 | 60.7 | 660 | 68.3 | 162 | 16.8 | 76 | 7.9 | 966 | 100.0 |
| **Females** | | | | | | | | | | | | |
| **Mumbai** | 3264 | 34.5 | 3301 | 34.9 | 6565 | 69.5 | 969 | 10.3 | 382 | 4.0 | 9448 | 100.0 |
| **Bangalore** | 341 | 5.3 | 4624 | 72.1 | 4965 | 77.4 | 457 | 7.1 | 243 | 3.8 | 6414 | 100.0 |
| **Chennai** | 369 | 6.5 | 4318 | 75.8 | 4687 | 82.2 | 303 | 5.3 | 171 | 3.0 | 5700 | 100.0 |
| **Thi'puram** | 481 | 11.6 | 2382 | 57.5 | 2823 | 69.1 | 588 | 14.2 | 228 | 5.5 | 4143 | 100.0 |
| **Dibrugarh** | 49 | 9.5 | 310 | 60.0 | 359 | 69.4 | 65 | 12.6 | 21 | 4.1 | 517 | 100.0 |

## Fig. 6.1 : Stack(100%) diagram showing HBCRs, Proportion(%) of Patients According To Clinical Extent of Disease (1999-2000)

### Males




### Females



# Chapter 7

# TREATMENT ONLY AT REPORTING INSTITUTION

This is the most important category of the broad treatment groups presented in chapter 5, since it best represents the contribution to the treatment aspect of patient care of a given institution.

Table 7.1 gives an overview of the number of patients treated during the period and the total number of treatment procedures instituted. As may be observed these ratios are indeed comparable between registries located at regional cancer centres. The ratio is slightly lower at Dibrugarh which is in a medical college setup. Table 7.1 is further diagrammatically represented in Figure 7.1.

## TYPES OF TREATMENT

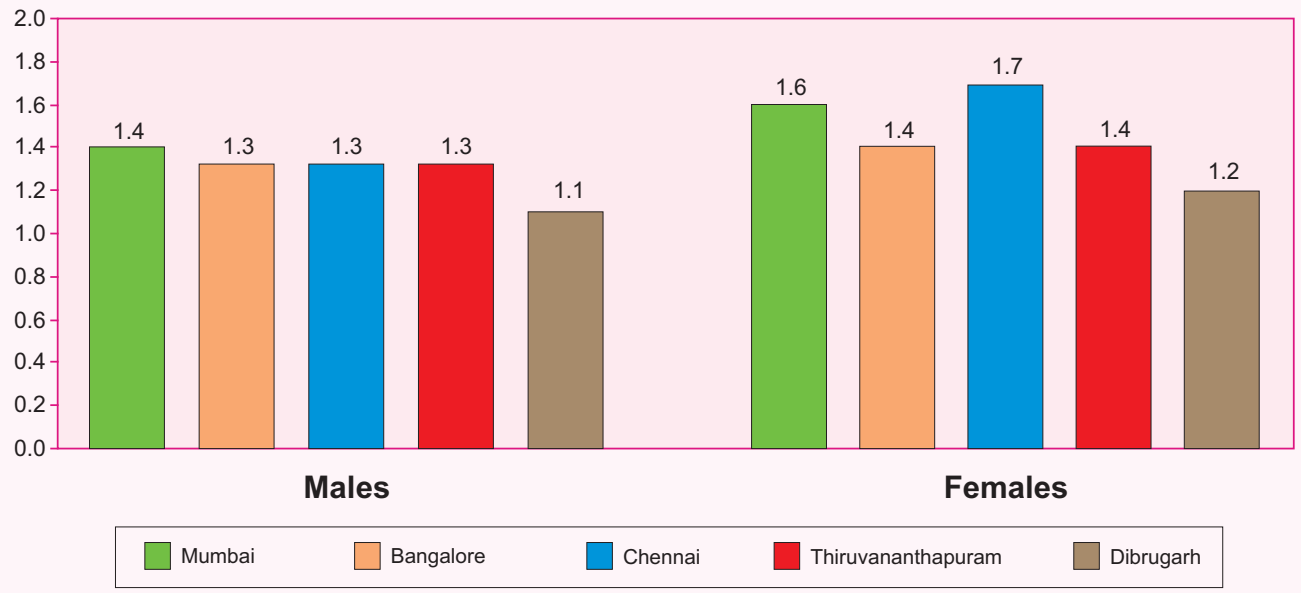
Table 7.2 and corresponding figures (Figures 7.2 and 7.3) give the numbers and relative proportions according to type of specific treatment given, whether only one type of treatment has been given (Single Modality Therapy) or more than one type of therapy (Combination Therapy) has been given. It also gives the overall number and relative proportion of any treatment with reference to the total patients treated.

Single modality of therapy ranged between 66% in Mumbai to 91% in Dibrugarh in males. In females, the lowest and highest percentages were observed in Mumbai(61%) and Dibrugarh(79%) respectively.

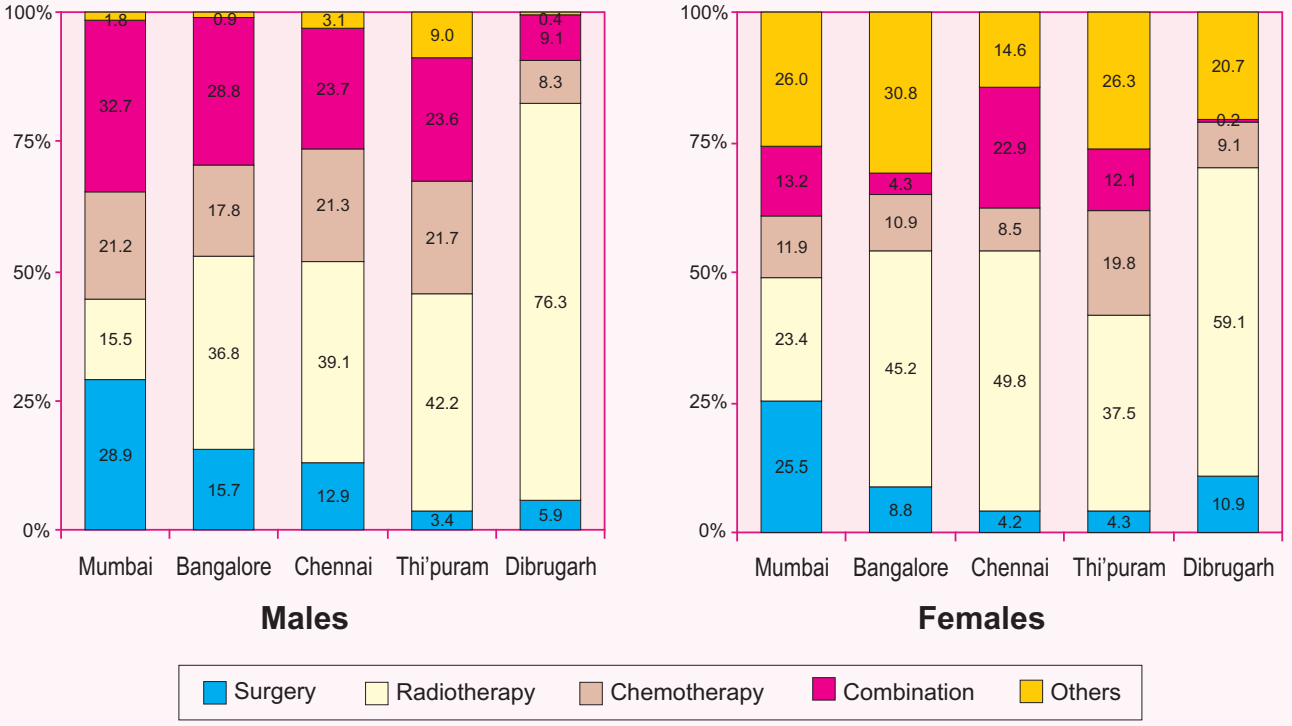
**Table 7.1: Total number of cancer patients (Pts) treated, total number of treatment procedures (Proc) performed and procedures/patients ratio (1999-2000)**

| Registry | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | Total Pts. | Total Proc. | Ratio | Total Pts. | Total Proc. | Ratio |
| **Mumbai** | 5667 | 7689 | 1.4 | 4470 | 7182 | 1.6 |
| **Bangalore** | 2227 | 2948 | 1.3 | 3334 | 4833 | 1.4 |
| **Chennai** | 1828 | 2353 | 1.3 | 2616 | 4466 | 1.7 |
| **Thi'puram** | 4766 | 5966 | 1.3 | 3325 | 4811 | 1.4 |
| **Dibrugarh** | 832 | 914 | 1.1 | 430 | 521 | 1.2 |

## Fig. 7.1: Procedure - Patient Ratio (Patients Treated only at Reporting Institution) (1999-2000)




## Fig. 7.2 : Stack(100%) diagram showing HBCRs, Proportion of Different Types of Treatment (Patients Treated Only at Reporting Institution) (1999-2000)



## Table 7.2: Number (#) & Relative Proportion (%) of patients according to Type of Treatment given (1999-2000)

### Males

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **5667** | **100.0** | **2227** | **100.0** | **1828** | **100.0** | **4766** | **100.0** | **832** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 1635 | 28.9 | 349 | 15.7 | 235 | 12.9 | 164 | 3.4 | 49 | 5.9 |
| Radiotherapy(R) | 877 | 15.5 | 820 | 36.8 | 714 | 39.1 | 2012 | 42.2 | 635 | 76.3 |
| Chemotherapy(C) | 1200 | 21.2 | 396 | 17.8 | 389 | 21.3 | 1035 | 21.7 | 69 | 8.3 |
| S + R | 788 | 13.9 | 264 | 11.9 | 174 | 9.5 | 218 | 4.6 | 37 | 4.4 |
| S + C | 230 | 4.1 | 88 | 4.0 | 59 | 3.2 | 64 | 1.3 | 16 | 1.9 |
| R + C | 695 | 12.3 | 242 | 10.9 | 166 | 9.1 | 790 | 16.6 | 20 | 2.4 |
| S + R + C | 142 | 2.5 | 48 | 2.2 | 34 | 1.9 | 54 | 1.1 | 3 | 0.4 |
| Others | 100 | 1.8 | 20 | 0.9 | 57 | 3.1 | 429 | 9.0 | 3 | 0.4 |
| **Modality of therapy*** | | | | | | | | | | |
| Single | 3712 | 65.5 | 1565 | 70.3 | 1338 | 73.2 | 3211 | 67.4 | 753 | 90.5 |
| Combination | 1855 | 32.7 | 642 | 28.8 | 433 | 23.7 | 1126 | 23.6 | 76 | 9.1 |

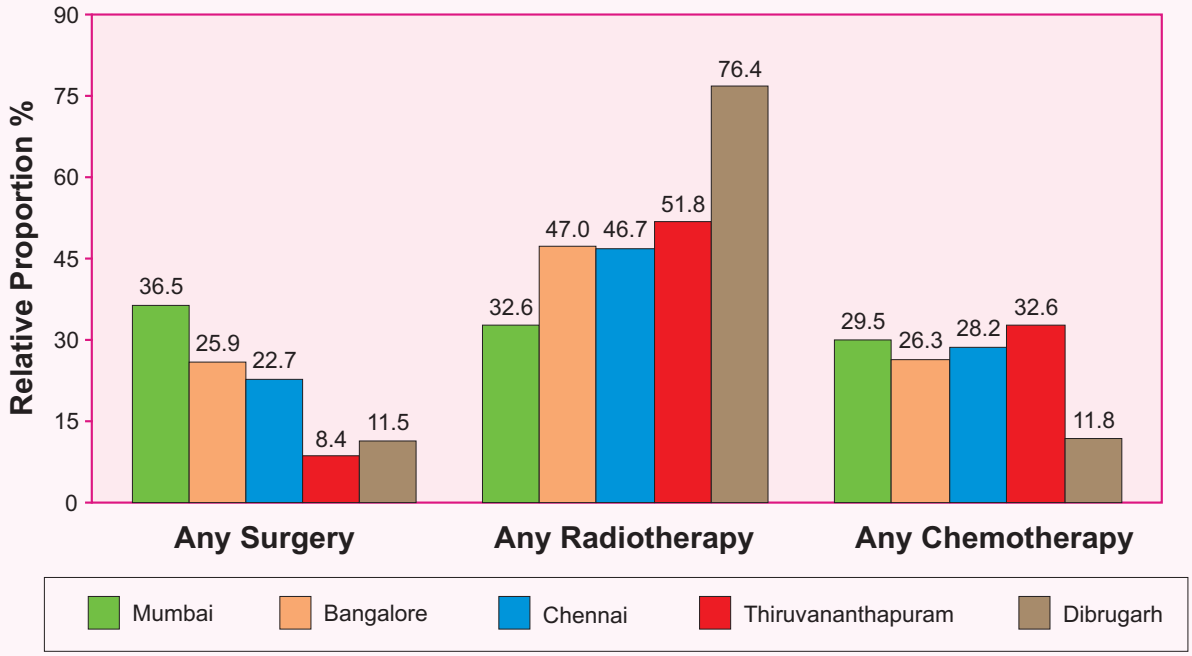
### Females

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **4470** | **100.0** | **3334** | **100.0** | **2616** | **100.0** | **3325** | **100.0** | **430** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 1140 | 25.5 | 294 | 8.8 | 109 | 4.2 | 143 | 4.3 | 47 | 10.9 |
| Radiotherapy(R) | 1046 | 23.4 | 1506 | 45.2 | 1302 | 49.8 | 1247 | 37.5 | 254 | 59.1 |
| Chemotherapy(C) | 531 | 11.9 | 364 | 10.9 | 223 | 8.5 | 659 | 19.8 | 39 | 9.1 |
| S + R | 377 | 8.4 | 367 | 11.0 | 152 | 5.8 | 208 | 6.3 | 44 | 10.2 |
| S + C | 309 | 6.9 | 166 | 5.0 | 56 | 2.1 | 158 | 4.8 | 39 | 9.1 |
| R + C | 235 | 5.3 | 336 | 10.1 | 151 | 5.8 | 363 | 10.9 | 5 | 1.2 |
| S + R + C | 240 | 5.4 | 157 | 4.7 | 24 | 0.9 | 144 | 4.3 | 1 | 0.2 |
| Others | 592 | 13.2 | 144 | 4.3 | 599 | 22.9 | 403 | 12.1 | 1 | 0.2 |
| **Modality of therapy*** | | | | | | | | | | |
| Single | 2717 | 60.8 | 2164 | 64.9 | 1634 | 62.5 | 2049 | 61.6 | 340 | 79.1 |
| Combination | 1161 | 26.0 | 1026 | 30.8 | 383 | 14.6 | 873 | 26.3 | 89 | 20.7 |

** Excludes specific treatment classified as 'Others'*

## Fig. 7.3: Proportion of Types of Treatments (Patients Treated only at Reporting Institution)

### Males




### Females

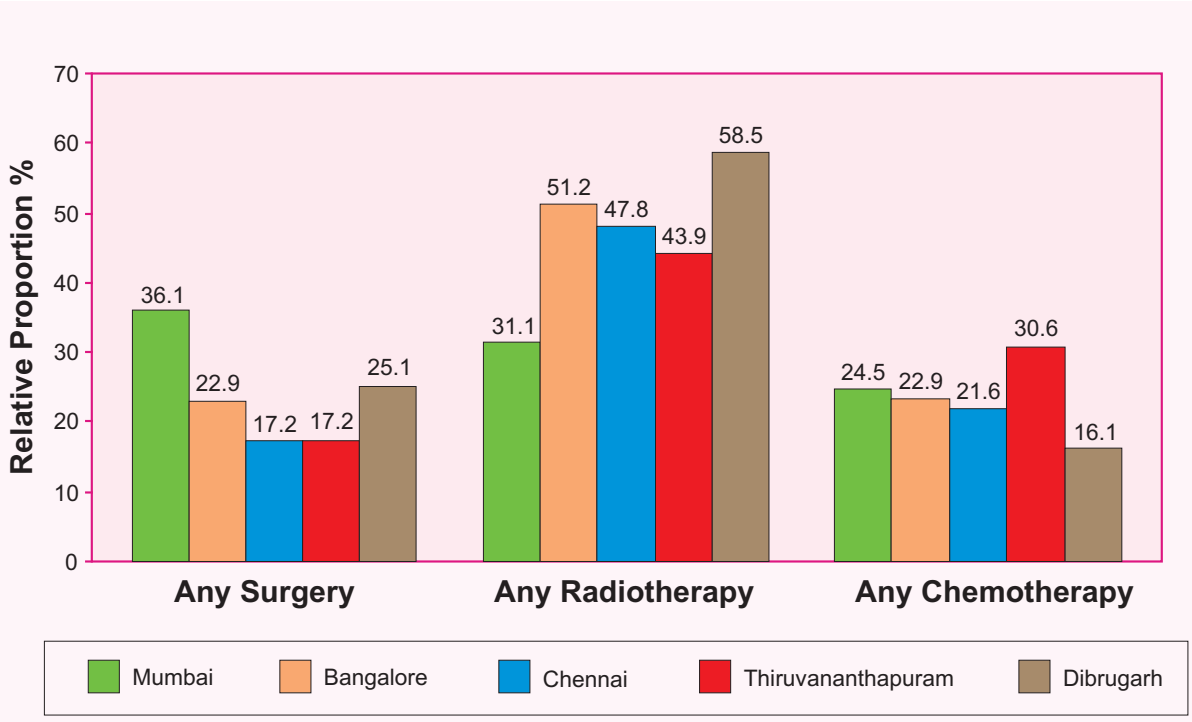


**Table 7.3: Number (#) and Proportion (%) of cancer patients according to Any Specific Treatment at Reporting Institution relative to All Treatment procedures (Proced.) (1999-2000)**

| Registry | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Proced. |
| **MALES** | | | | | | | | | |
| **Mumbai** | 2808 | 36.5 | 2509 | 32.6 | 2272 | 29.5 | 100 | 1.3 | 7689 |
| **Bangalore** | 765 | 25.9 | 1387 | 47.0 | 776 | 26.3 | 20 | 0.7 | 2948 |
| **Chennai** | 533 | 22.7 | 1099 | 46.7 | 664 | 28.2 | 57 | 2.4 | 2353 |
| **Thi'puram** | 504 | 8.4 | 3088 | 51.8 | 1945 | 32.6 | 429 | 7.2 | 5966 |
| **Dibrugarh** | 105 | 11.5 | 698 | 76.4 | 108 | 11.8 | 3 | 0.3 | 914 |
| **FEMALES** | | | | | | | | | |
| **Mumbai** | 2595 | 36.1 | 2236 | 31.1 | 1759 | 24.5 | 592 | 8.2 | 7182 |
| **Bangalore** | 1108 | 22.9 | 2473 | 51.2 | 1108 | 22.9 | 144 | 3.0 | 4833 |
| **Chennai** | 769 | 17.2 | 2133 | 47.8 | 965 | 21.6 | 599 | 13.4 | 4466 |
| **Thi'puram** | 828 | 17.2 | 2110 | 43.9 | 1470 | 30.6 | 403 | 8.4 | 4811 |
| **Dibrugarh** | 131 | 25.1 | 305 | 58.5 | 84 | 16.1 | 1 | 0.2 | 521 |

Table 7.3 and Fig. 7.3 presents the total treatment procedures according to specific treatment. Except in Mumbai, radiotherapy was the predominant form of the modalities accounting for nearly half to three fourth of treatment procedures. In Mumbai, 36% of the treatment procedures were surgery in both the sexes.

Tables 7.4(a) and 7.4(b) present number and relative proportion of various types of treatment within different categories of clinical extent of disease (viz. Localised, Regional, Distant and Others).

Tables 7.5(a) and 7.5(b) present number of proportion of specific types of treatment relative to all patients within each category of clinical extent of disease.

## Table 7.4(a): Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Males (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 1133 | 53.7 | 66 | 39.3 | 27 | 14.0 | 51 | 8.4 | 13 | 18.1 |
| Radiotherapy(R) | 288 | 13.7 | 57 | 33.9 | 119 | 61.7 | 383 | 63.0 | 52 | 72.2 |
| Chemotherapy(C) | 101 | 4.8 | 3 | 1.8 | 0 | 0.0 | 24 | 3.9 | 0 | 0.0 |
| S + R | 195 | 9.3 | 19 | 11.3 | 42 | 21.8 | 30 | 4.9 | 6 | 8.3 |
| S + C | 167 | 7.9 | 7 | 4.2 | 2 | 1.0 | 15 | 2.5 | 0 | 0.0 |
| R + C | 120 | 5.7 | 12 | 7.1 | 1 | 0.5 | 72 | 11.8 | 1 | 1.4 |
| S + R + C | 73 | 3.5 | 3 | 1.8 | 0 | 0.0 | 7 | 1.2 | 0 | 0.0 |
| Others | 31 | 1.5 | 1 | 0.6 | 2 | 1.0 | 26 | 4.3 | 0 | 0.0 |
| ALL TREATMENTS | 2108 | 100.0 | 168 | 100.0 | 193 | 100.0 | 608 | 100.0 | 72 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 430 | 24.3 | 248 | 39.3 | 197 | 17.2 | 99 | 4.3 | 23 | 4.3 |
| Radiotherapy(R) | 389 | 22.0 | 655 | 33.9 | 549 | 47.9 | 1158 | 50.6 | 461 | 85.8 |
| Chemotherapy(C) | 100 | 5.7 | 92 | 1.8 | 61 | 5.3 | 204 | 8.9 | 6 | 1.1 |
| S + R | 546 | 30.9 | 226 | 11.3 | 129 | 11.3 | 176 | 7.7 | 22 | 4.1 |
| S + C | 31 | 1.8 | 68 | 4.2 | 51 | 4.5 | 39 | 1.7 | 11 | 2.0 |
| R + C | 209 | 11.8 | 117 | 7.1 | 90 | 7.9 | 444 | 19.4 | 10 | 1.9 |
| S + R + C | 53 | 3.0 | 42 | 1.8 | 31 | 2.7 | 45 | 2.0 | 3 | 0.6 |
| Others | 11 | 0.6 | 14 | 0.6 | 38 | 3.3 | 124 | 5.4 | 1 | 0.2 |
| ALL TREATMENTS | 1769 | 100.0 | 1462 | 100.0 | 1146 | 100.0 | 2289 | 100.0 | 537 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 48 | 8.1 | 19 | 12.7 | 9 | 11.0 | 8 | 1.3 | 8 | 16.7 |
| Radiotherapy(R) | 135 | 22.8 | 67 | 44.7 | 9 | 11.0 | 256 | 40.4 | 11 | 22.9 |
| Chemotherapy(C) | 236 | 39.9 | 27 | 18.0 | 31 | 37.8 | 126 | 19.9 | 21 | 43.8 |
| S + R | 4 | 0.7 | 7 | 4.7 | 0 | 0.0 | 3 | 0.5 | 2 | 4.2 |
| S + C | 26 | 4.4 | 6 | 4.0 | 4 | 4.9 | 8 | 1.3 | 3 | 6.3 |
| R + C | 76 | 12.8 | 18 | 12.0 | 10 | 12.2 | 79 | 12.5 | 3 | 6.3 |
| S + R + C | 12 | 2.0 | 1 | 0.7 | 2 | 2.4 | 2 | 0.3 | 0 | 0.0 |
| Others | 55 | 9.3 | 5 | 3.3 | 17 | 20.7 | 152 | 24.0 | 0 | 0.0 |
| ALL TREATMENTS | 592 | 100.0 | 150 | 100.0 | 82 | 100.0 | 634 | 100.0 | 48 | 100.0 |
| **Others** | | | | | | | | | | |
| Surgery(S) | 24 | 2.0 | 16 | 3.6 | 2 | 0.5 | 6 | 0.5 | 5 | 2.9 |
| Radiotherapy(R) | 65 | 5.4 | 41 | 9.2 | 37 | 9.1 | 215 | 17.4 | 111 | 63.4 |
| Chemotherapy(C) | 763 | 63.7 | 274 | 61.3 | 297 | 73.0 | 681 | 55.1 | 42 | 24.0 |
| S + R | 43 | 3.6 | 12 | 2.7 | 3 | 0.7 | 9 | 0.7 | 7 | 4.0 |
| S + C | 6 | 0.5 | 7 | 1.6 | 2 | 0.5 | 2 | 0.2 | 2 | 1.1 |
| R + C | 290 | 24.2 | 95 | 21.3 | 65 | 16.0 | 195 | 15.8 | 6 | 3.4 |
| S + R + C | 4 | 0.3 | 2 | 0.4 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| Others | 3 | 0.3 | 0 | 0.0 | 0 | 0.0 | 127 | 10.3 | 2 | 1.1 |
| ALL TREATMENTS | 1198 | 100.0 | 447 | 100.0 | 407 | 100.0 | 1235 | 100.0 | 175 | 100.0 |

## Table 7.4(b): Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Females (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 787 | 47.6 | 45 | 20.7 | 12 | 4.4 | 42 | 10.4 | 9 | 19.1 |
| Radiotherapy(R) | 163 | 9.9 | 67 | 30.9 | 137 | 50.7 | 172 | 42.6 | 31 | 66.0 |
| Chemotherapy(C) | 53 | 3.2 | 10 | 4.6 | 2 | 0.7 | 16 | 4.0 | 0 | 0.0 |
| S + R | 172 | 10.4 | 45 | 20.7 | 67 | 24.8 | 50 | 12.4 | 5 | 10.6 |
| S + C | 138 | 8.4 | 10 | 4.6 | 0 | 0.0 | 33 | 8.2 | 2 | 4.3 |
| R + C | 52 | 3.1 | 8 | 3.7 | 7 | 2.6 | 33 | 8.2 | 0 | 0.0 |
| S + R + C | 95 | 5.8 | 6 | 2.8 | 2 | 0.7 | 23 | 5.7 | 0 | 0.0 |
| Others | 192 | 11.6 | 26 | 12.0 | 43 | 15.9 | 35 | 8.7 | 0 | 0.0 |
| ALL TREATMENTS | 1652 | 100.0 | 217 | 100.0 | 270 | 100.0 | 404 | 100.0 | 47 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 313 | 17.2 | 226 | 8.4 | 95 | 4.7 | 98 | 5.0 | 30 | 10.5 |
| Radiotherapy(R) | 745 | 40.9 | 1340 | 50.0 | 1143 | 56.4 | 936 | 47.7 | 182 | 63.6 |
| Chemotherapy(C) | 47 | 2.6 | 187 | 7.0 | 68 | 3.4 | 155 | 7.9 | 4 | 1.4 |
| S + R | 184 | 10.1 | 306 | 11.4 | 85 | 4.2 | 154 | 7.9 | 35 | 12.2 |
| S + C | 70 | 3.8 | 113 | 4.2 | 52 | 2.6 | 98 | 5.0 | 31 | 10.8 |
| R + C | 64 | 3.5 | 261 | 9.7 | 100 | 4.9 | 208 | 10.6 | 3 | 1.0 |
| S + R + C | 120 | 6.6 | 145 | 5.4 | 22 | 1.1 | 110 | 5.6 | 1 | 0.3 |
| Others | 279 | 15.3 | 103 | 3.8 | 460 | 22.7 | 202 | 10.3 | 0 | 0.0 |
| ALL TREATMENTS | 1822 | 100.0 | 2681 | 100.0 | 2025 | 100.0 | 1961 | 100.0 | 286 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 34 | 5.9 | 14 | 6.4 | 1 | 0.6 | 0 | 0.0 | 7 | 16.3 |
| Radiotherapy(R) | 105 | 18.2 | 83 | 37.7 | 10 | 6.4 | 69 | 19.8 | 14 | 32.6 |
| Chemotherapy(C) | 147 | 25.5 | 43 | 19.5 | 34 | 21.8 | 99 | 28.4 | 15 | 34.9 |
| S + R | 14 | 2.4 | 11 | 5.0 | 0 | 0.0 | 4 | 1.1 | 0 | 0.0 |
| S + C | 92 | 16.0 | 36 | 16.4 | 3 | 1.9 | 25 | 7.2 | 6 | 14.0 |
| R + C | 43 | 7.5 | 14 | 6.4 | 12 | 7.7 | 42 | 12.1 | 1 | 2.3 |
| S + R + C | 22 | 3.8 | 5 | 2.3 | 0 | 0.0 | 9 | 2.6 | 0 | 0.0 |
| Others | 119 | 20.7 | 14 | 6.4 | 96 | 61.5 | 100 | 28.7 | 0 | 0.0 |
| ALL TREATMENTS | 576 | 100.0 | 220 | 100.0 | 156 | 100.0 | 348 | 100.0 | 43 | 100.0 |
| **Others** | | | | | | | | | | |
| Surgery(S) | 6 | 1.4 | 9 | 4.2 | 1 | 0.6 | 3 | 0.5 | 1 | 1.9 |
| Radiotherapy(R) | 33 | 7.9 | 16 | 7.4 | 12 | 7.3 | 70 | 11.4 | 27 | 50.0 |
| Chemotherapy(C) | 284 | 67.6 | 124 | 57.4 | 119 | 72.1 | 389 | 63.6 | 20 | 37.0 |
| S + R | 7 | 1.7 | 5 | 2.3 | 0 | 0.0 | 0 | 0.0 | 4 | 7.4 |
| S + C | 9 | 2.1 | 7 | 3.2 | 1 | 0.6 | 2 | 0.3 | 0 | 0.0 |
| R + C | 76 | 18.1 | 53 | 24.5 | 32 | 19.4 | 80 | 13.1 | 1 | 1.9 |
| S + R + C | 3 | 0.7 | 1 | 0.5 | 0 | 0.0 | 2 | 0.3 | 0 | 0.0 |
| Others | 2 | 0.5 | 1 | 0.5 | 0 | 0.0 | 66 | 10.8 | 1 | 1.9 |
| ALL TREATMENTS | 420 | 100.0 | 216 | 100.0 | 165 | 100.0 | 612 | 100.0 | 54 | 100.0 |

## Table 7.5(a): Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Males (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 1572 | 74.6 | 678 | 32.2 | 461 | 21.9 | 31 | 1.5 | 2108 |
| **Bangalore** | 96 | 57.1 | 92 | 54.8 | 25 | 14.9 | 1 | 0.6 | 168 |
| **Chennai** | 73 | 37.8 | 164 | 85.0 | 5 | 2.6 | 2 | 1.0 | 193 |
| **Thi'puram** | 103 | 16.9 | 492 | 80.9 | 118 | 19.4 | 26 | 4.3 | 608 |
| **Dibrugarh** | 19 | 26.4 | 59 | 81.9 | 1 | 1.4 | 0 | 0.0 | 72 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 1069 | 60.4 | 1201 | 67.9 | 397 | 22.4 | 11 | 0.6 | 1769 |
| **Bangalore** | 595 | 40.7 | 1049 | 71.8 | 320 | 21.9 | 14 | 1.0 | 1462 |
| **Chennai** | 436 | 38.0 | 804 | 70.2 | 241 | 21.0 | 38 | 3.3 | 1146 |
| **Thi'puram** | 360 | 15.7 | 1827 | 79.8 | 733 | 32.0 | 124 | 5.4 | 2289 |
| **Dibrugarh** | 59 | 11.0 | 497 | 92.6 | 30 | 5.6 | 1 | 0.2 | 537 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 90 | 15.2 | 228 | 38.5 | 351 | 59.3 | 55 | 9.3 | 592 |
| **Bangalore** | 37 | 24.7 | 96 | 64.0 | 53 | 35.3 | 5 | 3.3 | 150 |
| **Chennai** | 16 | 19.5 | 25 | 30.5 | 53 | 64.6 | 17 | 20.7 | 82 |
| **Thi'puram** | 24 | 3.8 | 350 | 55.2 | 216 | 34.1 | 152 | 24.0 | 634 |
| **Dibrugarh** | 13 | 27.1 | 16 | 33.3 | 27 | 56.3 | 0 | 0.0 | 48 |
| OTHERS | | | | | | | | | |
| **Mumbai** | 77 | 6.4 | 402 | 33.6 | 1063 | 88.7 | 3 | 0.3 | 1198 |
| **Bangalore** | 37 | 8.3 | 150 | 33.6 | 378 | 84.6 | 0 | 0.0 | 447 |
| **Chennai** | 8 | 2.0 | 106 | 26.0 | 365 | 89.7 | 0 | 0.0 | 407 |
| **Thi'puram** | 17 | 1.4 | 419 | 33.9 | 878 | 71.1 | 127 | 10.3 | 1235 |
| **Dibrugarh** | 14 | 8.0 | 126 | 72.0 | 50 | 28.6 | 2 | 1.1 | 175 |

## Table 7.5(b): Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Females (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 1380 | 83.5 | 576 | 34.9 | 446 | 27.0 | 192 | 11.6 | 1652 |
| **Bangalore** | 132 | 60.8 | 145 | 66.8 | 45 | 20.7 | 26 | 12.0 | 217 |
| **Chennai** | 124 | 45.9 | 251 | 93.0 | 47 | 17.4 | 43 | 15.9 | 270 |
| **Thi'puram** | 181 | 44.8 | 290 | 71.8 | 113 | 28.0 | 35 | 8.7 | 404 |
| **Dibrugarh** | 16 | 34.0 | 36 | 76.6 | 2 | 4.3 | 0 | 0.0 | 47 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 943 | 51.8 | 1285 | 70.5 | 536 | 29.4 | 279 | 15.3 | 1822 |
| **Bangalore** | 884 | 33.0 | 2134 | 79.6 | 770 | 28.7 | 103 | 3.8 | 2681 |
| **Chennai** | 631 | 31.2 | 1764 | 87.1 | 640 | 31.6 | 460 | 22.7 | 2025 |
| **Thi'puram** | 588 | 30.0 | 1500 | 76.5 | 668 | 34.1 | 202 | 10.3 | 1961 |
| **Dibrugarh** | 97 | 33.9 | 221 | 77.3 | 39 | 13.6 | 0 | 0.0 | 286 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 247 | 42.9 | 256 | 44.4 | 405 | 70.3 | 119 | 20.7 | 576 |
| **Bangalore** | 70 | 31.8 | 119 | 54.1 | 107 | 48.6 | 14 | 6.4 | 220 |
| **Chennai** | 12 | 7.7 | 74 | 47.4 | 126 | 80.8 | 96 | 61.5 | 156 |
| **Thi'puram** | 52 | 14.9 | 158 | 45.4 | 215 | 61.8 | 100 | 28.7 | 348 |
| **Dibrugarh** | 13 | 30.2 | 15 | 34.9 | 22 | 51.2 | 0 | 0.0 | 43 |
| OTHERS | | | | | | | | | |
| **Mumbai** | 25 | 6.0 | 119 | 28.3 | 372 | 88.6 | 2 | 0.5 | 420 |
| **Bangalore** | 22 | 10.2 | 75 | 34.7 | 186 | 86.1 | 1 | 0.5 | 216 |
| **Chennai** | 2 | 1.2 | 44 | 26.7 | 152 | 92.1 | 0 | 0.0 | 165 |
| **Thi'puram** | 7 | 1.1 | 162 | 26.5 | 474 | 77.5 | 66 | 10.8 | 612 |
| **Dibrugarh** | 5 | 9.3 | 33 | 61.1 | 21 | 38.9 | 1 | 1.9 | 54 |

# Chapter 8

## MOUTH (ICD-10: C03-C06)

The total number, relative proportion and rank of the cancer of mouth in males and females for the years 1999 and 2000 is given in Table 8.1(a). Cancer of the mouth ranked as the leading site in Mumbai in males and was within the first five leading sites in all registries in both males and females.

Table 8.1(b) gives the sub-site distribution of cancers of the oral cavity. Table 8.1(c) gives the sub-site distribution of cancer of gum in all registries in both sexes. A higher proportion of cancers were seen in the lower gum. Table 8.1(d) gives the sub-site distribution of cancer of palate. The distribution of the relative proportion of hard palate and soft palate cancers show interesting variation among the registries and between the sexes. While males in Mumbai and Thiruvananthapuram registry showed almost equal proportion of hard and soft palate cancers, Bangalore, Chennai and Dibrugarh registries showed a higher proportion of cancers of the soft palate in males. In females, cancer of the hard palate was predominant in Mumbai and Thiruvananthapuram.

Table 8.1(e) shows the relative proportion of the sub-sites of cancer of other and unspecified parts of the mouth. Cheek mucosa accounted for the vast majority of cancers of this site in either sex.

Figure 8.1 gives the trends in actual number of mouth cancers from 1984 to 2000. An increasing trend in actual number was observed in Mumbai (in males & females) and in Thiruvananthapuram (in males).

Table 8.2 and Figure 8.2 give the distribution of mouth cancers by five year age group. The relatively higher distribution of mouth cancers was seen in the younger ages in Bangalore in both males and females.

The predominant form of diagnosis in all registries for mouth cancer was through microscopic examination (Table 8.3) though this proportion was slightly lower in Chennai. Table 8.4 gives the distribution of cancers according to the clinical extent of disease. Over 60% of cases have "Regional spread", at diagnosis.

Table 8.5 gives the number and relative proportion according to the broad groups of treatment and Tables 8.6, 8.7 & 8.8 give an idea of the type of treatment instituted by these registries.

## Table 8.1(a) : Number(#), Relative Proportion(%) and Rank(R) of cancers of the mouth (1999-2000)

| Registry | Males | | | | Females | | | |
|---|---|---|---|---|---|---|---|---|
| | Total | # | % | R | Total | # | % | R |
| **Mumbai** | 17637 | 1986 | 11.3 | 1 | 13679 | 656 | 4.8 | 4 |
| **Bangalore** | 6106 | 368 | 6.0 | 5 | 7543 | 833 | 11.0 | 3 |
| **Chennai** | 6195 | 544 | 8.8 | 2 | 7139 | 441 | 6.2 | 3 |
| **Thi'puram** | 7859 | 734 | 9.3 | 2 | 7247 | 384 | 5.3 | 5 |
| **Dibrugarh** | 997 | 86 | 8.6 | 3 | 536 | 37 | 6.9 | 5 |

## Table 8.1(b) : Cancers of oral cavity - Number(#) and Relative Proportion(%) according to sub-site (1999-2000)

| | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Gums | 487 | 24.5 | 40 | 10.9 | 125 | 23.0 | 156 | 21.3 | 12 | 14.0 |
| Floor of mouth | 108 | 5.4 | 50 | 13.6 | 60 | 11.0 | 93 | 12.7 | 7 | 8.1 |
| Palate | 180 | 9.1 | 68 | 18.5 | 78 | 14.3 | 83 | 11.3 | 15 | 17.4 |
| Other & Uns. | 1211 | 61.0 | 210 | 57.1 | 281 | 51.7 | 402 | 54.8 | 52 | 60.5 |
| **Total** | **1986** | **100.0** | **368** | **100.0** | **544** | **100.0** | **734** | **100.0** | **86** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Gums | 206 | 31.4 | 118 | 14.2 | 114 | 25.9 | 99 | 25.8 | 8 | 21.6 |
| Floor of mouth | 13 | 2.0 | 5 | 0.6 | 5 | 1.1 | 8 | 2.1 | 2 | 5.4 |
| Palate | 39 | 5.9 | 33 | 4.0 | 28 | 6.3 | 25 | 6.5 | 4 | 10.8 |
| Other & Uns. | 398 | 60.7 | 677 | 81.3 | 294 | 66.7 | 252 | 65.6 | 23 | 62.2 |
| **Total** | **656** | **100.0** | **833** | **100.0** | **441** | **100.0** | **384** | **100.0** | **37** | **100.0** |

## Table 8.1(c) : Cancer of Gum - Number(#) and Relative Proportion(%) according to sub-site (1999-2000)

| | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | |
| Upper gum | 65 | 13.3 | 7 | 17.5 | 26 | 20.8 | 24 | 15.4 | 2 | 16.7 |
| Lower gum | 387 | 79.5 | 14 | 35.0 | 98 | 78.4 | 128 | 82.1 | 7 | 58.3 |
| Other & UNS | 35 | 7.2 | 19 | 47.5 | 1 | 0.8 | 4 | 2.6 | 3 | 25.0 |
| **Total** | **487** | **100.0** | **40** | **100.0** | **125** | **100.0** | **156** | **100.0** | **12** | **100.0** |
| **Females** | | | | | | | | | | |
| Upper gum | 30 | 14.6 | 12 | 10.2 | 19 | 16.7 | 16 | 16.2 | 0 | 0.0 |
| Lower gum | 166 | 80.6 | 61 | 51.7 | 95 | 83.3 | 80 | 80.8 | 7 | 87.5 |
| Other & UNS | 10 | 4.9 | 45 | 38.1 | 0 | 0.0 | 3 | 3.0 | 1 | 12.5 |
| **Total** | **206** | **100.0** | **118** | **100.0** | **114** | **100.0** | **99** | **100.0** | **8** | **100.0** |

## Table 8.1(d) : Cancer of Palate - Number(#) and Relative Proportion(%) according to sub-site (1999-2000)

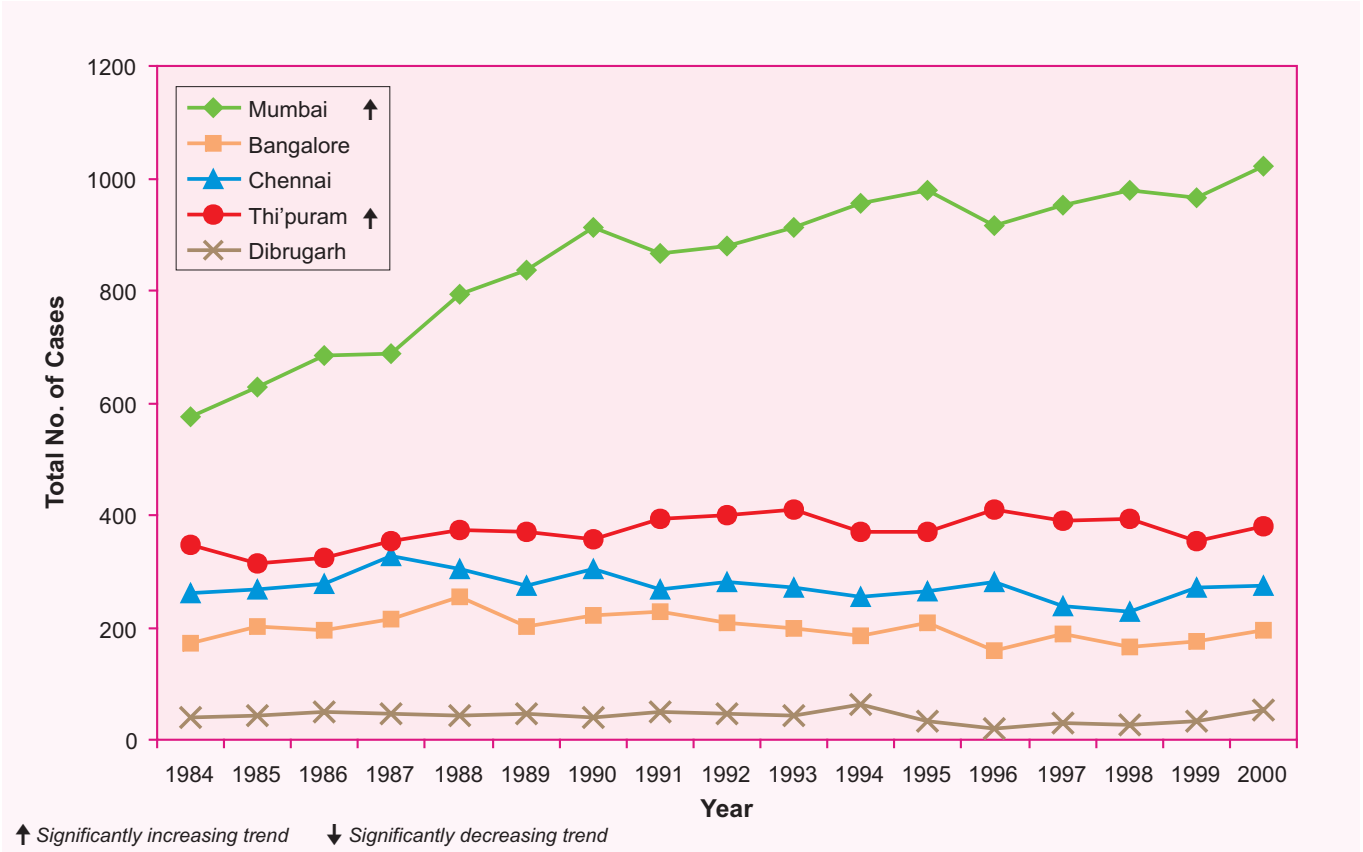
| | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | |
| Hard palate | 80 | 44.4 | 13 | 19.1 | 13 | 16.7 | 38 | 45.8 | 2 | 13.3 |
| Soft palate | 88 | 48.9 | 46 | 67.6 | 36 | 46.2 | 31 | 37.3 | 8 | 53.3 |
| Other & UNS | 12 | 6.7 | 9 | 13.2 | 29 | 37.2 | 14 | 16.9 | 5 | 33.3 |
| **Total** | **180** | **100.0** | **68** | **100.0** | **78** | **100.0** | **83** | **100.0** | **15** | **100.0** |
| **Females** | | | | | | | | | | |
| Hard palate | 29 | 74.4 | 18 | 54.5 | 14 | 50.0 | 18 | 72.0 | 1 | 25.0 |
| Soft palate | 6 | 15.4 | 8 | 24.2 | 9 | 32.1 | 2 | 8.0 | 2 | 50.0 |
| Other & UNS | 4 | 10.3 | 7 | 21.2 | 5 | 17.9 | 5 | 20.0 | 1 | 25.0 |
| **Total** | **39** | **100.0** | **33** | **100.0** | **28** | **100.0** | **25** | **100.0** | **4** | **100.0** |

## Table 8.1(e) : Cancer of Other and Unspecified parts of mouth - Number(#) and Relative Proportion(%) according to sub-site (1999-2000)

| | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Cheek mucosa | 975 | 80.5 | 128 | 61.0 | 234 | 83.3 | 358 | 89.1 | 40 | 76.9 |
| Vestibule of mouth | 98 | 8.1 | 22 | 10.5 | 3 | 1.1 | 2 | 0.5 | 1 | 1.9 |
| Retromolar area | 135 | 11.1 | 50 | 23.8 | 38 | 13.5 | 32 | 8.0 | 7 | 13.5 |
| Other & UNS | 3 | 0.2 | 10 | 4.8 | 6 | 2.1 | 10 | 2.5 | 4 | 7.7 |
| **Total** | **1211** | **100.0** | **210** | **100.0** | **281** | **100.0** | **402** | **100.0** | **52** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Cheek mucosa | 338 | 84.9 | 476 | 70.3 | 280 | 95.2 | 239 | 94.8 | 16 | 69.6 |
| Vestibule of mouth | 19 | 4.8 | 76 | 11.2 | 2 | 0.7 | 3 | 1.2 | 0 | 0.0 |
| Retromolar area | 38 | 9.5 | 79 | 11.7 | 7 | 2.4 | 5 | 2.0 | 2 | 8.7 |
| Other & UNS | 3 | 0.8 | 46 | 6.8 | 5 | 1.7 | 5 | 2.0 | 5 | 21.7 |
| **Total** | **398** | **100.0** | **677** | **100.0** | **294** | **100.0** | **252** | **100.0** | **23** | **100.0** |

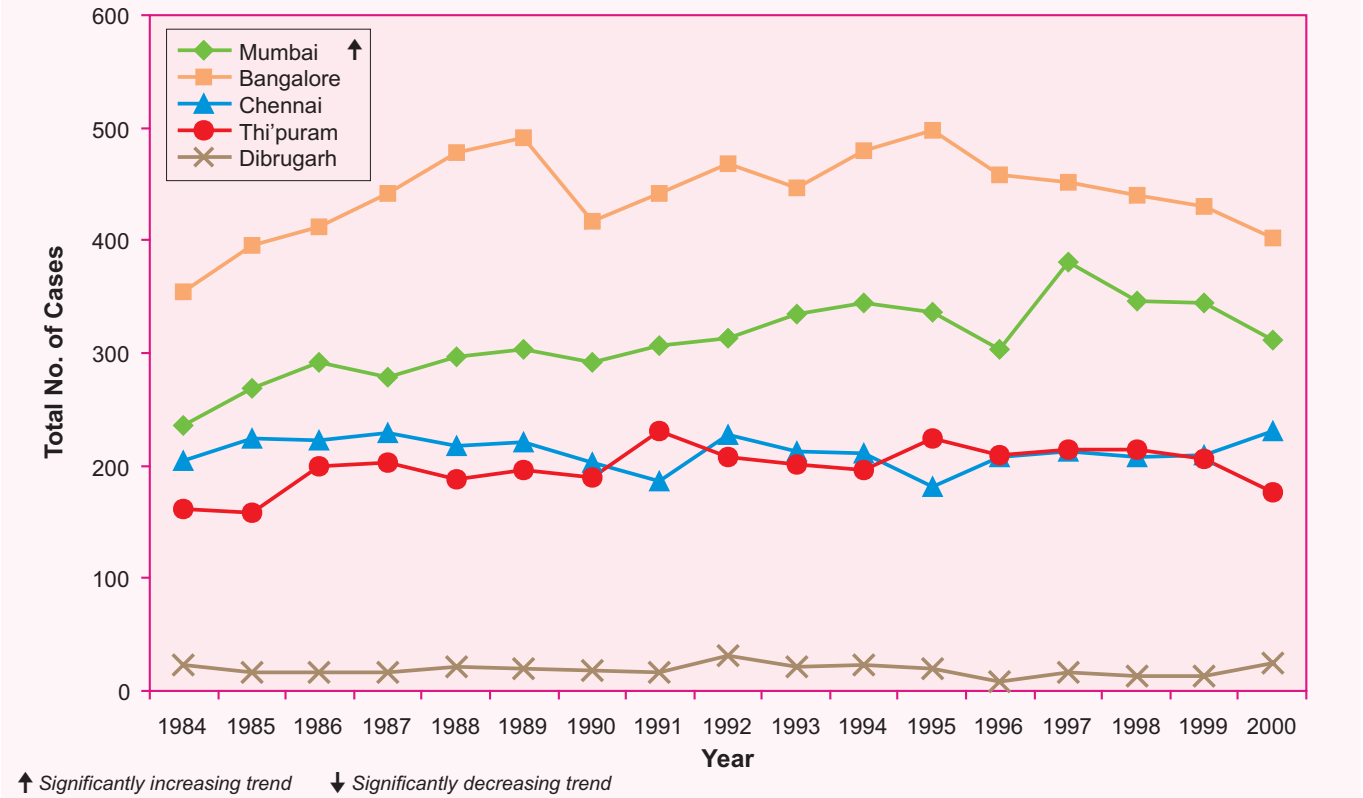
## Fig. 8.1: Trends in Actual Numbers - Mouth Cancers

### Males




↑ *Significantly increasing trend* ↓ *Significantly decreasing trend*

### Females




↑ *Significantly increasing trend* ↓ *Significantly decreasing trend*

## Table 8.2: Number(#) and Relative Proportion(%) of Mouth cancers according to five year age group (1999-2000)

### Males

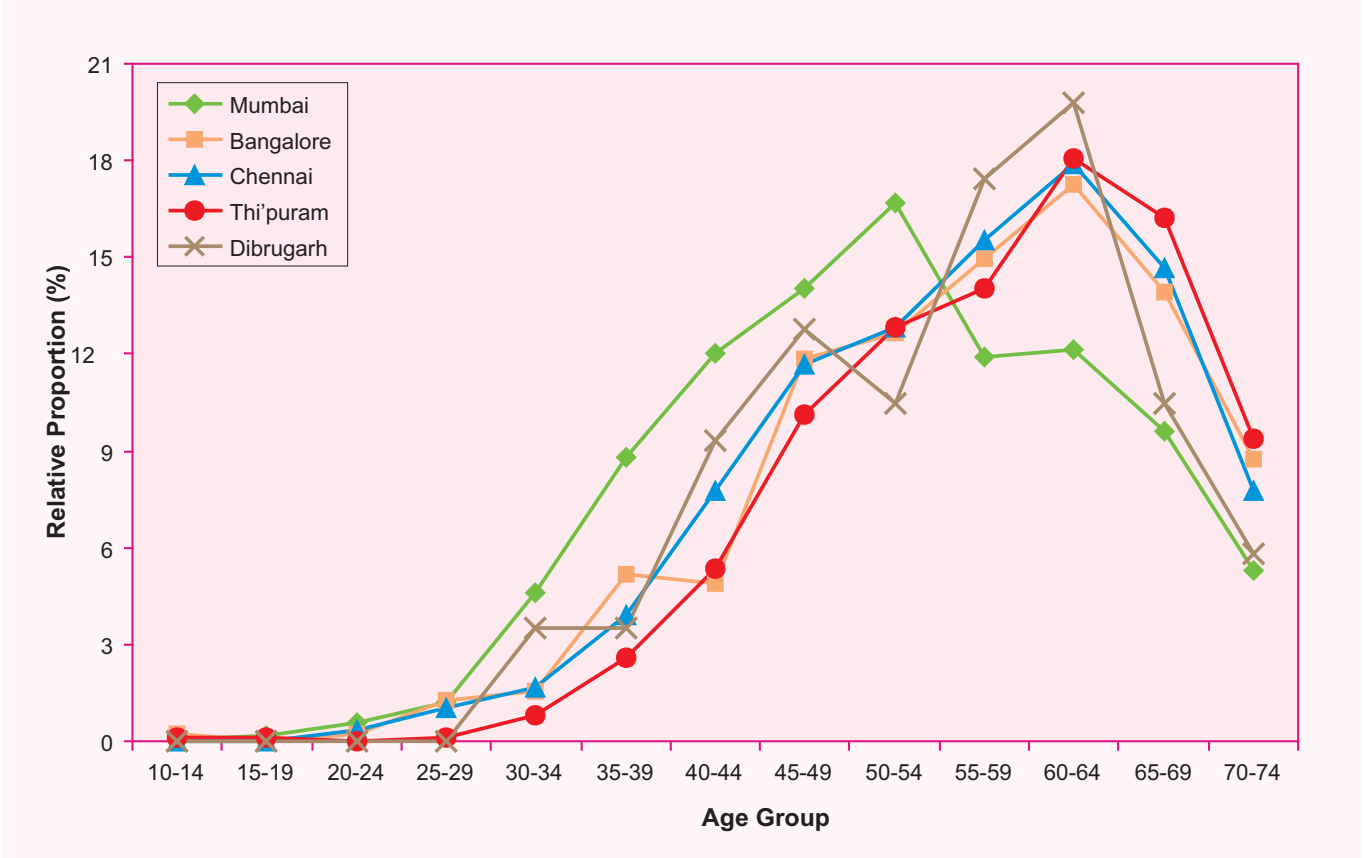
| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5- 9 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10-14 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| 15-19 | 3 | 0.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| 20-24 | 11 | 0.6 | 1 | 0.3 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| 25-29 | 24 | 1.2 | 5 | 1.4 | 6 | 1.1 | 1 | 0.1 | 0 | 0.0 |
| 30-34 | 91 | 4.6 | 5 | 1.4 | 9 | 1.7 | 6 | 0.8 | 3 | 3.5 |
| 35-39 | 175 | 8.8 | 20 | 5.4 | 20 | 3.7 | 19 | 2.6 | 3 | 3.5 |
| 40-44 | 239 | 12.0 | 19 | 5.2 | 41 | 7.5 | 37 | 5.0 | 8 | 9.3 |
| 45-49 | 279 | 14.0 | 45 | 12.2 | 63 | 11.6 | 75 | 10.2 | 11 | 12.8 |
| 50-54 | 331 | 16.7 | 47 | 12.8 | 68 | 12.5 | 92 | 12.5 | 9 | 10.5 |
| 55-59 | 236 | 11.9 | 55 | 14.9 | 83 | 15.3 | 104 | 14.2 | 15 | 17.4 |
| 60-64 | 241 | 12.1 | 65 | 17.7 | 97 | 17.8 | 135 | 18.4 | 17 | 19.8 |
| 65-69 | 191 | 9.6 | 50 | 13.6 | 83 | 15.3 | 121 | 16.5 | 9 | 10.5 |
| 70-74 | 105 | 5.3 | 29 | 7.9 | 44 | 8.1 | 66 | 9.0 | 5 | 5.8 |
| 75+ | 59 | 3.0 | 26 | 7.1 | 29 | 5.3 | 76 | 10.4 | 6 | 7.0 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Ages** | **1986** | **100.0** | **368** | **100.0** | **544** | **100.0** | **734** | **100.0** | **86** | **100.0** |
| **Mean** | 51.7 | | 56.1 | | 56.6 | | 59.5 | | 55.5 | |
| **SD** | 12.05 | | 12.41 | | 11.62 | | 11.48 | | 11.93 | |

### Females

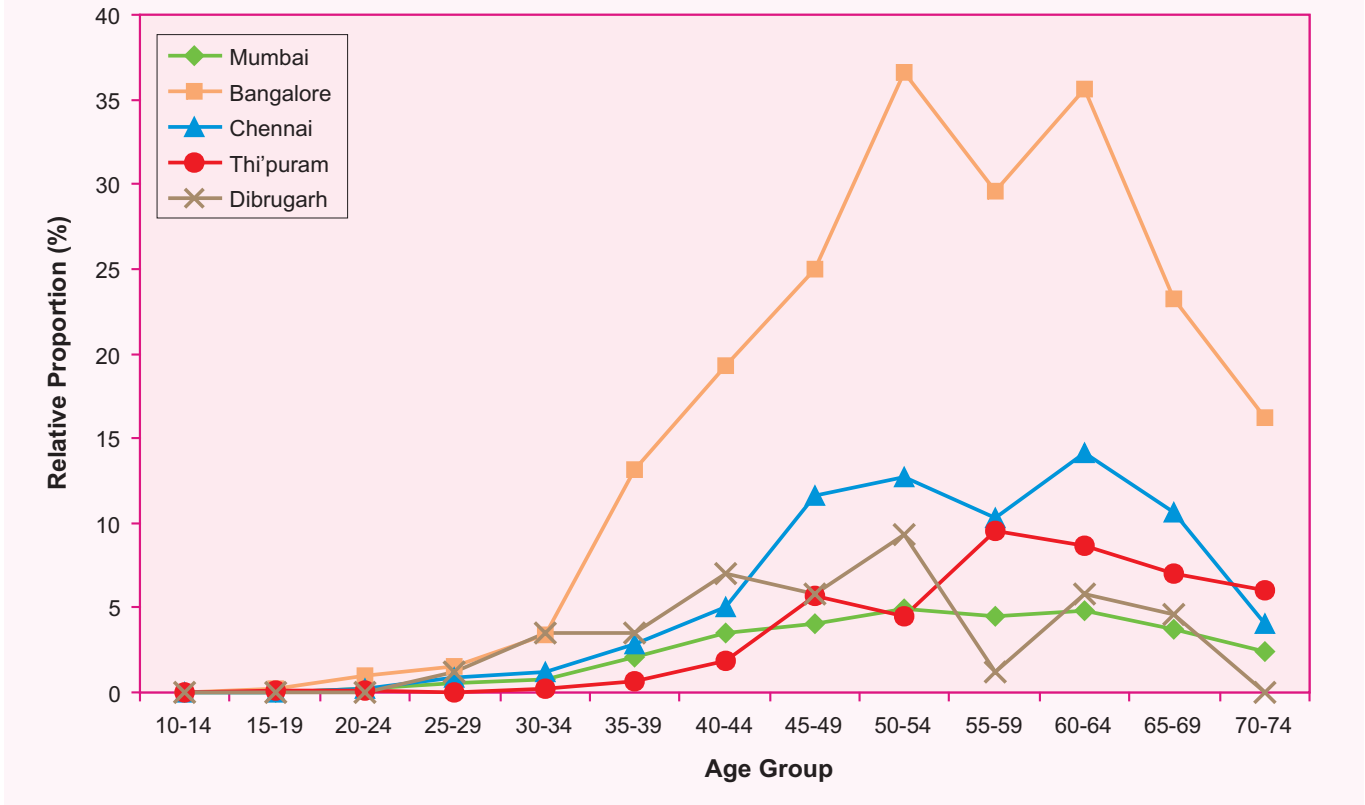
| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5- 9 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10-14 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 15-19 | 1 | 0.2 | 1 | 0.1 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 |
| 20-24 | 4 | 0.6 | 4 | 0.5 | 1 | 0.2 | 1 | 0.3 | 0 | 0.0 |
| 25-29 | 10 | 1.5 | 6 | 0.7 | 5 | 1.1 | 0 | 0.0 | 1 | 1.2 |
| 30-34 | 16 | 2.4 | 13 | 1.6 | 6 | 1.4 | 2 | 0.5 | 3 | 3.5 |
| 35-39 | 42 | 6.4 | 49 | 5.9 | 17 | 3.9 | 5 | 1.3 | 3 | 3.5 |
| 40-44 | 70 | 10.7 | 74 | 8.9 | 29 | 6.6 | 14 | 3.6 | 6 | 7.0 |
| 45-49 | 81 | 12.3 | 94 | 11.3 | 63 | 14.3 | 43 | 11.2 | 5 | 5.8 |
| 50-54 | 99 | 15.1 | 142 | 17.0 | 74 | 16.8 | 33 | 8.6 | 8 | 9.3 |
| 55-59 | 90 | 13.7 | 112 | 13.4 | 57 | 12.9 | 71 | 18.5 | 1 | 1.2 |
| 60-64 | 95 | 14.5 | 136 | 16.3 | 80 | 18.1 | 64 | 16.7 | 5 | 5.8 |
| 65-69 | 73 | 11.1 | 88 | 10.6 | 60 | 13.6 | 53 | 13.8 | 4 | 4.7 |
| 70-74 | 47 | 7.2 | 61 | 7.3 | 24 | 5.4 | 46 | 12.0 | 0 | 0.0 |
| 75+ | 27 | 4.1 | 52 | 6.2 | 25 | 5.7 | 51 | 13.3 | 1 | 1.2 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Ages** | **656** | **100.0** | **833** | **100.0** | **441** | **100.0** | **384** | **100.0** | **37** | **43.0** |
| **Mean** | 53.5 | | 54.4 | | 55.2 | | 60.7 | | 48.7 | |
| **SD** | 12.28 | | 12.22 | | 11.42 | | 11.53 | | 12.61 | |

## Fig. 8.2: Five year age group distribution - Mouth Cancers (1999-2000)

### Males




### Females



## Table 8.3: Number(#) and Relative Proportion(%) of Mouth cancers based on different methods of diagnosis (1999-2000)

| Registry | Microscopic | | Clinical | | X-ray | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | |
| Mumbai | 1877 | 94.5 | 2 | 0.1 | 0 | 0.0 | 107 | 5.4 | 1986 | 100.0 |
| Bangalore | 351 | 95.4 | 11 | 3.0 | 0 | 0.0 | 6 | 1.6 | 368 | 100.0 |
| Chennai | 316 | 58.1 | 227 | 41.7 | 0 | 0.0 | 1 | 0.2 | 544 | 100.0 |
| Thi'puram | 683 | 93.1 | 47 | 6.4 | 0 | 0.0 | 4 | 0.5 | 734 | 100.0 |
| Dibrugarh | 86 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 86 | 100.0 |
| **Females** | | | | | | | | | | |
| Mumbai | 634 | 96.6 | 1 | 0.2 | 0 | 0.0 | 21 | 3.2 | 656 | 100.0 |
| Bangalore | 809 | 97.1 | 19 | 2.3 | 1 | 0.1 | 4 | 0.5 | 833 | 100.0 |
| Chennai | 269 | 61.0 | 172 | 39.0 | 0 | 0.0 | 0 | 0.0 | 441 | 100.0 |
| Thi'puram | 353 | 91.9 | 30 | 7.8 | 0 | 0.0 | 1 | 0.3 | 384 | 100.0 |
| Dibrugarh | 37 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 37 | 100.0 |

## Table 8.4: Number(#) and Relative Proportion(%) of Mouth cancer patients according to the clinical extent of disease (Excludes Patients Previously Treated) (1999-2000)

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | | | |
| Mumbai | 512 | 30.8 | 1038 | 62.4 | 1550 | 93.1 | 114 | 6.9 | 0 | 0.0 | 1664 | 100.0 |
| Bangalore | 28 | 8.1 | 295 | 85.0 | 323 | 93.1 | 20 | 5.8 | 4 | 1.2 | 347 | 100.0 |
| Chennai | 52 | 11.3 | 408 | 88.3 | 460 | 99.6 | 2 | 0.4 | 0 | 0.0 | 462 | 100.0 |
| Thi'puram | 90 | 13.5 | 566 | 85.0 | 656 | 98.5 | 10 | 1.5 | 0 | 0.0 | 666 | 100.0 |
| Dibrugarh | 14 | 17.5 | 62 | 77.5 | 76 | 95.0 | 3 | 3.8 | 1 | 1.3 | 80 | 100.0 |
| **Females** | | | | | | | | | | | | |
| Mumbai | 191 | 31.7 | 373 | 62.0 | 564 | 93.7 | 38 | 6.3 | 0 | 0.0 | 602 | 100.0 |
| Bangalore | 46 | 5.7 | 692 | 85.2 | 738 | 90.9 | 60 | 7.4 | 14 | 1.7 | 812 | 100.0 |
| Chennai | 32 | 8.2 | 359 | 91.6 | 391 | 99.7 | 1 | 0.3 | 0 | 0.0 | 392 | 100.0 |
| Thi'puram | 49 | 13.8 | 299 | 84.0 | 348 | 97.8 | 8 | 2.2 | 0 | 0.0 | 356 | 100.0 |
| Dibrugarh | 10 | 27.0 | 26 | 70.3 | 36 | 97.3 | 1 | 2.7 | 0 | 0.0 | 37 | 100.0 |

## Table 8.5: Number(#) and Relative Proportion(%) of Mouth cancer patients according to Broad Groups of Treatment(Tmt) (1999-2000)

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Prior Tmt. Only | 214 | 10.8 | 18 | 4.9 | 76 | 14.0 | 22 | 3.0 | 0 | 0.0 |
| Prior & Tmt. at RI | 108 | 5.4 | 3 | 0.8 | 6 | 1.1 | 46 | 6.3 | 6 | 7.0 |
| Tmt. Only at RI | 820 | 41.3 | 175 | 47.6 | 219 | 40.3 | 555 | 75.6 | 73 | 84.9 |
| No Treatment | 844 | 42.5 | 172 | 46.7 | 243 | 44.7 | 111 | 15.1 | 7 | 8.1 |
| **Total Patients** | **1986** | **100.0** | **368** | **100.0** | **544** | **100.0** | **734** | **100.0** | **86** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Prior Tmt. Only | 33 | 5.0 | 16 | 1.9 | 45 | 10.2 | 9 | 2.3 | 0 | 0.0 |
| Prior & Tmt. at RI | 21 | 3.2 | 5 | 0.6 | 4 | 0.9 | 19 | 4.9 | 0 | 0.0 |
| Tmt. Only at RI | 328 | 50.0 | 410 | 49.2 | 201 | 45.6 | 304 | 79.2 | 35 | 94.6 |
| No Treatment | 274 | 41.8 | 402 | 48.3 | 191 | 43.3 | 52 | 13.5 | 2 | 5.4 |
| **Total Patients** | **656** | **100.0** | **833** | **100.0** | **441** | **100.0** | **384** | **100.0** | **37** | **100.0** |

## Table 8.6: Number(#) and Relative Proportion(%) of Mouth cancer patients according to Type of Treatment given (Patients treated only at Reporting Institution) (1999-2000)

### Males

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **820** | **100.0** | **175** | **100.0** | **219** | **100.0** | **555** | **100.0** | **73** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 327 | 39.9 | 19 | 10.9 | 3 | 1.4 | 19 | 3.4 | 5 | 6.8 |
| Radiotherapy(R) | 63 | 7.7 | 76 | 43.4 | 171 | 78.1 | 336 | 60.5 | 59 | 80.8 |
| Chemotherapy(C) | 45 | 5.5 | 29 | 16.6 | 0 | 0.0 | 11 | 2.0 | 1 | 1.4 |
| S + R | 335 | 40.9 | 32 | 18.3 | 34 | 15.5 | 82 | 14.8 | 6 | 8.2 |
| S + C | 9 | 1.1 | 1 | 0.6 | 0 | 0.0 | 3 | 0.5 | 0 | 0.0 |
| R + C | 23 | 2.8 | 11 | 6.3 | 11 | 5.0 | 79 | 14.2 | 2 | 2.7 |
| S + R + C | 18 | 2.2 | 6 | 3.4 | 0 | 0.0 | 12 | 2.2 | 0 | 0.0 |
| Others | 0.0 | 0 | 1.0 | 0.6 | 0.0 | 0 | 13.0 | 2.3 | 0.0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 435 | 53.0 | 124 | 70.9 | 174 | 79.5 | 366 | 65.9 | 65 | 89.0 |
| Combination | 385 | 47.0 | 50 | 28.6 | 45 | 20.5 | 176 | 31.7 | 8 | 11.0 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 689 | 84.0 | 58 | 33.1 | 37 | 16.9 | 116 | 20.9 | 11 | 15.1 |
| Any R | 439 | 53.5 | 125 | 71.4 | 216 | 98.6 | 509 | 91.7 | 67 | 91.8 |
| Any C | 95 | 11.6 | 47 | 26.9 | 11 | 5.0 | 105 | 18.9 | 3 | 4.1 |

### Females

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **328** | **100.0** | **410** | **100.0** | **201** | **100.0** | **304** | **100.0** | **35** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 178 | 54.3 | 44 | 10.7 | 4 | 2.0 | 17 | 5.6 | 2 | 5.7 |
| Radiotherapy(R) | 7 | 2.1 | 108 | 26.3 | 170 | 84.6 | 193 | 63.5 | 27 | 77.1 |
| Chemotherapy(C) | 17 | 5.2 | 108 | 26.3 | 0 | 0.0 | 5 | 1.6 | 0 | 0.0 |
| S + R | 118 | 36.0 | 108 | 26.3 | 24 | 11.9 | 46 | 15.1 | 6 | 17.1 |
| S + C | 3 | 0.9 | 5 | 1.2 | 0 | 0.0 | 2 | 0.7 | 0 | 0.0 |
| R + C | 3 | 0.9 | 23 | 5.6 | 3 | 1.5 | 26 | 8.6 | 0 | 0.0 |
| S + R + C | 2 | 0.6 | 13 | 3.2 | 0 | 0.0 | 5 | 1.6 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 10 | 3.3 | 0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 202 | 61.6 | 260 | 63.4 | 174 | 86.6 | 215 | 70.7 | 29 | 82.9 |
| Combination | 126 | 38.4 | 149 | 36.3 | 27 | 13.4 | 79 | 26.0 | 6 | 17.1 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 301 | 91.8 | 170 | 41.5 | 28 | 13.9 | 70 | 23.0 | 8 | 22.9 |
| Any R | 130 | 39.6 | 252 | 61.5 | 197 | 98.0 | 270 | 88.8 | 33 | 94.3 |
| Any C | 25 | 7.6 | 149 | 36.3 | 3 | 1.5 | 38 | 12.5 | 0 | 0.0 |

## Table 8.7(a): Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Mouth - Males (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 145 | 64.4 | 8 | 40.0 | 3 | 6.7 | 5 | 7.0 | 1 | 7.7 |
| Radiotherapy(R) | 21 | 9.3 | 5 | 25.0 | 34 | 75.6 | 53 | 74.6 | 11 | 84.6 |
| Chemotherapy(C) | 1 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + R | 52 | 23.1 | 4 | 20.0 | 8 | 17.8 | 7 | 9.9 | 1 | 7.7 |
| S + C | 2 | 0.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 2 | 0.9 | 2 | 10.0 | 0 | 0.0 | 5 | 7.0 | 0 | 0.0 |
| S + R + C | 2 | 0.9 | 1 | 5.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 1.4 | 0 | 0.0 |
| ALL TREATMENTS | 225 | 100.0 | 20 | 100.0 | 45 | 100.0 | 71 | 100.0 | 13 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 180 | 31.3 | 10 | 6.7 | 0 | 0.0 | 14 | 2.9 | 3 | 5.4 |
| Radiotherapy(R) | 40 | 7.0 | 69 | 46.3 | 136 | 78.6 | 281 | 58.9 | 47 | 83.9 |
| Chemotherapy(C) | 35 | 6.1 | 26 | 17.4 | 0 | 0.0 | 10 | 2.1 | 0 | 0.0 |
| S + R | 281 | 48.9 | 28 | 18.8 | 26 | 15.0 | 75 | 15.7 | 4 | 7.1 |
| S + C | 6 | 1.0 | 1 | 0.7 | 0 | 0.0 | 2 | 0.4 | 0 | 0.0 |
| R + C | 17 | 3.0 | 9 | 6.0 | 11 | 6.4 | 73 | 15.3 | 2 | 3.6 |
| S + R + C | 16 | 2.8 | 5 | 3.4 | 0 | 0.0 | 11 | 2.3 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.7 | 0 | 0.0 | 11 | 2.3 | 0 | 0.0 |
| ALL TREATMENTS | 575 | 100.0 | 149 | 100.0 | 173 | 100.0 | 477 | 100.0 | 56 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 2 | 10.0 | 1 | 16.7 | 0 | 0.0 | 0 | 0.0 | 1 | 33.3 |
| Radiotherapy(R) | 2 | 10.0 | 2 | 33.3 | 1 | 100.0 | 2 | 28.6 | 1 | 33.3 |
| Chemotherapy(C) | 9 | 45.0 | 3 | 50.0 | 0 | 0.0 | 1 | 14.3 | 0 | 0.0 |
| S + R | 2 | 10.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 33.3 |
| S + C | 1 | 5.0 | 0 | 0.0 | 0 | 0.0 | 1 | 14.3 | 0 | 0.0 |
| R + C | 4 | 20.0 | 0 | 0.0 | 0 | 0.0 | 1 | 14.3 | 0 | 0.0 |
| S + R + C | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 14.3 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 14.3 | 0 | 0.0 |
| ALL TREATMENTS | 20 | 100.0 | 6 | 100.0 | 1 | 100.0 | 7 | 100.0 | 3 | 100.0 |

## Table 8.7(b): Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Mouth - Females (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 77 | 76.2 | 8 | 21.1 | 1 | 4.0 | 5 | 10.9 | 1 | 10.0 |
| Radiotherapy(R) | 2 | 2.0 | 13 | 34.2 | 18 | 72.0 | 34 | 73.9 | 8 | 80.0 |
| Chemotherapy(C) | 1 | 1.0 | 2 | 5.3 | 0 | 0.0 | 1 | 2.2 | 0 | 0.0 |
| S + R | 20 | 19.8 | 15 | 39.5 | 6 | 24.0 | 4 | 8.7 | 1 | 10.0 |
| S + C | 1 | 1.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 4.3 | 0 | 0.0 |
| S + R + C | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| ALL TREATMENTS | 101 | 100.0 | 38 | 100.0 | 25 | 100.0 | 46 | 100.0 | 10 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 99 | 45.4 | 34 | 9.7 | 3 | 1.7 | 12 | 4.8 | 1 | 4.2 |
| Radiotherapy(R) | 3 | 1.4 | 91 | 26.1 | 152 | 86.4 | 156 | 62.2 | 18 | 75.0 |
| Chemotherapy(C) | 13 | 6.0 | 95 | 27.2 | 0 | 0.0 | 3 | 1.2 | 0 | 0.0 |
| S + R | 97 | 44.5 | 91 | 26.1 | 18 | 10.2 | 42 | 16.7 | 5 | 20.8 |
| S + C | 2 | 0.9 | 4 | 1.1 | 0 | 0.0 | 2 | 0.8 | 0 | 0.0 |
| R + C | 3 | 1.4 | 22 | 6.3 | 3 | 1.7 | 24 | 9.6 | 0 | 0.0 |
| S + R + C | 1 | 0.5 | 12 | 3.4 | 0 | 0.0 | 5 | 2.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 7 | 2.8 | 0 | 0.0 |
| ALL TREATMENTS | 218 | 100.0 | 349 | 100.0 | 176 | 100.0 | 251 | 100.0 | 24 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 2 | 22.2 | 2 | 9.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 2 | 22.2 | 4 | 19.0 | 0 | 0.0 | 3 | 42.9 | 1 | 100.0 |
| Chemotherapy(C) | 3 | 33.3 | 11 | 52.4 | 0 | 0.0 | 1 | 14.3 | 0 | 0.0 |
| S + R | 1 | 11.1 | 1 | 4.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 0 | 0.0 | 1 | 4.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + R + C | 1 | 11.1 | 1 | 4.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 4.8 | 0 | 0.0 | 3 | 42.9 | 0 | 0.0 |
| ALL TREATMENTS | 9 | 100.0 | 21 | 100.0 | 0.001 | 0.0 | 7 | 100.0 | 1 | 100.0 |

## Table 8.8a): Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Mouth - Males (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 201 | 89.3 | 77 | 34.2 | 7 | 3.1 | 0 | 0.0 | 225 |
| **Bangalore** | 13 | 65.0 | 12 | 60.0 | 3 | 15.0 | 0 | 0.0 | 20 |
| **Chennai** | 11 | 24.4 | 42 | 93.3 | 0 | 0.0 | 0 | 0.0 | 45 |
| **Thi'puram** | 12 | 16.9 | 65 | 91.5 | 5 | 7.0 | 1 | 1.4 | 71 |
| **Dibrugarh** | 2 | 15.4 | 12 | 92.3 | 0 | 0.0 | 0 | 0.0 | 13 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 483 | 84.0 | 354 | 61.6 | 74 | 12.9 | 0 | 0.0 | 575 |
| **Bangalore** | 44 | 29.5 | 111 | 74.5 | 41 | 27.5 | 1 | 0.7 | 149 |
| **Chennai** | 26 | 15.0 | 173 | 100.0 | 11 | 6.4 | 0 | 0.0 | 173 |
| **Thi'puram** | 102 | 21.4 | 440 | 92.2 | 96 | 20.1 | 11 | 2.3 | 477 |
| **Dibrugarh** | 7 | 12.5 | 53 | 94.6 | 2 | 3.6 | 0 | 0.0 | 56 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 5 | 25.0 | 8 | 40.0 | 14 | 70.0 | 0 | 0.0 | 20 |
| **Bangalore** | 1 | 16.7 | 2 | 33.3 | 3 | 50.0 | 0 | 0.0 | 6 |
| **Chennai** | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 0 | 0.0 | 1 |
| **Thi'puram** | 2 | 28.6 | 4 | 57.1 | 4 | 57.1 | 1 | 14.3 | 7 |
| **Dibrugarh** | 2 | 66.7 | 2 | 66.7 | 0 | 0.0 | 0 | 0.0 | 3 |

## Table 8.8(b): Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Mouth - Females (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 98 | 97.0 | 22 | 21.8 | 2 | 2.0 | 0 | 0.0 | 101 |
| **Bangalore** | 23 | 60.5 | 28 | 73.7 | 2 | 5.3 | 0 | 0.0 | 38 |
| **Chennai** | 7 | 28.0 | 24 | 96.0 | 0 | 0.0 | 0 | 0.0 | 25 |
| **Thi'puram** | 9 | 19.6 | 40 | 87.0 | 3 | 6.5 | 0 | 0.0 | 46 |
| **Dibrugarh** | 2 | 20.0 | 9 | 90.0 | 0 | 0.0 | 0 | 0.0 | 10 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 199 | 91.3 | 104 | 47.7 | 19 | 8.7 | 0 | 0.0 | 218 |
| **Bangalore** | 141 | 40.4 | 216 | 61.9 | 133 | 38.1 | 0 | 0.0 | 349 |
| **Chennai** | 21 | 11.9 | 173 | 98.3 | 3 | 1.7 | 0 | 0.0 | 176 |
| **Thi'puram** | 61 | 24.3 | 227 | 90.4 | 34 | 13.5 | 7 | 2.8 | 251 |
| **Dibrugarh** | 6 | 25.0 | 23 | 95.8 | 0 | 0.0 | 0 | 0.0 | 24 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 4 | 44.4 | 4 | 44.4 | 4 | 44.4 | 0 | 0.0 | 9 |
| **Bangalore** | 5 | 23.8 | 6 | 28.6 | 13 | 61.9 | 1 | 4.8 | 21 |
| **Chennai** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| **Thi'puram** | 0 | 0.0 | 3 | 42.9 | 1 | 14.3 | 3 | 42.9 | 7 |
| **Dibrugarh** | 0 | 0.0 | 1 | 100.0 | 0 | 0.0 | 0 | 0.0 | 1 |

# Chapter 9

## TONGUE (ICD-10: C01-C02)

The total number, relative proportion and rank of cancer of tongue in males and females for the years 1999 and 2000 is given in Table 9.1(a). Cancer of the tongue was among the five leading sites in all registries except Bangalore where it was the sixth leading site.

Table 9.1(b) gives the number and relative proportion of tongue cancer according to sub-site. Mumbai and Chennai show almost equal distribution of base tongue and rest of tongue cancers. Bangalore and Dibrugarh had a higher proportion of base tongue cancer, whereas Thiruvananthapuram had relatively lower proportion of base tongue cancer.

Figure 9.1 gives the trends in actual number of tongue cancers from 1984 to 2000. A significant increase in the numbers was seen in Chennai and Thiruvananthapuram and a decrease was seen in Dibrugarh.

Figure 9.2 and Table 9.2 show the distribution of tongue cancers by five year age group. The predominant form of diagnosis of tongue cancer was through microscopic examination (Table 9.3).

Tale 9.4 gives the distribution of tongue cancer according to the clinical extent of disease. The regional spread of the disease varied from 59.6% in Mumbai to 87.2% in Chennai.

Table 9.5 gives the relative proportion of tongue cancer according to the broad groups of treatment.

Tables 9.6, 9.7 and 9.8 give the picture of the different types of treatment given to these patients.

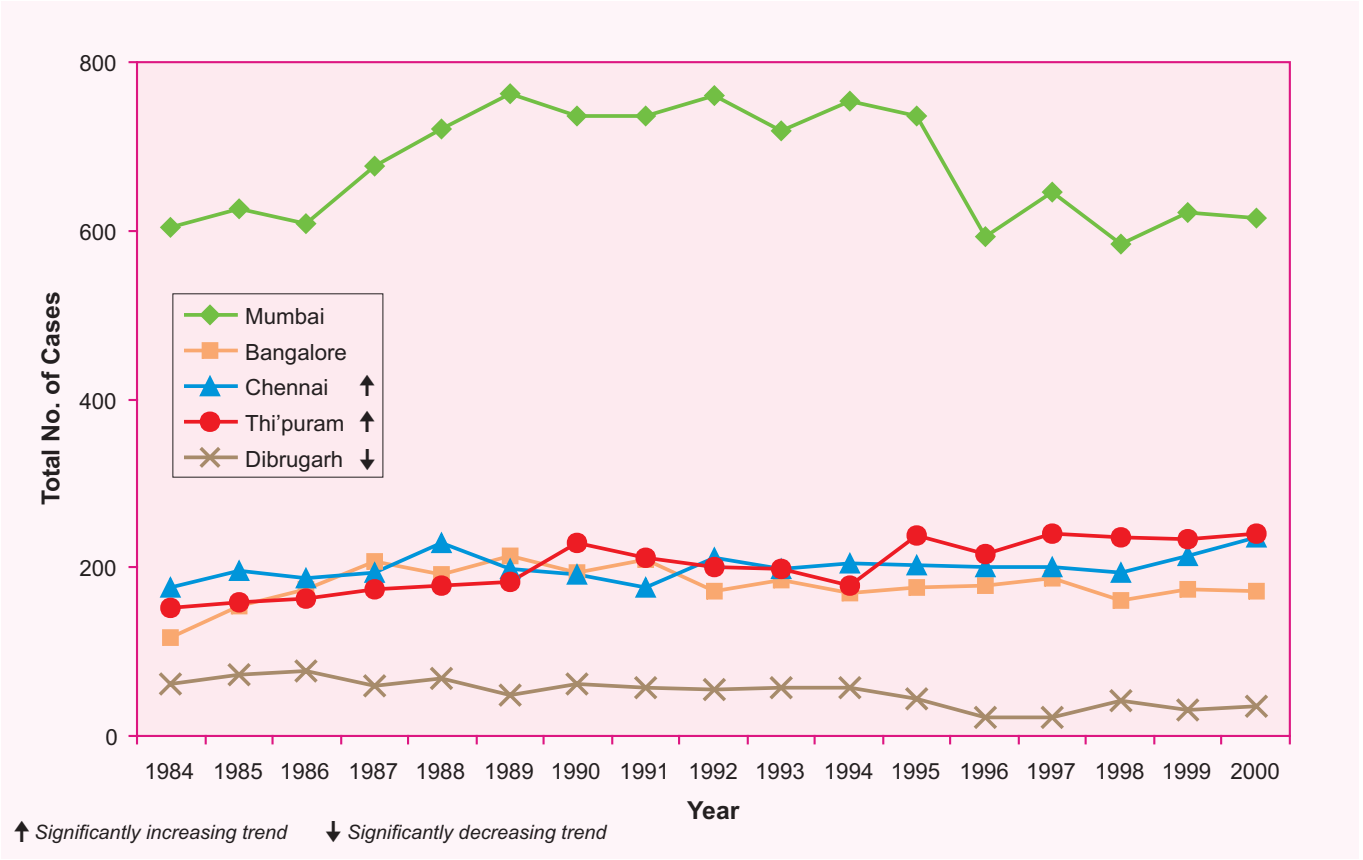
**Table 9.1(a): Number(#), Relative Proportion(%) and Rank(R) of cancers of the Tongue - Males (1999-2000)**

| Registry | Total | # | % | R |
|---|---|---|---|---|
| **Mumbai** | 17637 | 1236 | 7.0 | 3 |
| **Bangalore** | 6106 | 346 | 5.7 | 6 |
| **Chennai** | 6195 | 450 | 7.3 | 4 |
| **Thi'puram** | 7859 | 473 | 6.0 | 3 |
| **Dibrugarh** | 997 | 67 | 6.7 | 4 |

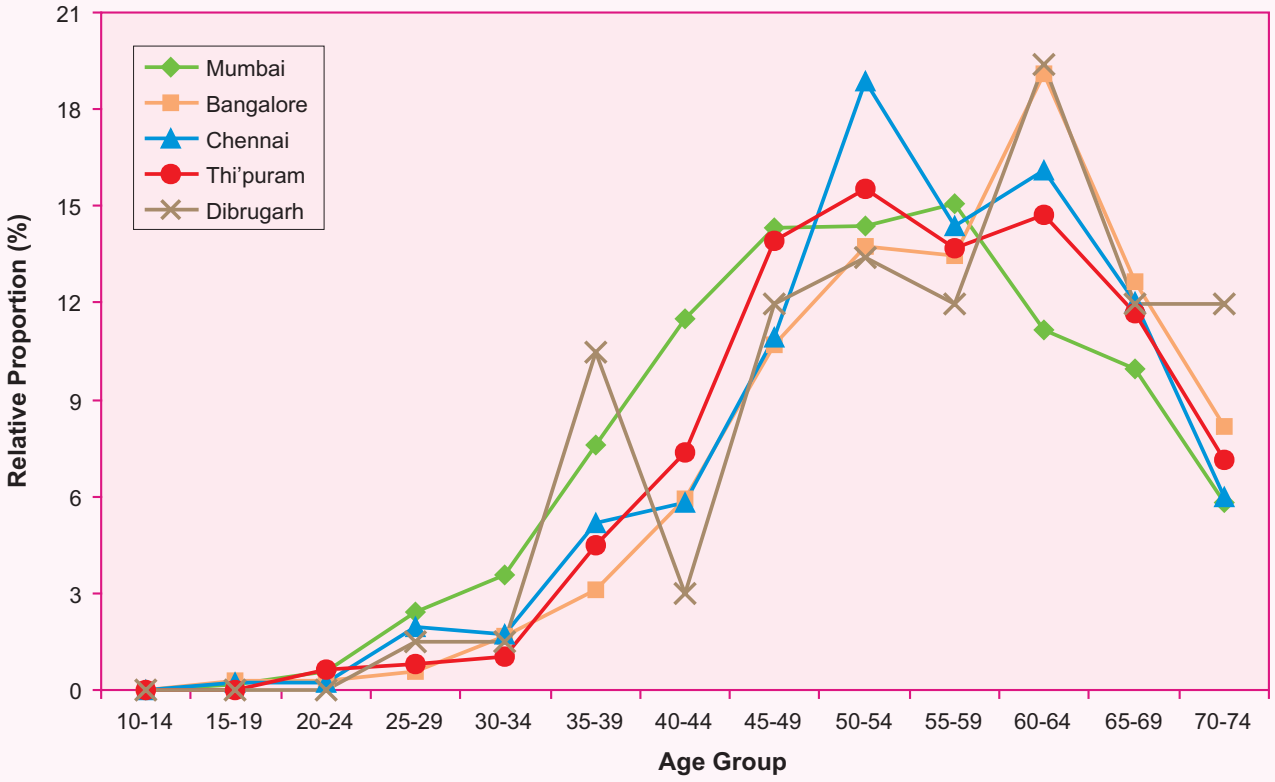
## Table 9.1(b) : Number(#) and Relative Proportion(%) of Tongue Cancer patients according to sub-site - Males (1999-2000)

| | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Base of tongue | 509 | 41.2 | 238 | 68.8 | 201 | 44.7 | 89 | 18.8 | 53 | 79.1 |
| Rest of tongue | 604 | 48.9 | 31 | 9.0 | 227 | 50.4 | 233 | 49.3 | 8 | 11.9 |
| NOS | 123 | 10.0 | 77 | 22.3 | 22 | 4.9 | 151 | 31.9 | 6 | 9.0 |
| **Total tongue** | **1236** | **100.0** | **346** | **100.0** | **450** | **100.0** | **473** | **100.0** | **67** | **100.0** |

## Fig. 9.1: Trends in Actual Numbers - Tongue Cancer - Males



## Fig. 9.2: Five year age group distribution - Tongue Cancer - Males (1999-2000)




## Table 9.2: Number(#) and Relative Proportion(%) of Tongue cancer according to five year age group - Males (1999-2000)

| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1.0 | 1.5 |
| 5- 9 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0.0 | 0.0 |
| 10-14 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| 15-19 | 2 | 0.2 | 1 | 0.3 | 1 | 0.2 | 0 | 0.0 | 0.0 | 0.0 |
| 20-24 | 7 | 0.6 | 1 | 0.3 | 1 | 0.2 | 3 | 0.6 | 0.0 | 0.0 |
| 25-29 | 30 | 2.4 | 1 | 0.3 | 8 | 1.8 | 4 | 0.8 | 1.0 | 1.5 |
| 30-34 | 44 | 3.6 | 6 | 1.7 | 7 | 1.6 | 4 | 0.8 | 1.0 | 1.5 |
| 35-39 | 94 | 7.6 | 11 | 3.2 | 24 | 5.3 | 19 | 4.0 | 7.0 | 10.4 |
| 40-44 | 142 | 11.5 | 20 | 5.8 | 27 | 6.0 | 34 | 7.2 | 2.0 | 3.0 |
| 45-49 | 177 | 14.3 | 38 | 11.0 | 47 | 10.4 | 67 | 14.2 | 8.0 | 11.9 |
| 50-54 | 178 | 14.4 | 47 | 13.6 | 86 | 19.1 | 73 | 15.4 | 9.0 | 13.4 |
| 55-59 | 186 | 15.0 | 47 | 13.6 | 67 | 14.9 | 65 | 13.7 | 8.0 | 11.9 |
| 60-64 | 138 | 11.2 | 68 | 19.7 | 72 | 16.0 | 69 | 14.6 | 13.0 | 19.4 |
| 65-69 | 123 | 10.0 | 44 | 12.7 | 53 | 11.8 | 56 | 11.8 | 8.0 | 11.9 |
| 70-74 | 72 | 5.8 | 27 | 7.8 | 27 | 6.0 | 35 | 7.4 | 8.0 | 11.9 |
| 75+ | 43 | 3.5 | 35 | 10.1 | 29 | 6.4 | 44 | 9.3 | 1.0 | 1.5 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| **All Ages** | **1236** | **100.0** | **346** | **100.0** | **450** | **100.0** | **473** | **100.0** | **67** | **100.0** |
| **Mean** | 52.3 | | 57.4 | | 55.3 | | 57.0 | | 54.1 | |
| **SD** | 12.27 | | 11.88 | | 12.05 | | 12.14 | | 13.44 | |

## Table 9.3: Number(#) and Relative Proportion(%) of Tongue cancers based on different methods of diagnosis - Males (1999-2000)

| Registry | Microscopic | | Clinical | | X-ray | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 1155 | 93.4 | 1 | 0.1 | 0 | 0.0 | 80 | 6.5 | 1236 | 100.0 |
| Bangalore | 327 | 94.5 | 10 | 2.9 | 0 | 0.0 | 9 | 2.6 | 346 | 100.0 |
| Chennai | 290 | 64.4 | 160 | 35.6 | 0 | 0.0 | 0 | 0.0 | 450 | 100.0 |
| Thi'puram | 455 | 96.2 | 17 | 3.6 | 0 | 0.0 | 1 | 0.2 | 473 | 100.0 |
| Dibrugarh | 66 | 98.5 | 0 | 0.0 | 0 | 0.0 | 1 | 1.5 | 67 | 100.0 |

## Table 9.4: Number(#) and Relative Proportion(%) of Tongue cancer patients according to the clinical extent of disease (Excludes Patients Previously Treated) (1999-2000)

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 365 | 35.0 | 621 | 59.6 | 986 | 94.6 | 56 | 5.4 | 0 | 0.0 | 1042 | 100.0 |
| Bangalore | 29 | 8.8 | 268 | 81.5 | 297 | 90.3 | 29 | 8.8 | 3 | 0.9 | 329 | 100.0 |
| Chennai | 47 | 12.3 | 334 | 87.2 | 381 | 99.5 | 2 | 0.5 | 0 | 0.0 | 383 | 100.0 |
| Thi'puram | 74 | 17.4 | 332 | 78.1 | 406 | 95.5 | 19 | 4.5 | 0 | 0.0 | 425 | 100.0 |
| Dibrugarh | 8 | 12.1 | 57 | 86.4 | 65 | 98.5 | 0 | 0.0 | 1 | 1.5 | 66 | 100.0 |

## Table 9.5: Number(#) and Relative Proportion(%) of Tongue cancer patients according to Broad Groups of Treatment(Tmt) - Males (1999-2000)

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Prior Tmt. Only | 133 | 10.8 | 14 | 4.0 | 62 | 13.8 | 15 | 3.2 | 0 | 0.0 |
| Prior & Tmt. at RI | 61 | 4.9 | 3 | 0.9 | 5 | 1.1 | 33 | 7.0 | 1 | 1.5 |
| Tmt. Only at RI | 491 | 39.7 | 155 | 44.8 | 179 | 39.8 | 345 | 72.9 | 63 | 94.0 |
| No Treatment | 551 | 44.6 | 174 | 50.3 | 204 | 45.3 | 80 | 16.9 | 3 | 4.5 |
| **Total Patients** | **1236** | **100.0** | **346** | **100.0** | **450** | **100.0** | **473** | **100.0** | **67** | **100.0** |

## Table 9.6: Number(#) and Relative Proportion(%) of Tongue cancer patients according to Type of Treatment given (Patients treated only at Reporting Institution) - Males (1999-2000)

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **491** | **100.0** | **155** | **100.0** | **179** | **100.0** | **345** | **100.0** | **63** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 176 | 35.8 | 14 | 9.0 | 0 | 0.0 | 36 | 10.4 | 0 | 0.0 |
| Radiotherapy(R) | 136 | 27.7 | 102 | 65.8 | 142 | 79.3 | 115 | 33.3 | 58 | 92.1 |
| Chemotherapy(C) | 19 | 3.9 | 5 | 3.2 | 0 | 0.0 | 38 | 11.0 | 1 | 1.6 |
| S + R | 110 | 22.4 | 18 | 11.6 | 32 | 17.9 | 58 | 16.8 | 1 | 1.6 |
| S + C | 1 | 0.2 | 1 | 0.6 | 0 | 0.0 | 4 | 1.2 | 0 | 0.0 |
| R + C | 40 | 8.1 | 13 | 8.4 | 4 | 2.2 | 71 | 20.6 | 3 | 4.8 |
| S + R + C | 9 | 1.8 | 1 | 0.6 | 1 | 0.6 | 18 | 5.2 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.6 | 0 | 0.0 | 5 | 1.4 | 0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 331 | 67.4 | 121 | 78.1 | 142 | 79.3 | 189 | 54.8 | 59 | 93.7 |
| Combination | 160 | 32.6 | 33 | 21.3 | 37 | 20.7 | 151 | 43.8 | 4 | 6.3 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 296 | 60.3 | 34 | 21.9 | 33 | 18.4 | 116 | 33.6 | 1 | 1.6 |
| Any R | 295 | 60.1 | 134 | 86.5 | 179 | 100.0 | 262 | 75.9 | 62 | 98.4 |
| Any C | 69 | 14.1 | 20 | 12.9 | 5 | 2.8 | 131 | 38.0 | 4 | 6.3 |

## Table 9.7: Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Tongue - Males (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 116 | 64.1 | 7 | 50.0 | 0 | 0.0 | 18 | 25.7 | 0 | 0.0 |
| Radiotherapy(R) | 29 | 16.0 | 5 | 35.7 | 26 | 66.7 | 27 | 38.6 | 5 | 71.4 |
| Chemotherapy(C) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 2.9 | 0 | 0.0 |
| S + R | 29 | 16.0 | 2 | 14.3 | 13 | 33.3 | 12 | 17.1 | 1 | 14.3 |
| S + C | 1 | 0.6 | 0 | 0.0 | 0 | 0.0 | 1 | 1.4 | 0 | 0.0 |
| R + C | 4 | 2.2 | 0 | 0.0 | 0 | 0.0 | 10 | 14.3 | 1 | 14.3 |
| S + R + C | 2 | 1.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| ALL TREATMENTS | 181 | 100.0 | 14 | 100.0 | 39 | 100.0 | 70 | 100.0 | 7 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 60 | 20.1 | 6 | 4.5 | 0 | 0.0 | 18 | 6.8 | 0 | 0.0 |
| Radiotherapy(R) | 102 | 34.2 | 93 | 69.4 | 116 | 82.9 | 86 | 32.6 | 53 | 96.4 |
| Chemotherapy(C) | 15 | 5.0 | 4 | 3.0 | 0 | 0.0 | 32 | 12.1 | 0 | 0.0 |
| S + R | 81 | 27.2 | 16 | 11.9 | 19 | 13.6 | 46 | 17.4 | 0 | 0.0 |
| S + C | 0 | 0.0 | 1 | 0.7 | 0 | 0.0 | 3 | 1.1 | 0 | 0.0 |
| R + C | 33 | 11.1 | 12 | 9.0 | 4 | 2.9 | 58 | 22.0 | 2 | 3.6 |
| S + R + C | 7 | 2.3 | 1 | 0.7 | 1 | 0.7 | 18 | 6.8 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.7 | 0 | 0.0 | 3 | 1.1 | 0 | 0.0 |
| ALL TREATMENTS | 298 | 100.0 | 134 | 100.0 | 140 | 100.0 | 264 | 100.0 | 55 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 0 | 0.0 | 1 | 16.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 5 | 41.7 | 3 | 50.0 | 0 | 0.0 | 2 | 18.2 | 0 | 0.0 |
| Chemotherapy(C) | 4 | 33.3 | 1 | 16.7 | 0 | 0.0 | 4 | 36.4 | 0 | 0.0 |
| S + R | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 3 | 25.0 | 1 | 16.7 | 0 | 0.0 | 3 | 27.3 | 0 | 0.0 |
| S + R + C | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 18.2 | 0 | 0.0 |
| ALL TREATMENTS | 12 | 100.0 | 6 | 100.0 | 0.001 | 0.0 | 11 | 100.0 | 0.001 | 0.0 |

## Table 9.8: Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Tongue - Males (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 148 | 81.8 | 64 | 35.4 | 7 | 3.9 | 0 | 0.0 | 181 |
| **Bangalore** | 9 | 64.3 | 7 | 50.0 | 0 | 0.0 | 0 | 0.0 | 14 |
| **Chennai** | 13 | 33.3 | 39 | 100.0 | 0 | 0.0 | 0 | 0.0 | 39 |
| **Thi'puram** | 31 | 44.3 | 49 | 70.0 | 13 | 18.6 | 0 | 0.0 | 70 |
| **Dibrugarh** | 1 | 14.3 | 7 | 100.0 | 1 | 14.3 | 0 | 0.0 | 7 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 148 | 49.7 | 223 | 74.8 | 55 | 18.5 | 0 | 0.0 | 298 |
| **Bangalore** | 24 | 17.9 | 122 | 91.0 | 18 | 13.4 | 1 | 0.7 | 134 |
| **Chennai** | 20 | 14.3 | 140 | 100.0 | 5 | 3.6 | 0 | 0.0 | 140 |
| **Thi'puram** | 85 | 32.2 | 209 | 79.2 | 111 | 42.0 | 3 | 1.1 | 264 |
| **Dibrugarh** | 0 | 0.0 | 55 | 100.0 | 2 | 3.6 | 0 | 0.0 | 55 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 0 | 0.0 | 8 | 66.7 | 7 | 58.3 | 0 | 0.0 | 12 |
| **Bangalore** | 1 | 16.7 | 4 | 66.7 | 2 | 33.3 | 0 | 0.0 | 6 |
| **Chennai** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| **Thi'puram** | 0 | 0.0 | 5 | 45.5 | 7 | 63.6 | 2 | 18.2 | 11 |
| **Dibrugarh** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |

# Chapter 10

## OESOPHAGUS (ICD-10: C15)

The total number, relative proportion and rank of cancer of oesophagus in males and females for the years 1999 and 2000 is given in Table 10.1(a). Cancer of the oesophagus ranked as the leading site in Bangalore and was among the first five leading sites in all registries in both sexes, except in females in Thiruvananthapuram.

The sub-site distribution of oesophageal cancer is depicted in Table 10.1(b). All registries in both sexes had a lower proportion of cancers of the oesophagus in the upper third. In females the highest relative proportion was the middle third of the oesophagus, in all registries.

Figure 10.1 gives the trends in the actual number of oesophageal cancers in both males and females from 1984 to 2000. A significant increase in the numbers was observed in males and females in Thiruvananthapuram and in females in Chennai. A decline was seen in males and females in Dibrugarh.

Table 10.2 and Figure 10.2 give the distribution of cancer of oesophagus according to five year age group. In both males & females the mean age was higher in Thiruvananthapuram.

The predominant form of diagnosis was through microscopic examination (Table 10.3) though the category "others" which represents endoscopic diagnosis also showed a suggestive proportion.

Table 10.4 gives the distribution of cancers according to the clinical extent of disease.

Table 10.5 gives the number and relative proportion according to the broad groups of treatment. Tables 10.6 to 10.8 give the number and relative proportion according to the different types of treatment.

## Table 10.1(a) : Number(#), Relative Proportion(%) and Rank (R) of cancer of the Oesophagus (1999-2000)

| Registry | Males | | | | Females | | | |
|---|---|---|---|---|---|---|---|---|
| | Total | # | % | R | Total | # | % | R |
| **Mumbai** | 17637 | 998 | 5.7 | 4 | 13679 | 505 | 3.7 | 5 |
| **Bangalore** | 6106 | 587 | 9.6 | 1 | 7543 | 467 | 6.2 | 4 |
| **Chennai** | 6195 | 478 | 7.7 | 3 | 7139 | 263 | 3.7 | 4 |
| **Thi'puram** | 7859 | 412 | 5.2 | 5 | 7247 | 109 | 1.5 | >10 |
| **Dibrugarh** | 997 | 147 | 14.7 | 2 | 536 | 68 | 12.7 | 2 |

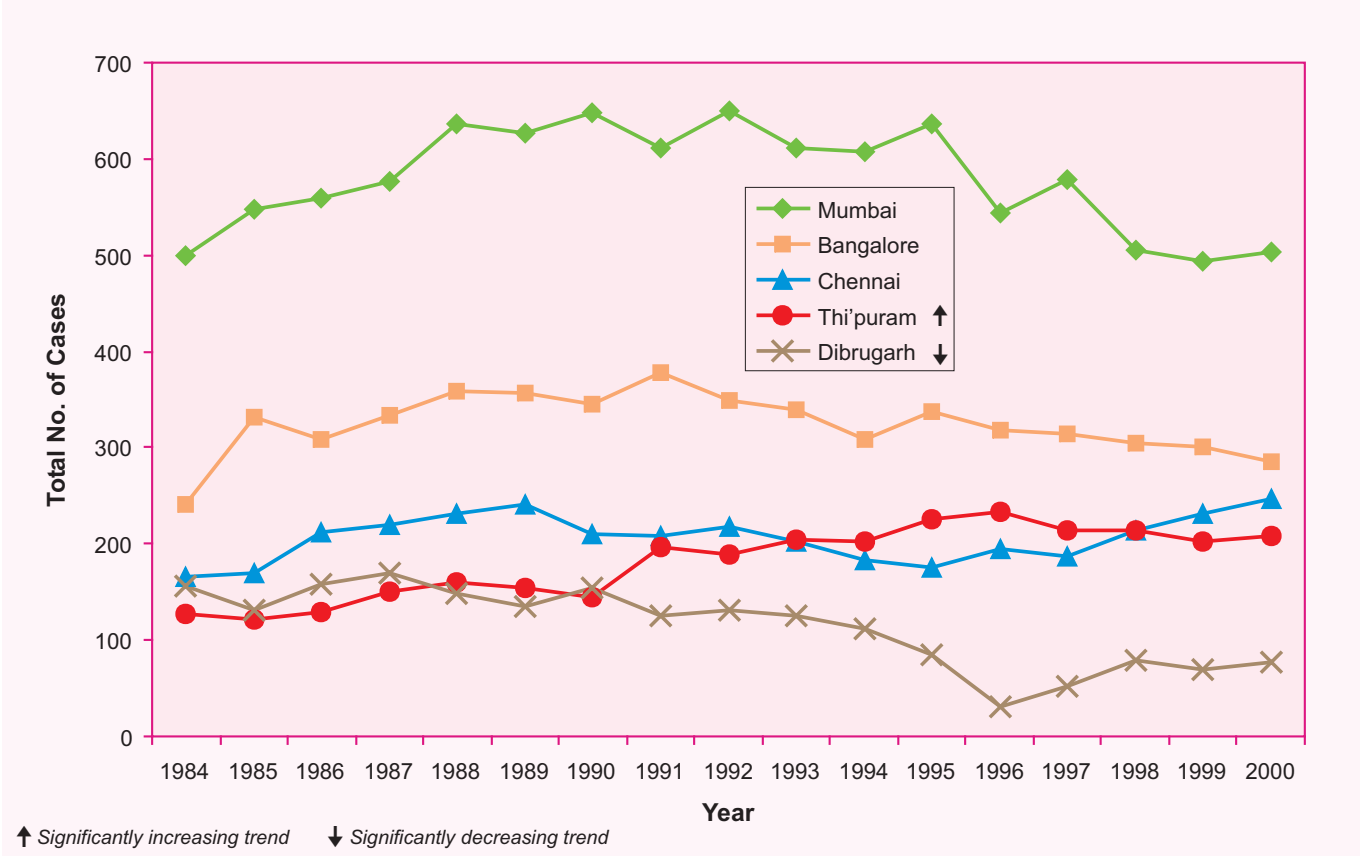
## Table 10.1(b) : Cancer of Oesophagus - Number(#) and Relative Proportion(%) according to sub-site (1999-2000)

| | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Cervical-upper 3rd | 134 | 13.4 | 48 | 8.2 | 67 | 14.0 | 50 | 12.2 | 14 | 9.5 |
| Thoracic-middle 3rd | 388 | 38.9 | 224 | 38.4 | 155 | 32.4 | 143 | 34.8 | 61 | 41.5 |
| Abdominal-lower 3rd | 303 | 30.4 | 129 | 22.1 | 158 | 33.1 | 134 | 32.6 | 42 | 28.6 |
| Overlap of subsite | 0 | 0.0 | 15 | 2.6 | 38 | 7.9 | 4 | 1.0 | 2 | 1.4 |
| NOS | 173 | 17.3 | 167 | 28.6 | 60 | 12.6 | 80 | 19.5 | 28 | 19.0 |
| **Total Oesophagus** | **998** | **100.0** | **583** | **100.0** | **478** | **100.0** | **411** | **100.0** | **147** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Cervical-upper 3rd | 67 | 13.3 | 46 | 9.9 | 26 | 9.9 | 11 | 10.1 | 7 | 10.3 |
| Thoracic-middle 3rd | 206 | 40.8 | 209 | 44.8 | 98 | 37.3 | 44 | 40.4 | 38 | 55.9 |
| Abdominal-lower 3rd | 144 | 28.5 | 75 | 16.1 | 91 | 34.6 | 26 | 23.9 | 20 | 29.4 |
| Overlap of subsite | 0 | 0.0 | 15 | 3.2 | 26 | 9.9 | 5 | 4.6 | 0 | 0.0 |
| NOS* | 88 | 17.4 | 122 | 26.1 | 22 | 8.4 | 23 | 21.1 | 3 | 4.4 |
| **Total Oesophagus** | **505** | **100.0** | **467** | **100.0** | **263** | **100.0** | **109** | **100.0** | **68** | **100.0** |

** NOS - Not otherwise specified*

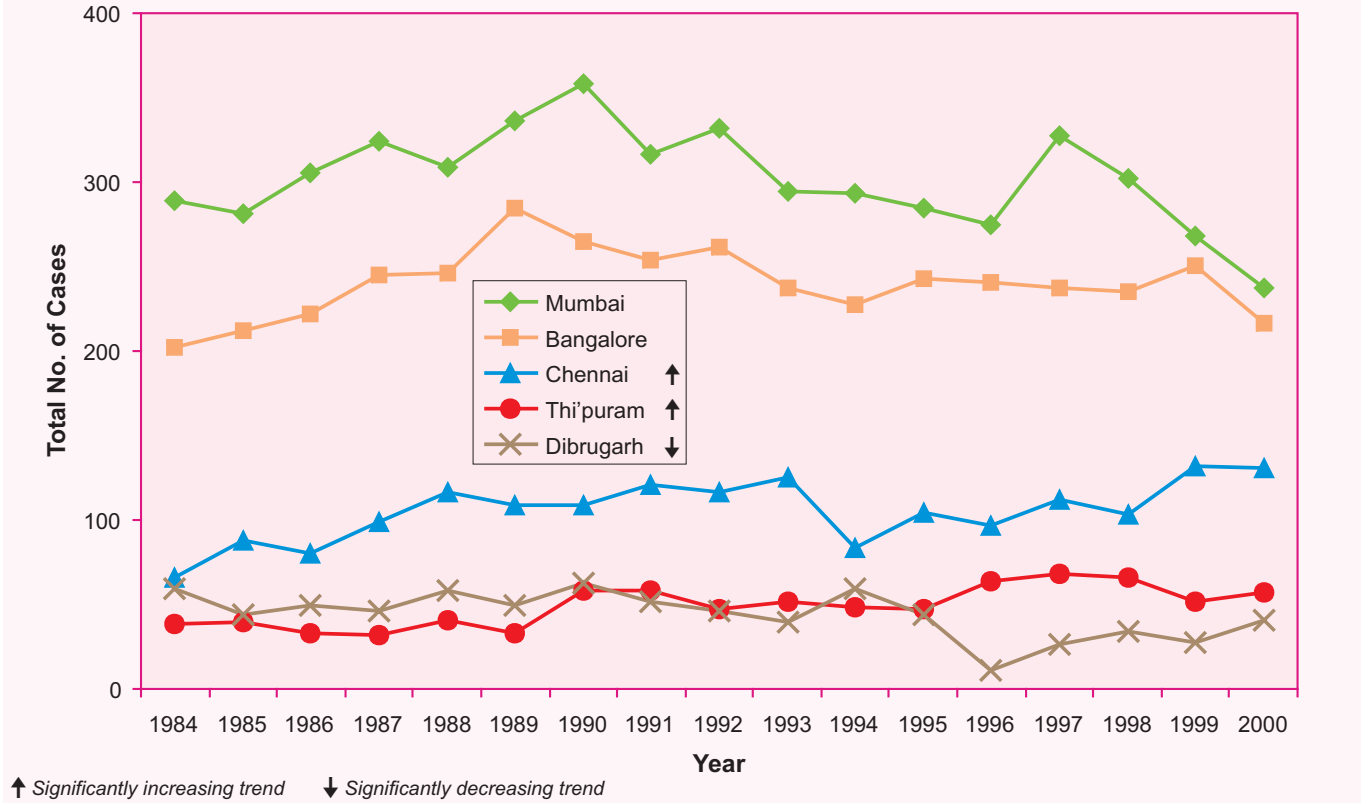
## Fig. 10.1: Trends in Actual Numbers - Oesophageal Cancer

### Males




↑ *Significantly increasing trend* ↓ *Significantly decreasing trend*

### Females




↑ *Significantly increasing trend* ↓ *Significantly decreasing trend*

## Table 10.2: Number(#) and Relative Proportion(%) of oesophageal cancers according to five year age group (1999-2000)

### Males

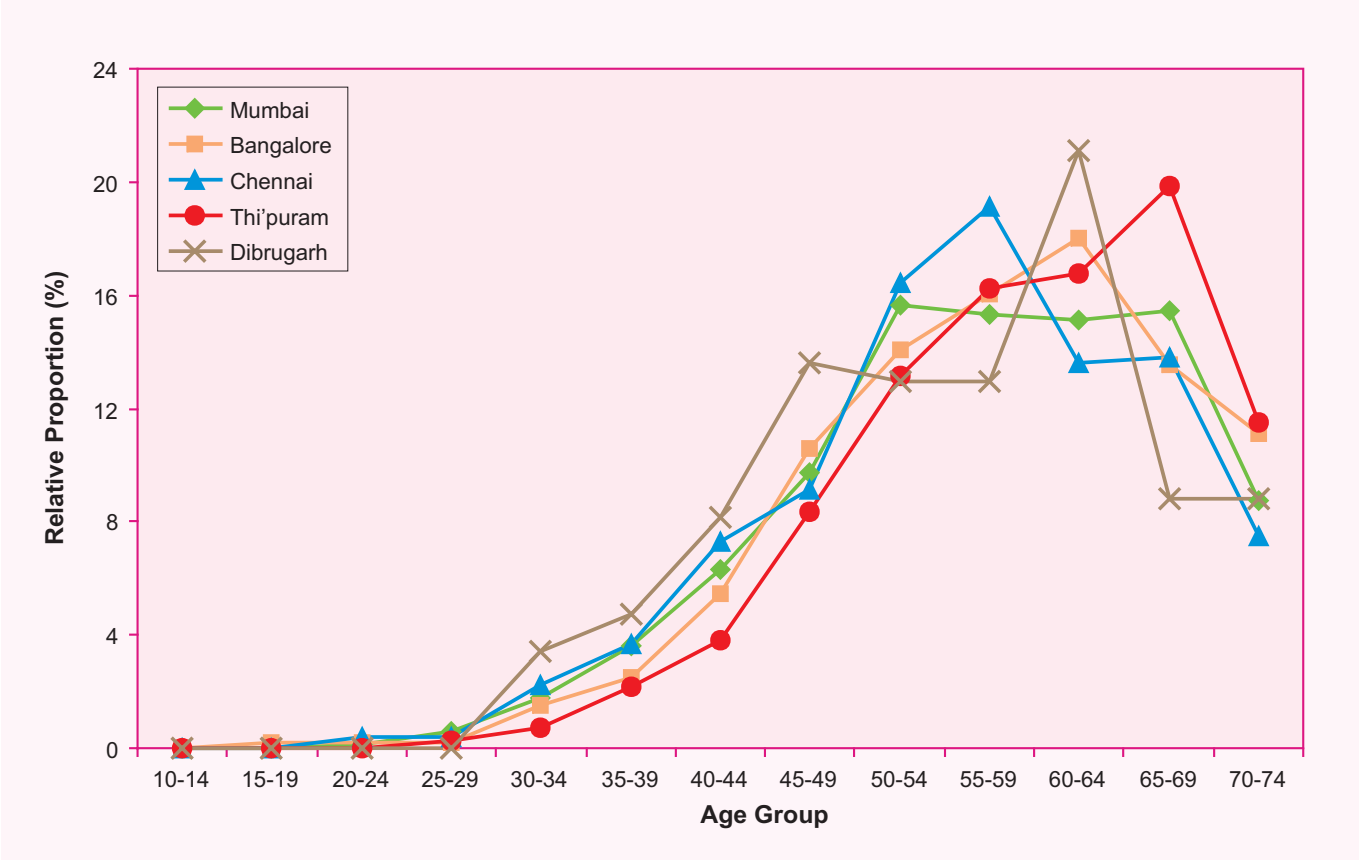
| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5- 9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10-14 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 15-19 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 20-24 | 1 | 0.1 | 1 | 0.2 | 2 | 0.4 | 0 | 0.0 | 0 | 0.0 |
| 25-29 | 6 | 0.6 | 1 | 0.2 | 2 | 0.4 | 1 | 0.2 | 0 | 0.0 |
| 30-34 | 18 | 1.8 | 9 | 1.5 | 11 | 2.3 | 2 | 0.5 | 5 | 3.4 |
| 35-39 | 36 | 3.6 | 15 | 2.6 | 18 | 3.8 | 9 | 2.2 | 7 | 4.8 |
| 40-44 | 63 | 6.3 | 32 | 5.5 | 36 | 7.5 | 16 | 3.9 | 12 | 8.2 |
| 45-49 | 97 | 9.7 | 63 | 10.7 | 44 | 9.2 | 35 | 8.5 | 20 | 13.6 |
| 50-54 | 156 | 15.6 | 84 | 14.3 | 80 | 16.7 | 54 | 13.1 | 19 | 12.9 |
| 55-59 | 153 | 15.3 | 93 | 15.8 | 88 | 18.4 | 68 | 16.5 | 19 | 12.9 |
| 60-64 | 151 | 15.1 | 105 | 17.9 | 66 | 13.8 | 68 | 16.5 | 31 | 21.1 |
| 65-69 | 154 | 15.4 | 79 | 13.5 | 66 | 13.8 | 81 | 19.7 | 13 | 8.8 |
| 70-74 | 87 | 8.7 | 64 | 10.9 | 35 | 7.3 | 48 | 11.7 | 13 | 8.8 |
| 75+ | 76 | 7.6 | 40 | 6.8 | 30 | 6.3 | 30 | 7.3 | 8 | 5.4 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Ages** | **998** | **100.0** | **587** | **100.0** | **478** | **100.0** | **412** | **100.0** | **147** | **100.0** |
| **Mean** | 57.6 | | 57.6 | | 56.5 | | 60.0 | | 55.3 | |
| **SD** | 11.45 | | 11.06 | | 11.48 | | 10.34 | | 11.94 | |

### Females

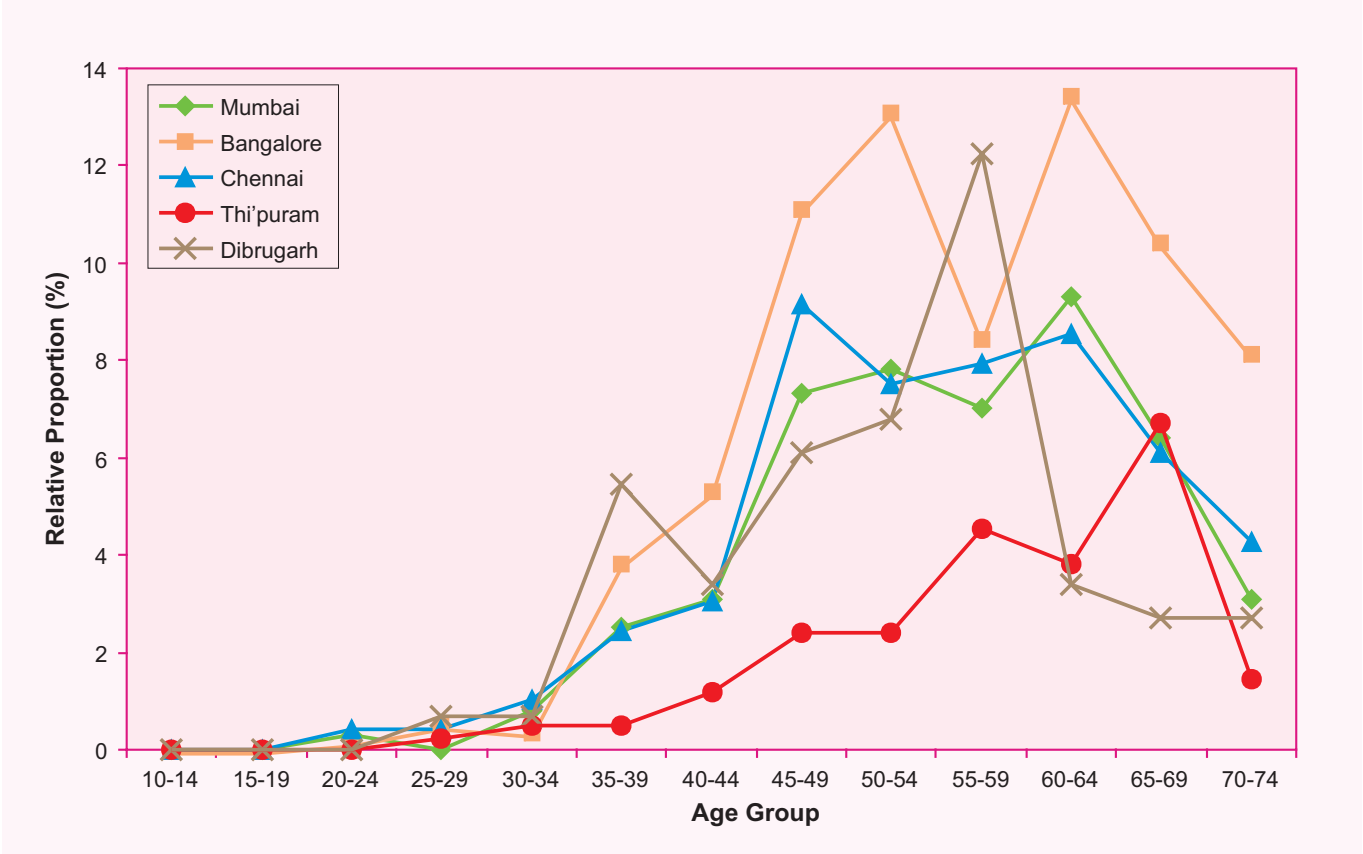
| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5- 9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10-14 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 15-19 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 20-24 | 3 | 0.6 | 1 | 0.2 | 2 | 0.8 | 0 | 0.0 | 0 | 0.0 |
| 25-29 | 0 | 0.0 | 2 | 0.4 | 2 | 0.8 | 1 | 0.9 | 1 | 1.5 |
| 30-34 | 8 | 1.6 | 2 | 0.4 | 5 | 1.9 | 2 | 1.8 | 1 | 1.5 |
| 35-39 | 25 | 5.0 | 23 | 4.9 | 12 | 4.6 | 2 | 1.8 | 8 | 11.8 |
| 40-44 | 31 | 6.1 | 31 | 6.6 | 15 | 5.7 | 5 | 4.6 | 5 | 7.4 |
| 45-49 | 73 | 14.5 | 63 | 13.5 | 44 | 16.7 | 9 | 8.3 | 9 | 13.2 |
| 50-54 | 78 | 15.4 | 77 | 16.5 | 36 | 13.7 | 10 | 9.2 | 10 | 14.7 |
| 55-59 | 70 | 13.9 | 50 | 10.7 | 38 | 14.4 | 19 | 17.4 | 18 | 26.5 |
| 60-64 | 93 | 18.4 | 80 | 17.1 | 42 | 16.0 | 16 | 14.7 | 5 | 7.4 |
| 65-69 | 64 | 12.7 | 63 | 13.5 | 30 | 11.4 | 28 | 25.7 | 4 | 5.9 |
| 70-74 | 31 | 6.1 | 48 | 10.3 | 21 | 8.0 | 6 | 5.5 | 4 | 5.9 |
| 75+ | 29 | 5.7 | 27 | 5.8 | 16 | 6.1 | 11 | 10.1 | 3 | 4.4 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Ages** | **505** | **100.0** | **467** | **100.0** | **263** | **100.0** | **109** | **100.0** | **68** | **100.0** |
| **Mean** | 55.7 | | 56.1 | | 55.4 | | 59.3 | | 52.4 | |
| **SD** | 11.27 | | 11.40 | | 11.86 | | 11.33 | | 11.45 | |

## Fig. 10.2: Five year age group distribution - Oesophageal Cancer (1999-2000)

### Males




### Females



## Table 10.3: Number(#) and Relative Proportion(%) of Oesophageal cancers based on different methods of diagnosis (1999-2000)

| Registry | Microscopic | | Clinical | | X-ray | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | |
| Mumbai | 911 | 91.3 | 2 | 0.2 | 1 | 0.1 | 84 | 8.4 | 998 | 100.0 |
| Bangalore | 565 | 96.3 | 6 | 1.0 | 0 | 0.0 | 16 | 2.7 | 587 | 100.0 |
| Chennai | 387 | 81.0 | 30 | 6.3 | 2 | 0.4 | 59 | 12.3 | 478 | 100.0 |
| Thi'puram | 389 | 94.4 | 4 | 1.0 | 6 | 1.5 | 13 | 3.2 | 412 | 100.0 |
| Dibrugarh | 133 | 90.5 | 2 | 1.4 | 10 | 6.8 | 2 | 1.4 | 147 | 100.0 |
| **Females** | | | | | | | | | | |
| Mumbai | 469 | 92.9 | 0 | 0.0 | 0 | 0.0 | 36 | 7.1 | 505 | 100.0 |
| Bangalore | 454 | 97.2 | 3 | 0.6 | 1 | 0.2 | 9 | 1.9 | 467 | 100.0 |
| Chennai | 223 | 84.8 | 13 | 4.9 | 1 | 0.4 | 26 | 9.9 | 263 | 100.0 |
| Thi'puram | 103 | 94.5 | 0 | 0.0 | 1 | 0.9 | 5 | 4.6 | 109 | 100.0 |
| Dibrugarh | 59 | 86.8 | 0 | 0.0 | 7 | 10.3 | 2 | 2.9 | 68 | 100.0 |

## Table 10.4: Number(#) and Relative Proportion(%) of oesophageal cancer patients according to the clinical extent of disease (Excludes Patients Previously Treated) (1999-2000)

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | | | |
| Mumbai | 630 | 67.7 | 114 | 12.2 | 744 | 79.9 | 187 | 20.1 | 0 | 0.0 | 931 | 100.0 |
| Bangalore | 54 | 9.4 | 433 | 75.6 | 487 | 85.0 | 66 | 11.5 | 20 | 3.5 | 573 | 100.0 |
| Chennai | 0 | 0.0 | 319 | 72.0 | 319 | 72.0 | 124 | 28.0 | 0 | 0.0 | 443 | 100.0 |
| Thi'puram | 104 | 26.7 | 242 | 62.2 | 346 | 88.9 | 43 | 11.1 | 0 | 0.0 | 389 | 100.0 |
| Dibrugarh | 20 | 14.1 | 95 | 66.9 | 115 | 81.0 | 7 | 4.9 | 20 | 14.1 | 142 | 100.0 |
| **Females** | | | | | | | | | | | | |
| Mumbai | 349 | 74.3 | 51 | 10.9 | 400 | 85.1 | 70 | 14.9 | 0 | 0.0 | 470 | 100.0 |
| Bangalore | 61 | 13.4 | 333 | 73.2 | 394 | 86.6 | 42 | 9.2 | 19 | 4.2 | 455 | 100.0 |
| Chennai | 1 | 0.4 | 181 | 77.0 | 182 | 77.4 | 53 | 22.6 | 0 | 0.0 | 235 | 100.0 |
| Thi'puram | 30 | 29.1 | 63 | 61.2 | 93 | 90.3 | 10 | 9.7 | 0 | 0.0 | 103 | 100.0 |
| Dibrugarh | 11 | 16.2 | 41 | 60.3 | 52 | 76.5 | 6 | 8.8 | 10 | 14.7 | 68 | 100.0 |

## Table 10.5: Number(#) and Relative Proportion(%) of oesophageal cancer patients according to Broad Groups of Treatment(Tmt) (1999-2000)

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Prior Tmt. Only | 47 | 4.7 | 12 | 2.0 | 35 | 7.3 | 11 | 2.7 | 0 | 0.0 |
| Prior & Tmt. at RI | 20 | 2.0 | 2 | 0.3 | 0 | 0.0 | 12 | 2.9 | 5 | 3.4 |
| Tmt. Only at RI | 384 | 38.5 | 217 | 37.0 | 93 | 19.5 | 292 | 70.9 | 126 | 85.7 |
| No Treatment | 547 | 54.8 | 356 | 60.6 | 350 | 73.2 | 97 | 23.5 | 16 | 10.9 |
| **Total Patients** | **998** | **100.0** | **587** | **100.0** | **478** | **100.0** | **412** | **100.0** | **147** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Prior Tmt. Only | 21 | 4.2 | 10 | 2.1 | 27 | 10.3 | 2 | 1.8 | 0 | 0.0 |
| Prior & Tmt. at RI | 14 | 2.8 | 2 | 0.4 | 1 | 0.4 | 4 | 3.7 | 0 | 0.0 |
| Tmt. Only at RI | 192 | 38.0 | 227 | 48.6 | 60 | 22.8 | 86 | 78.9 | 57 | 83.8 |
| No Treatment | 278 | 55.0 | 228 | 48.8 | 175 | 66.5 | 17 | 15.6 | 11 | 16.2 |
| **Total Patients** | **505** | **100.0** | **467** | **100.0** | **263** | **100.0** | **109** | **100.0** | **68** | **100.0** |

## Table 10.6: Number(#) and Relative Proportion(%) of Oesophageal Cancer patients according to Type of Treatment given(Patients treated only at Reporting Institution) (1999-2000)

### Males

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **384** | **100.0** | **217** | **100.0** | **93** | **100.0** | **292** | **100.0** | **126** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 149 | 38.8 | 47 | 21.7 | 25 | 26.9 | 2 | 0.7 | 1 | 0.8 |
| Radiotherapy(R) | 68 | 17.7 | 123 | 56.7 | 55 | 59.1 | 205 | 70.2 | 121 | 96.0 |
| Chemotherapy(C) | 56 | 14.6 | 5 | 2.3 | 0 | 0.0 | 19 | 6.5 | 4 | 3.2 |
| S + R | 3 | 0.8 | 17 | 7.8 | 1 | 1.1 | 1 | 0.3 | 0 | 0.0 |
| S + C | 35 | 9.1 | 7 | 3.2 | 0 | 0.0 | 3 | 1.0 | 0 | 0.0 |
| R + C | 66 | 17.2 | 15 | 6.9 | 12 | 12.9 | 50 | 17.1 | 0 | 0.0 |
| S + R + C | 7 | 1.8 | 3 | 1.4 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 |
| Others | 0.0 | 0 | 0.0 | 0.0 | 0.0 | 0 | 11.0 | 3.8 | 0.0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 273 | 71.1 | 175 | 80.6 | 80 | 86.0 | 226 | 77.4 | 126 | 100.0 |
| Combination | 111 | 28.9 | 42 | 19.4 | 13 | 14.0 | 55 | 18.8 | 0 | 0.0 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 194 | 50.5 | 74 | 34.1 | 26 | 28.0 | 7 | 2.4 | 1 | 0.8 |
| Any R | 144 | 37.5 | 158 | 72.8 | 68 | 73.1 | 257 | 88.0 | 121 | 96.0 |
| Any C | 164 | 42.7 | 30 | 13.8 | 12 | 12.9 | 73 | 25.0 | 4 | 3.2 |

### Females

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **192** | **100.0** | **227** | **100.0** | **60** | **100.0** | **86** | **100.0** | **57** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 85 | 44.3 | 28 | 12.3 | 11 | 18.3 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 31 | 16.1 | 156 | 68.7 | 42 | 70.0 | 60 | 69.8 | 55 | 96.5 |
| Chemotherapy(C) | 29 | 15.1 | 3 | 1.3 | 0 | 0.0 | 5 | 5.8 | 2 | 3.5 |
| S + R | 3 | 1.6 | 9 | 4.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 9 | 4.7 | 8 | 3.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 31 | 16.1 | 20 | 8.8 | 7 | 11.7 | 19 | 22.1 | 0 | 0.0 |
| S + R + C | 4 | 2.1 | 2 | 0.9 | 0 | 0.0 | 1 | 1.2 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 | 1 | 1.2 | 0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 145 | 75.5 | 187 | 82.4 | 53 | 88.3 | 65 | 75.6 | 57 | 100.0 |
| Combination | 47 | 24.5 | 39 | 17.2 | 7 | 11.7 | 20 | 23.3 | 0 | 0.0 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 101 | 52.6 | 47 | 20.7 | 11 | 18.3 | 1 | 1.2 | 0 | 0.0 |
| Any R | 69 | 35.9 | 187 | 82.4 | 49 | 81.7 | 80 | 93.0 | 55 | 96.5 |
| Any C | 73 | 38.0 | 33 | 14.5 | 7 | 11.7 | 25 | 29.1 | 2 | 3.5 |

## Table 10.7(a): Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Oesophagus - Males (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 127 | 46.2 | 4 | 18.2 | 0 | 0.0 | 1 | 1.3 | 0 | 0.0 |
| Radiotherapy(R) | 49 | 17.8 | 14 | 63.6 | 0 | 0.0 | 54 | 69.2 | 20 | 100.0 |
| Chemotherapy(C) | 25 | 9.1 | 0 | 0.0 | 0 | 0.0 | 1 | 1.3 | 0 | 0.0 |
| S + R | 3 | 1.1 | 1 | 4.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 23 | 8.4 | 0 | 0.0 | 0 | 0.0 | 2 | 2.6 | 0 | 0.0 |
| R + C | 45 | 16.4 | 3 | 13.6 | 0 | 0.0 | 19 | 24.4 | 0 | 0.0 |
| S + R + C | 3 | 1.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 1.3 | 0 | 0.0 |
| ALL TREATMENTS | 275 | 100.0 | 22 | 100.0 | 0.001 | 0.0 | 78 | 100.0 | 20 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 15 | 27.3 | 39 | 21.5 | 25 | 27.8 | 1 | 0.5 | 0 | 0.0 |
| Radiotherapy(R) | 6 | 10.9 | 99 | 54.7 | 52 | 57.8 | 135 | 73.4 | 84 | 100.0 |
| Chemotherapy(C) | 10 | 18.2 | 5 | 2.8 | 0 | 0.0 | 16 | 8.7 | 0 | 0.0 |
| S + R | 0 | 0.0 | 16 | 8.8 | 1 | 1.1 | 1 | 0.5 | 0 | 0.0 |
| S + C | 9 | 16.4 | 7 | 3.9 | 0 | 0.0 | 1 | 0.5 | 0 | 0.0 |
| R + C | 12 | 21.8 | 12 | 6.6 | 12 | 13.3 | 24 | 13.0 | 0 | 0.0 |
| S + R + C | 3 | 5.5 | 3 | 1.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 6 | 3.3 | 0 | 0.0 |
| ALL TREATMENTS | 55 | 100.0 | 181 | 100.0 | 90 | 100.0 | 184 | 100.0 | 84 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 149 | 38.8 | 47 | 21.8 | 25 | 26.9 | 2 | 0.7 | 1 | 0.9 |
| Radiotherapy(R) | 68 | 17.7 | 122 | 56.5 | 55 | 59.1 | 205 | 70.2 | 106 | 96.4 |
| Chemotherapy(C) | 56 | 14.6 | 5 | 2.3 | 0 | 0.0 | 19 | 6.5 | 3 | 2.7 |
| S + R | 3 | 0.8 | 17 | 7.9 | 1 | 1.1 | 1 | 0.3 | 0 | 0.0 |
| S + C | 35 | 9.1 | 7 | 3.2 | 0 | 0.0 | 3 | 1.0 | 0 | 0.0 |
| R + C | 66 | 17.2 | 15 | 6.9 | 12 | 12.9 | 50 | 17.1 | 0 | 0.0 |
| S + R + C | 7 | 1.8 | 3 | 1.4 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 11 | 3.8 | 0 | 0.0 |
| ALL TREATMENTS | 384 | 100.0 | 216 | 100.0 | 93 | 100.0 | 292 | 100.0 | 110 | 100.0 |

## Table 10.7(b): Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Oesophagus - Females (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 71 | 46.1 | 2 | 7.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 26 | 16.9 | 23 | 82.1 | 0 | 0.0 | 17 | 65.4 | 10 | 100.0 |
| Chemotherapy(C) | 20 | 13.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + R | 2 | 1.3 | 1 | 3.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 8 | 5.2 | 1 | 3.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 23 | 14.9 | 1 | 3.6 | 0 | 0.0 | 8 | 30.8 | 0 | 0.0 |
| S + R + C | 4 | 2.6 | 0 | 0.0 | 0 | 0.0 | 1 | 3.8 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| ALL TREATMENTS | 154 | 100.0 | 28 | 100.0 | 0.001 | 0.0 | 26 | 100.0 | 10 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 13 | 59.1 | 24 | 13.3 | 11 | 19.3 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 2 | 9.1 | 122 | 67.8 | 39 | 68.4 | 38 | 73.1 | 40 | 100.0 |
| Chemotherapy(C) | 2 | 9.1 | 2 | 1.1 | 0 | 0.0 | 4 | 7.7 | 0 | 0.0 |
| S + R | 0 | 0.0 | 7 | 3.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 1 | 4.5 | 6 | 3.3 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 4 | 18.2 | 16 | 8.9 | 7 | 12.3 | 9 | 17.3 | 0 | 0.0 |
| S + R + C | 0 | 0.0 | 2 | 1.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.6 | 0 | 0.0 | 1 | 1.9 | 0 | 0.0 |
| ALL TREATMENTS | 22 | 100.0 | 180 | 100.0 | 57 | 100.0 | 52 | 100.0 | 40 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 1 | 6.3 | 2 | 11.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 3 | 18.8 | 11 | 64.7 | 3 | 100.0 | 5 | 62.5 | 1 | 50.0 |
| Chemotherapy(C) | 7 | 43.8 | 1 | 5.9 | 0 | 0.0 | 1 | 12.5 | 1 | 50.0 |
| S + R | 1 | 6.3 | 1 | 5.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 0 | 0.0 | 1 | 5.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 4 | 25.0 | 1 | 5.9 | 0 | 0.0 | 2 | 25.0 | 0 | 0.0 |
| S + R + C | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| ALL TREATMENTS | 16 | 100.0 | 17 | 100.0 | 3 | 100.0 | 8 | 100.0 | 2 | 100.0 |

## Table 10.8(a): Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Oesophagus - Males (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 156 | 56.7 | 100 | 36.4 | 96 | 34.9 | 0 | 0.0 | 275 |
| **Bangalore** | 5 | 22.7 | 18 | 81.8 | 3 | 13.6 | 0 | 0.0 | 22 |
| **Chennai** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| **Thi'puram** | 3 | 3.8 | 73 | 93.6 | 22 | 28.2 | 1 | 1.3 | 78 |
| **Dibrugarh** | 0 | 0.0 | 20 | 100.0 | 0 | 0.0 | 0 | 0.0 | 20 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 27 | 49.1 | 21 | 38.2 | 34 | 61.8 | 0 | 0.0 | 55 |
| **Bangalore** | 65 | 35.9 | 130 | 71.8 | 27 | 14.9 | 0 | 0.0 | 181 |
| **Chennai** | 26 | 28.9 | 65 | 72.2 | 12 | 13.3 | 0 | 0.0 | 90 |
| **Thi'puram** | 3 | 1.6 | 160 | 87.0 | 41 | 22.3 | 6 | 3.3 | 184 |
| **Dibrugarh** | 0 | 0.0 | 84 | 100.0 | 0 | 0.0 | 0 | 0.0 | 84 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 11 | 20.4 | 23 | 42.6 | 34 | 63.0 | 0 | 0.0 | 54 |
| **Bangalore** | 4 | 30.8 | 9 | 69.2 | 0 | 0.0 | 0 | 0.0 | 13 |
| **Chennai** | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 0 | 0.0 | 3 |
| **Thi'puram** | 1 | 3.3 | 24 | 80.0 | 10 | 33.3 | 4 | 13.3 | 30 |
| **Dibrugarh** | 1 | 16.7 | 2 | 33.3 | 3 | 50.0 | 0 | 0.0 | 6 |

## Table 10.8(b): Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Oesophagus - Females (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 85 | 55.2 | 55 | 35.7 | 55 | 35.7 | 0 | 0.0 | 154 |
| **Bangalore** | 4 | 14.3 | 25 | 89.3 | 2 | 7.1 | 0 | 0.0 | 28 |
| **Chennai** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| **Thi'puram** | 1 | 3.8 | 26 | 100.0 | 9 | 34.6 | 0 | 0.0 | 26 |
| **Dibrugarh** | 0 | 0.0 | 10 | 100.0 | 0 | 0.0 | 0 | 0.0 | 10 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 14 | 63.6 | 6 | 27.3 | 7 | 31.8 | 0 | 0.0 | 22 |
| **Bangalore** | 39 | 21.7 | 147 | 81.7 | 27 | 15.0 | 1 | 0.6 | 180 |
| **Chennai** | 11 | 19.3 | 46 | 80.7 | 7 | 12.3 | 0 | 0.0 | 57 |
| **Thi'puram** | 0 | 0.0 | 47 | 90.4 | 13 | 25.0 | 1 | 1.9 | 52 |
| **Dibrugarh** | 0 | 0.0 | 40 | 100.0 | 0 | 0.0 | 0 | 0.0 | 40 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 2 | 12.5 | 8 | 50.0 | 11 | 68.8 | 0 | 0.0 | 16 |
| **Bangalore** | 4 | 23.5 | 13 | 76.5 | 3 | 17.6 | 0 | 0.0 | 17 |
| **Chennai** | 0 | 0.0 | 3 | 100.0 | 0 | 0.0 | 0 | 0.0 | 3 |
| **Thi'puram** | 0 | 0.0 | 7 | 87.5 | 3 | 37.5 | 0 | 0.0 | 8 |
| **Dibrugarh** | 0 | 0.0 | 1 | 50.0 | 1 | 50.0 | 0 | 0.0 | 2 |

# Chapter 11

## LUNG (ICD-10: C33-C34)

Cancer of the lung in males was the leading site of cancer in Thiruvananthapuram accounting for13.2% of all cancers in males (Table 11.1).

Figure 11.1 gives the trends in actual numbers of lung cancers from 1984 to 2000. A significant increase was seen in Mumbai, Chennai and Thiruvananthapuram, whereas a decline was seen in Bangalore and Dibrugarh.

Table 11.2 and Figure 11.2 give the five year age distribution of lung cancers. The mean age varied from 56.6 in Chennai to 59.7 in Thiruvananthapuram.

Table 11.3 gives the number and relative proportion according to the different methods of diagnosis.

The number and relative proportion of lung cancers according to the clinical extent of disease is given in Table 11.4.

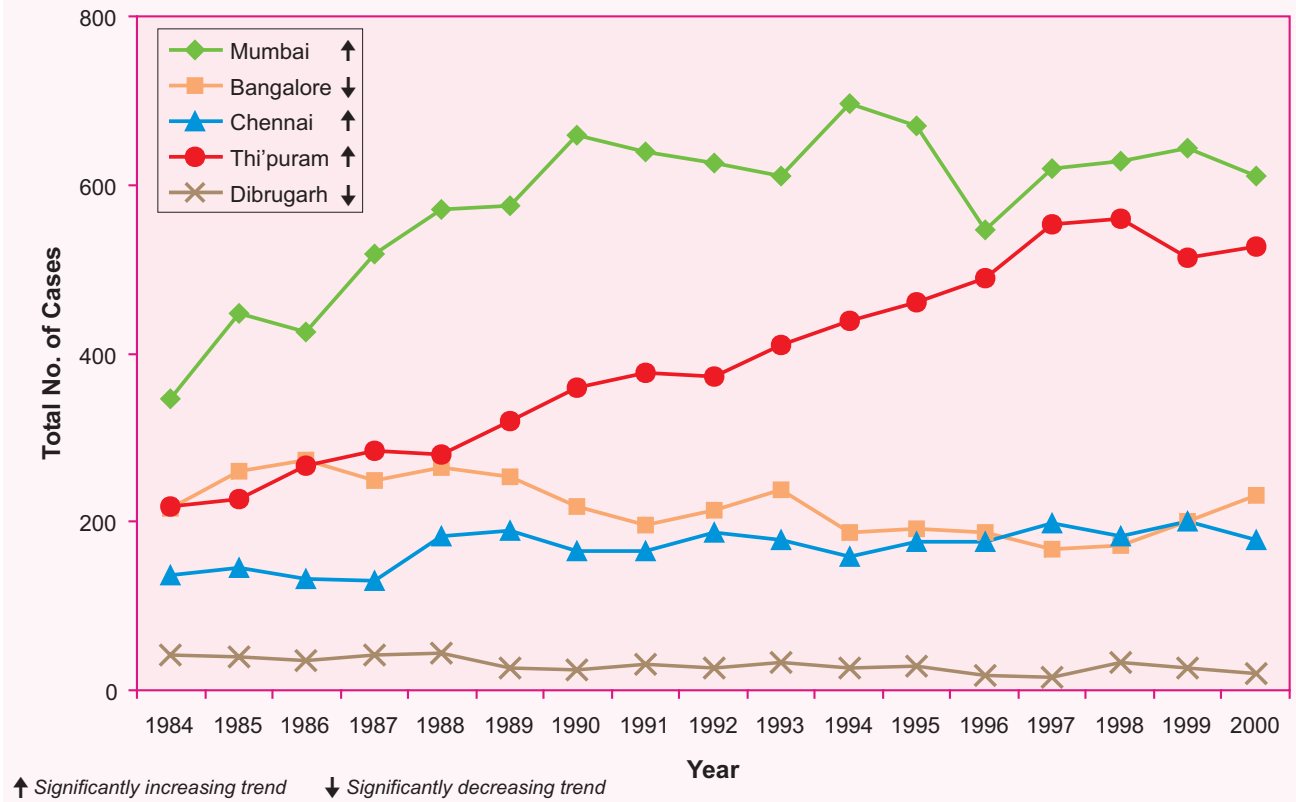
Table 11.5 gives the number and relative proportion according to the broad groups of treatment.

Tables 11.6 to 11.8 give the number and relative proportion according to different types of treatment.

## Table 11.1: Number(#), Relative Proportion(%) and Rank(R) of cancers of the Lung - Males (1999-2000)

| Registry | Total | # | % | R |
|---|---|---|---|---|
| **Mumbai** | 17637 | 1253 | 7.1 | 2 |
| **Bangalore** | 6106 | 432 | 7.1 | 3 |
| **Chennai** | 6195 | 378 | 6.1 | 6 |
| **Thi'puram** | 7859 | 1041 | 13.2 | 1 |
| **Dibrugarh** | 997 | 46 | 4.6 | 6 |

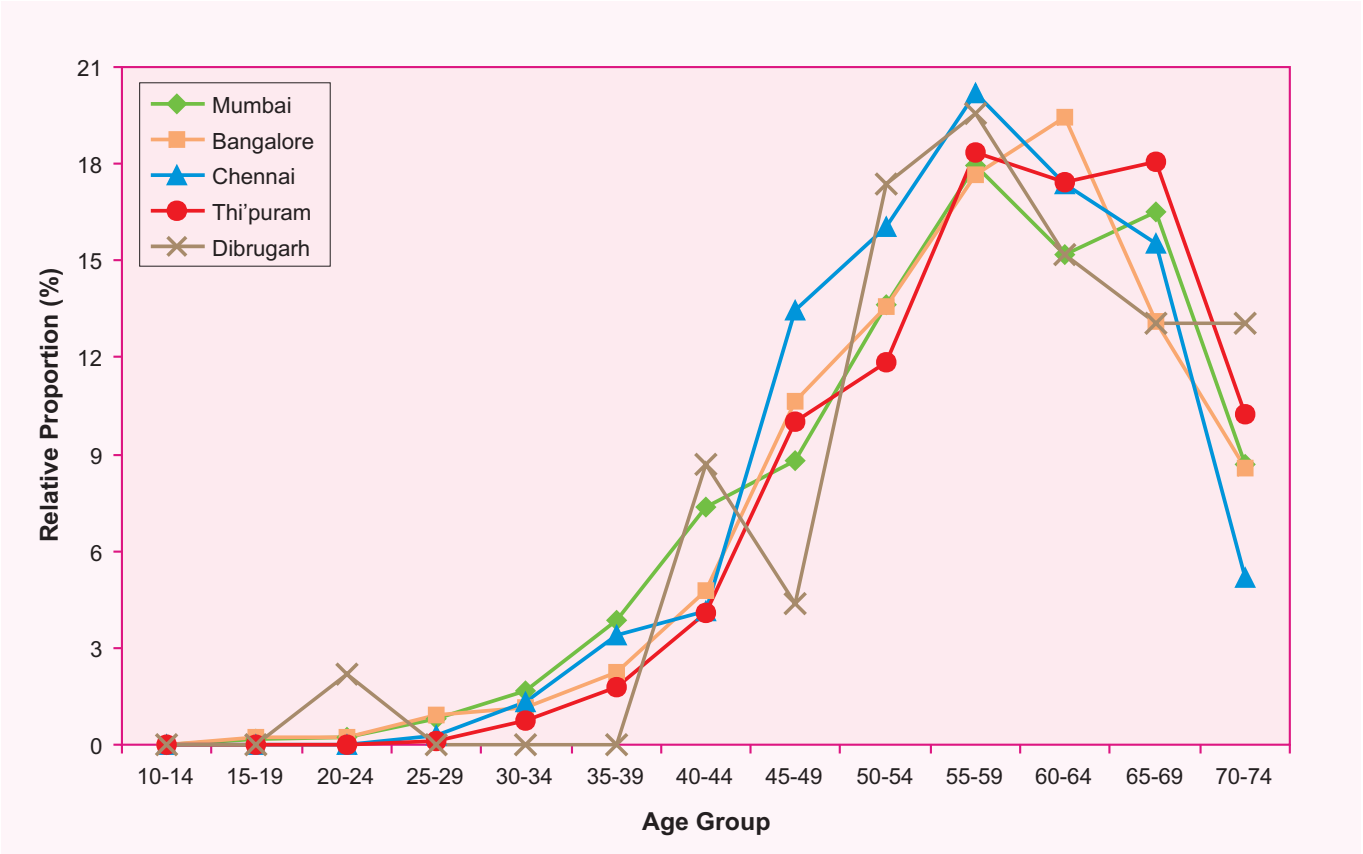
## Fig. 11.1: Trends in Actual Numbers - Lung Cancer - Males



## Table 11.2: Number(#) and Relative Proportion(%) of Lung cancers according to five year age group - Males (1999-2000)

| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5- 9 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 10-14 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 15-19 | 2 | 0.2 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 20-24 | 3 | 0.2 | 1 | 0.2 | 0 | 0.0 | 0 | 0.0 | 1 | 2.2 |
| 25-29 | 10 | 0.8 | 4 | 0.9 | 1 | 0.3 | 1 | 0.1 | 0 | 0.0 |
| 30-34 | 21 | 1.7 | 5 | 1.2 | 4 | 1.1 | 8 | 0.8 | 0 | 0.0 |
| 35-39 | 48 | 3.8 | 10 | 2.3 | 11 | 2.9 | 19 | 1.8 | 0 | 0.0 |
| 40-44 | 92 | 7.3 | 21 | 4.9 | 16 | 4.2 | 42 | 4.0 | 4 | 8.7 |
| 45-49 | 110 | 8.8 | 45 | 10.4 | 52 | 13.8 | 103 | 9.9 | 2 | 4.3 |
| 50-54 | 171 | 13.6 | 58 | 13.4 | 61 | 16.1 | 123 | 11.8 | 8 | 17.4 |
| 55-59 | 225 | 18.0 | 78 | 18.1 | 77 | 20.4 | 191 | 18.3 | 9 | 19.6 |
| 60-64 | 190 | 15.2 | 81 | 18.8 | 65 | 17.2 | 183 | 17.6 | 7 | 15.2 |
| 65-69 | 207 | 16.5 | 57 | 13.2 | 59 | 15.6 | 188 | 18.1 | 6 | 13.0 |
| 70-74 | 109 | 8.7 | 38 | 8.8 | 20 | 5.3 | 107 | 10.3 | 6 | 13.0 |
| 75+ | 64 | 5.1 | 32 | 7.4 | 12 | 3.2 | 76 | 7.3 | 3 | 6.5 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Ages** | **1253** | **100.0** | **432** | **100.0** | **378** | **100.0** | **1041** | **100.0** | **46** | **100.0** |
| **Mean** | 57.1 | | 57.4 | | 56.6 | | 59.7 | | 57.5 | |
| **SD** | 11.46 | | 11.39 | | 9.61 | | 10.25 | | 11.21 | |

## Fig. 11.2: Five year age group distribution - Lung Cancer - Males (1999-2000)



## Table 11.3: Number(#) and Relative Proportion(%) of Lung cancers based on different methods of diagnosis - Males (1999-2000)

| Registry | Microscopic | | Clinical | | X-ray | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 1141 | 91.1 | 4 | 0.3 | 3 | 0.2 | 105 | 8.4 | 1253 | 100.0 |
| Bangalore | 385 | 89.1 | 15 | 3.5 | 9 | 2.1 | 23 | 5.3 | 432 | 100.0 |
| Chennai | 253 | 66.9 | 16 | 4.2 | 75 | 19.8 | 34 | 9.0 | 378 | 100.0 |
| Thi'puram | 855 | 82.1 | 1 | 0.1 | 79 | 7.6 | 106 | 10.2 | 1041 | 100.0 |
| Dibrugarh | 41 | 89.1 | 0 | 0.0 | 3 | 6.5 | 2 | 4.3 | 46 | 100.0 |

## Table 11.4: Number(#) and Relative Proportion(%) of Lung cancer patients according to the clinical extent of disease (Excludes Patients Previously Treated) (1999-2000)

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 466 | 40.0 | 49 | 4.2 | 515 | 44.2 | 649 | 55.7 | 1 | 0.1 | 1165 | 100.0 |
| Bangalore | 17 | 4.3 | 214 | 53.9 | 231 | 58.2 | 154 | 38.8 | 12 | 3.0 | 397 | 100.0 |
| Chennai | 0 | 0.0 | 249 | 73.0 | 249 | 73.0 | 92 | 27.0 | 0 | 0.0 | 341 | 100.0 |
| Thi'puram | 120 | 12.3 | 361 | 36.9 | 481 | 49.1 | 498 | 50.9 | 0 | 0.0 | 979 | 100.0 |
| Dibrugarh | 0 | 0.0 | 3 | 6.7 | 3 | 6.7 | 12 | 26.7 | 30 | 66.7 | 45 | 100.0 |

## Table 11.5: Number(#) and Relative Proportion(%) of Lung cancer patients according to Broad Groups of Treatment(Tmt) - Males (1999-2000)

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Prior Tmt. Only | 68 | 5.4 | 23 | 5.3 | 33 | 8.7 | 25 | 2.4 | 0 | 0.0 |
| Prior & Tmt. at RI | 20 | 1.6 | 12 | 2.8 | 4 | 1.1 | 37 | 3.6 | 1 | 2.2 |
| Tmt. Only at RI | 400 | 31.9 | 133 | 30.8 | 76 | 20.1 | 697 | 67.0 | 28 | 60.9 |
| No Treatment | 765 | 61.1 | 264 | 61.1 | 265 | 70.1 | 282 | 27.1 | 17 | 37.0 |
| **Total Patients** | **1253** | **100.0** | **432** | **100.0** | **378** | **100.0** | **1041** | **100.0** | **46** | **100.0** |

## Table 11.6: Number(#) and Relative Proportion(%) of Lung cancer patients according to Type of Treatment given (Patients treated only at Reporting Institution) - Males (1999-2000)

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **400** | **100.0** | **133** | **100.0** | **76** | **100.0** | **697** | **100.0** | **28** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 69 | 17.3 | 3 | 2.3 | 3 | 3.9 | 5 | 0.7 | 0 | 0.0 |
| Radiotherapy(R) | 120 | 30.0 | 75 | 56.4 | 10 | 13.2 | 375 | 53.8 | 10 | 35.7 |
| Chemotherapy(C) | 128 | 32.0 | 28 | 21.1 | 58 | 76.3 | 122 | 17.5 | 13 | 46.4 |
| S + R | 8 | 2.0 | 1 | 0.8 | 0 | 0.0 | 4 | 0.6 | 1 | 3.6 |
| S + C | 12 | 3.0 | 4 | 3.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| R + C | 49 | 12.3 | 22 | 16.5 | 5 | 6.6 | 101 | 14.5 | 4 | 14.3 |
| S + R + C | 14 | 3.5 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 88 | 12.6 | 0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 317 | 79.3 | 106 | 79.7 | 71 | 93.4 | 502 | 72.0 | 23 | 82.1 |
| Combination | 83 | 20.8 | 27 | 20.3 | 5 | 6.6 | 107 | 15.4 | 5 | 17.9 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 103 | 25.8 | 8 | 6.0 | 3 | 3.9 | 11 | 1.6 | 1 | 3.6 |
| Any R | 191 | 47.8 | 98 | 73.7 | 15 | 19.7 | 481 | 69.0 | 15 | 53.6 |
| Any C | 203 | 50.8 | 54 | 40.6 | 63 | 82.9 | 225 | 32.3 | 17 | 60.7 |

## Table 11.7: Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Lung - Males (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 63 | 38.9 | 1 | 11.1 | 0 | 0.0 | 3 | 3.3 | 0 | 0.0 |
| Radiotherapy(R) | 36 | 22.2 | 2 | 22.2 | 0 | 0.0 | 55 | 61.1 | 0 | 0.0 |
| Chemotherapy(C) | 28 | 17.3 | 2 | 22.2 | 0 | 0.0 | 7 | 7.8 | 0 | 0.0 |
| S + R | 8 | 4.9 | 0 | 0.0 | 0 | 0.0 | 3 | 3.3 | 0 | 0.0 |
| S + C | 8 | 4.9 | 2 | 22.2 | 0 | 0.0 | 1 | 1.1 | 0 | 0.0 |
| R + C | 13 | 8.0 | 2 | 22.2 | 0 | 0.0 | 11 | 12.2 | 0 | 0.0 |
| S + R + C | 6 | 3.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 10 | 11.1 | 0 | 0.0 |
| ALL TREATMENTS | 162 | 100.0 | 9 | 100.0 | 0.001 | 0.0 | 90 | 100.0 | 0.001 | 0.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 3 | 13.6 | 2 | 2.6 | 3 | 5.4 | 1 | 0.4 | 0 | 0.0 |
| Radiotherapy(R) | 5 | 22.7 | 43 | 55.1 | 8 | 14.3 | 128 | 49.8 | 1 | 33.3 |
| Chemotherapy(C) | 3 | 13.6 | 19 | 24.4 | 42 | 75.0 | 52 | 20.2 | 1 | 33.3 |
| S + R | 0 | 0.0 | 1 | 1.3 | 0 | 0.0 | 0 | 0.0 | 1 | 33.3 |
| S + C | 2 | 9.1 | 2 | 2.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 5 | 22.7 | 11 | 14.1 | 3 | 5.4 | 42 | 16.3 | 0 | 0.0 |
| S + R + C | 4 | 18.2 | 0 | 0.0 | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 33 | 12.8 | 0 | 0.0 |
| ALL TREATMENTS | 22 | 100.0 | 78 | 100.0 | 56 | 100.0 | 257 | 100.0 | 3 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 3 | 1.4 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 |
| Radiotherapy(R) | 79 | 36.6 | 29 | 67.4 | 2 | 10.0 | 192 | 54.9 | 3 | 37.5 |
| Chemotherapy(C) | 97 | 44.9 | 6 | 14.0 | 16 | 80.0 | 63 | 18.0 | 3 | 37.5 |
| S + R | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 |
| S + C | 2 | 0.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 31 | 14.4 | 8 | 18.6 | 2 | 10.0 | 48 | 13.7 | 2 | 25.0 |
| S + R + C | 4 | 1.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 45 | 12.9 | 0 | 0.0 |
| ALL TREATMENTS | 216 | 100.0 | 43 | 100.0 | 20 | 100.0 | 350 | 100.0 | 8 | 100.0 |

## Table 11.8: Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Lung - Males (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 85 | 52.5 | 63 | 38.9 | 55 | 34.0 | 0 | 0.0 | 162 |
| **Bangalore** | 3 | 33.3 | 4 | 44.4 | 6 | 66.7 | 0 | 0.0 | 9 |
| **Chennai** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| **Thi'puram** | 7 | 7.8 | 69 | 76.7 | 19 | 21.1 | 10 | 11.1 | 90 |
| **Dibrugarh** | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 9 | 40.9 | 14 | 63.6 | 14 | 63.6 | 0 | 0.0 | 22 |
| **Bangalore** | 5 | 6.4 | 55 | 70.5 | 32 | 41.0 | 0 | 0.0 | 78 |
| **Chennai** | 3 | 5.4 | 11 | 19.6 | 45 | 80.4 | 0 | 0.0 | 56 |
| **Thi'puram** | 2 | 0.8 | 171 | 66.5 | 95 | 37.0 | 33 | 12.8 | 257 |
| **Dibrugarh** | 1 | 33.3 | 2 | 66.7 | 1 | 33.3 | 0 | 0.0 | 3 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 9 | 4.2 | 114 | 52.8 | 134 | 62.0 | 0 | 0.0 | 216 |
| **Bangalore** | 0 | 0.0 | 37 | 86.0 | 14 | 32.6 | 0 | 0.0 | 43 |
| **Chennai** | 0 | 0.0 | 4 | 20.0 | 18 | 90.0 | 0 | 0.0 | 20 |
| **Thi'puram** | 2 | 0.6 | 241 | 68.9 | 111 | 31.7 | 45 | 12.9 | 350 |
| **Dibrugarh** | 0 | 0.0 | 5 | 62.5 | 5 | 62.5 | 0 | 0.0 | 8 |

# Chapter 12

## FEMALE BREAST (ICD-10: C50)

Cancer of the female breast was the leading site of cancer in Mumbai and Thiruvananthapuram, the second leading site in Bangalore and Chennai and the third leading site in Dibrugarh (Table 12.1).

Figure 12.1 gives the trends in actual numbers of breast cancer in females from 1984 to 2000. A significant increase in numbers was seen in all registries except Dibrugarh.

Table 12.2 and Figure 12.2 give the five year age distribution of breast cancer in females. The mean age was slightly lower in Dibrugarh at 42, compared to over 47 in other HBCRs.

Table 12.3 gives the number and relative proportion according to the different methods of diagnosis. The proportion of microscopic diagnosis varied from 87.8% in Mumbai to 98.9% in Thiruvananthapuram.

Table 12.4 gives the number and relative proportion according to the clinical extent of disease. The proportion with "Regional" spread varied from 37.5% in Mumbai to 79.3% in Dibrugarh.

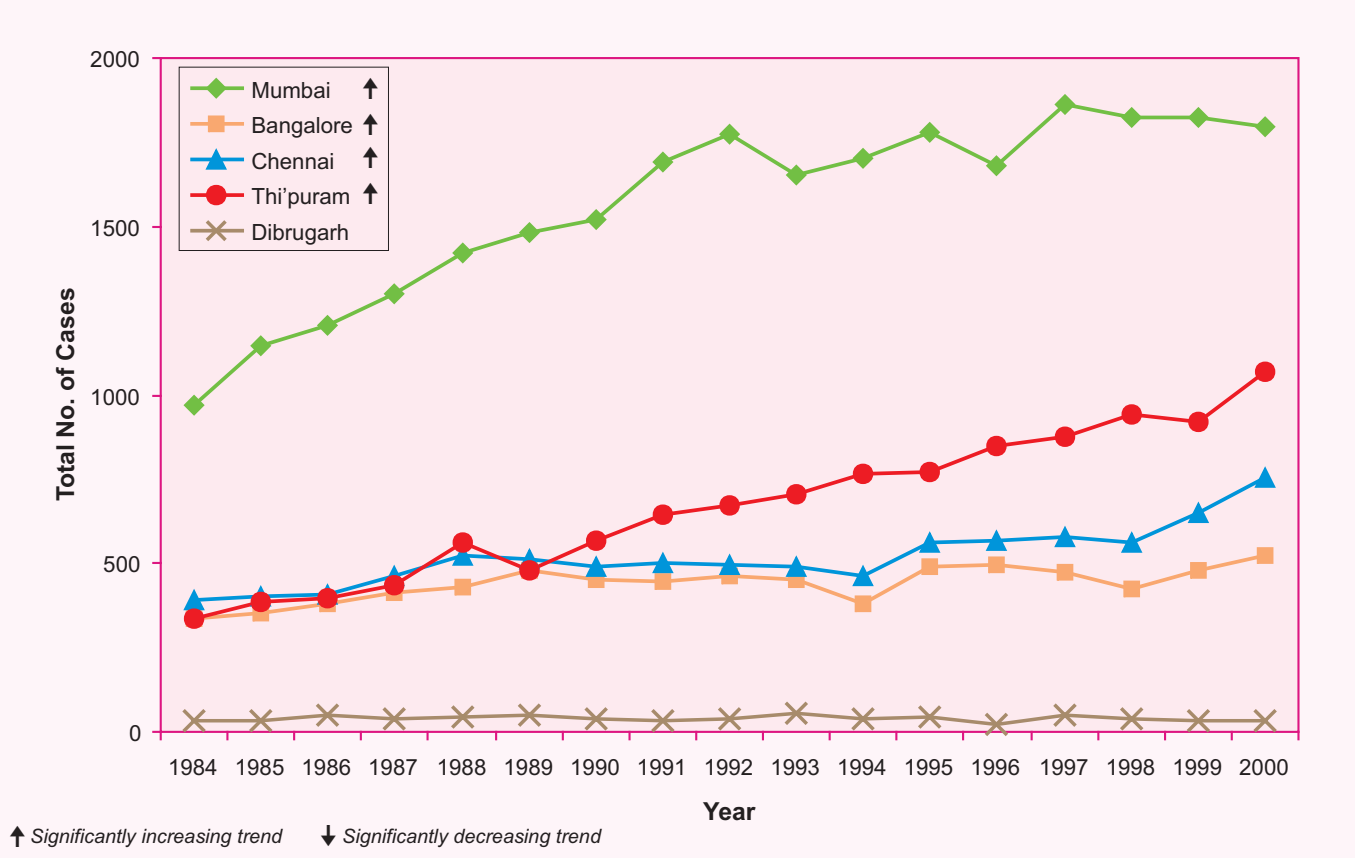
Table 12.5 gives the number and relative proportion according to the broad groups of treatment.

Tables 12.6 to 12.8 gives the number and relative proportion according to the different types of treatment.

## Table 12.1: Number(#), Relative Proportion(%) and Rank(R) of cancers of the breast - Females (1999-2000)

| Registry | Total | # | % | R |
|---|---|---|---|---|
| **Mumbai** | 13679 | 3617 | 26.4 | 1 |
| **Bangalore** | 7543 | 1001 | 13.3 | 2 |
| **Chennai** | 7139 | 1412 | 19.8 | 2 |
| **Thi'puram** | 7247 | 1991 | 27.5 | 1 |
| **Dibrugarh** | 536 | 65 | 12.1 | 3 |

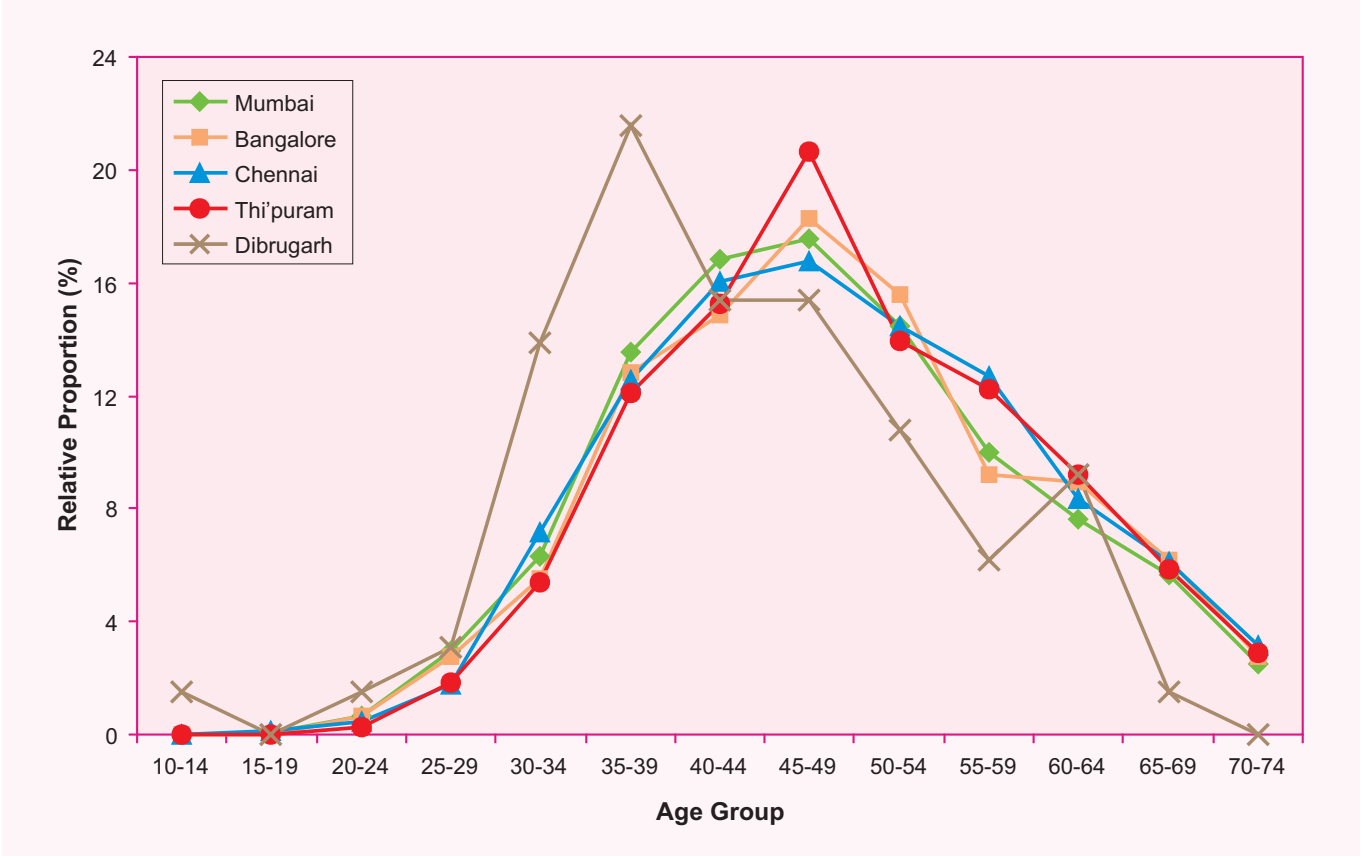
## Fig. 12.1: Trends in Actual Numbers - Female Breast Cancer



## Table 12.2: Number(#) and Relative Proportion(%) of female breast cancers according to five year age group (1999-2000)

| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| 5- 9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| 10-14 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1.0 | 1.5 |
| 15-19 | 2 | 0.1 | 0 | 0.0 | 2 | 0.1 | 0 | 0.0 | 0.0 | 0.0 |
| 20-24 | 24 | 0.7 | 6 | 0.6 | 7 | 0.5 | 6 | 0.3 | 1.0 | 1.5 |
| 25-29 | 106 | 2.9 | 32 | 3.2 | 25 | 1.8 | 39 | 2.0 | 2.0 | 3.1 |
| 30-34 | 229 | 6.3 | 57 | 5.7 | 101 | 7.2 | 111 | 5.6 | 9.0 | 13.8 |
| 35-39 | 489 | 13.5 | 130 | 13.0 | 151 | 10.7 | 224 | 11.3 | 14.0 | 21.5 |
| 40-44 | 608 | 16.8 | 146 | 14.6 | 216 | 15.3 | 298 | 15.0 | 10.0 | 15.4 |
| 45-49 | 636 | 17.6 | 189 | 18.9 | 241 | 17.1 | 410 | 20.6 | 10.0 | 15.4 |
| 50-54 | 524 | 14.5 | 158 | 15.8 | 206 | 14.6 | 275 | 13.8 | 7.0 | 10.8 |
| 55-59 | 362 | 10.0 | 88 | 8.8 | 164 | 11.6 | 224 | 11.3 | 4.0 | 6.2 |
| 60-64 | 276 | 7.6 | 84 | 8.4 | 120 | 8.5 | 183 | 9.2 | 6.0 | 9.2 |
| 65-69 | 205 | 5.7 | 59 | 5.9 | 93 | 6.6 | 119 | 6.0 | 1.0 | 1.5 |
| 70-74 | 91 | 2.5 | 29 | 2.9 | 50 | 3.5 | 56 | 2.8 | 0.0 | 0.0 |
| 75+ | 65 | 1.8 | 23 | 2.3 | 36 | 2.5 | 46 | 2.3 | 0.0 | 0.0 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| **All Ages** | **3617** | **100.0** | **1001** | **100.0** | **1412** | **100.0** | **1991** | **100.0** | **65** | **100.0** |
| **Mean** | 47.8 | | 47.9 | | 49.1 | | 49.4 | | 42.1 | |
| **SD** | 11.44 | | 11.78 | | 11.90 | | 11.31 | | 10.78 | |

## Fig. 12.2: Five year age group distribution - Female Breast Cancer (1999-2000)



## Table 12.3: Number(#) and Relative Proportion(%) of female breast cancers based on different methods of diagnosis (1999-2000)

| Registry | Microscopic | | Clinical | | X-ray | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 3175 | 87.8 | 5 | 0.1 | 0 | 0.0 | 437 | 12.1 | 3617 | 100.0 |
| Bangalore | 944 | 94.3 | 29 | 2.9 | 1 | 0.1 | 27 | 2.7 | 1001 | 100.0 |
| Chennai | 1293 | 91.6 | 113 | 8.0 | 0 | 0.0 | 6 | 0.4 | 1412 | 100.0 |
| Thi'puram | 1970 | 98.9 | 19 | 1.0 | 0 | 0.0 | 2 | 0.1 | 1991 | 100.0 |
| Dibrugarh | 64 | 98.5 | 0 | 0.0 | 0 | 0.0 | 1 | 1.5 | 65 | 100.0 |

## Table 12.4: Number(#) and Relative Proportion(%) of female breast cancer patients according to the clinical extent of disease (Excludes Patients Previously Treated) (1999-2000)

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 825 | 44.0 | 703 | 37.5 | 1528 | 81.4 | 348 | 18.6 | 0 | 0.0 | 1876 | 100.0 |
| Bangalore | 48 | 8.3 | 405 | 69.9 | 453 | 78.2 | 112 | 19.3 | 14 | 2.4 | 579 | 100.0 |
| Chennai | 61 | 6.9 | 642 | 72.1 | 703 | 79.0 | 187 | 21.0 | 0 | 0.0 | 890 | 100.0 |
| Thi'puram | 80 | 12.3 | 425 | 65.5 | 505 | 77.8 | 144 | 22.2 | 0 | 0.0 | 649 | 100.0 |
| Dibrugarh | 3 | 5.2 | 46 | 79.3 | 49 | 84.5 | 7 | 12.1 | 2 | 3.4 | 58 | 100.0 |

## Table 12.5: Number(#) and Relative Proportion(%) of female breast cancer patients according to Broad Groups of Treatment(Tmt) (1999-2000)

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Prior Tmt. Only | 671 | 18.6 | 187 | 18.7 | 213 | 15.1 | 184 | 9.2 | 0 | 0.0 |
| Prior & Tmt. at RI | 1070 | 29.6 | 235 | 23.5 | 309 | 21.9 | 1158 | 58.2 | 7 | 10.8 |
| Tmt. Only at RI | 1267 | 35.0 | 318 | 31.8 | 650 | 46.0 | 533 | 26.8 | 51 | 78.5 |
| No Treatment | 609 | 16.8 | 261 | 26.1 | 240 | 17.0 | 116 | 5.8 | 7 | 10.8 |
| **Total Patients** | **3617** | **100.0** | **1001** | **100.0** | **1412** | **100.0** | **1991** | **100.0** | **65** | **100.0** |

## Table 12.6: Number(#) and Relative Proportion(%) of female breast cancer patients according to Type of Treatment given (Patients treated only at Reporting Institution) (1999-2000)

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **1267** | **100.0** | **318** | **100.0** | **650** | **100.0** | **533** | **100.0** | **51** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 247 | 19.5 | 27 | 8.5 | 1 | 0.2 | 18 | 3.4 | 13 | 25.5 |
| Radiotherapy(R) | 20 | 1.6 | 9 | 2.8 | 1 | 0.2 | 10 | 1.9 | 12 | 23.5 |
| Chemotherapy(C) | 51 | 4.0 | 24 | 7.5 | 23 | 3.5 | 46 | 8.6 | 1 | 2.0 |
| S + R | 51 | 4.0 | 26 | 8.2 | 2 | 0.3 | 19 | 3.6 | 20 | 39.2 |
| S + C | 108 | 8.5 | 29 | 9.1 | 0 | 0.0 | 53 | 9.9 | 4 | 7.8 |
| R + C | 14 | 1.1 | 9 | 2.8 | 52 | 8.0 | 27 | 5.1 | 1 | 2.0 |
| S + R + C | 189 | 14.9 | 82 | 25.8 | 4 | 0.6 | 106 | 19.9 | 0 | 0.0 |
| Others | 587 | 46.3 | 112 | 35.2 | 567 | 87.2 | 254 | 47.7 | 0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 318 | 25.1 | 60 | 18.9 | 25 | 3.8 | 74 | 13.9 | 26 | 51.0 |
| Combination | 362 | 28.6 | 146 | 45.9 | 58 | 8.9 | 205 | 38.5 | 25 | 49.0 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 595 | 47.0 | 164 | 51.6 | 7 | 1.1 | 196 | 36.8 | 37 | 72.5 |
| Any R | 274 | 21.6 | 126 | 39.6 | 59 | 9.1 | 162 | 30.4 | 33 | 64.7 |
| Any C | 362 | 28.6 | 144 | 45.3 | 79 | 12.2 | 232 | 43.5 | 6 | 11.8 |

## Table 12.7: Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Female Breast (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 151 | 30.8 | 5 | 14.3 | 0 | 0.0 | 3 | 4.5 | 2 | 66.7 |
| Radiotherapy(R) | 11 | 2.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Chemotherapy(C) | 2 | 0.4 | 0 | 0.0 | 1 | 2.0 | 2 | 3.0 | 0 | 0.0 |
| S + R | 30 | 6.1 | 5 | 14.3 | 1 | 2.0 | 3 | 4.5 | 1 | 33.3 |
| S + C | 39 | 8.0 | 4 | 11.4 | 0 | 0.0 | 8 | 12.1 | 0 | 0.0 |
| R + C | 1 | 0.2 | 0 | 0.0 | 5 | 10.0 | 0 | 0.0 | 0 | 0.0 |
| S + R + C | 65 | 13.3 | 2 | 5.7 | 1 | 2.0 | 17 | 25.8 | 0 | 0.0 |
| Others | 191 | 39.0 | 19 | 54.3 | 42 | 84.0 | 33 | 50.0 | 0 | 0.0 |
| ALL TREATMENTS | 490 | 100.0 | 35 | 100.0 | 50 | 100.0 | 66 | 100.0 | 3 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 93 | 16.4 | 19 | 7.7 | 1 | 0.2 | 15 | 4.3 | 11 | 26.2 |
| Radiotherapy(R) | 2 | 0.4 | 6 | 2.4 | 1 | 0.2 | 9 | 2.6 | 7 | 16.7 |
| Chemotherapy(C) | 14 | 2.5 | 12 | 4.8 | 5 | 1.0 | 19 | 5.5 | 1 | 2.4 |
| S + R | 21 | 3.7 | 19 | 7.7 | 1 | 0.2 | 16 | 4.6 | 19 | 45.2 |
| S + C | 52 | 9.2 | 21 | 8.5 | 0 | 0.0 | 39 | 11.3 | 4 | 9.5 |
| R + C | 1 | 0.2 | 9 | 3.6 | 41 | 8.5 | 9 | 2.6 | 0 | 0.0 |
| S + R + C | 106 | 18.7 | 79 | 31.9 | 3 | 0.6 | 82 | 23.7 | 0 | 0.0 |
| Others | 278 | 49.0 | 83 | 33.5 | 431 | 89.2 | 157 | 45.4 | 0 | 0.0 |
| ALL TREATMENTS | 567 | 100.0 | 248 | 100.0 | 483 | 100.0 | 346 | 100.0 | 42 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 3 | 1.4 | 3 | 8.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 7 | 3.3 | 3 | 8.6 | 0 | 0.0 | 1 | 0.8 | 4 | 80.0 |
| Chemotherapy(C) | 35 | 16.7 | 12 | 34.3 | 17 | 14.5 | 25 | 20.7 | 0 | 0.0 |
| S + R | 0 | 0.0 | 2 | 5.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 17 | 8.1 | 4 | 11.4 | 0 | 0.0 | 6 | 5.0 | 0 | 0.0 |
| R + C | 12 | 5.7 | 0 | 0.0 | 6 | 5.1 | 18 | 14.9 | 1 | 20.0 |
| S + R + C | 18 | 8.6 | 1 | 2.9 | 0 | 0.0 | 7 | 5.8 | 0 | 0.0 |
| Others | 118 | 56.2 | 10 | 28.6 | 94 | 80.3 | 64 | 52.9 | 0 | 0.0 |
| ALL TREATMENTS | 210 | 100.0 | 35 | 100.0 | 117 | 100.0 | 121 | 100.0 | 5 | 100.0 |

## Table 12.8: Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Female Breast (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 472 | 96.3 | 201 | 41.0 | 215 | 43.9 | 191 | 39.0 | 490 |
| **Bangalore** | 35 | 100.0 | 22 | 62.9 | 17 | 48.6 | 19 | 54.3 | 35 |
| **Chennai** | 44 | 88.0 | 44 | 88.0 | 43 | 86.0 | 42 | 84.0 | 50 |
| **Thi'puram** | 63 | 95.5 | 32 | 48.5 | 35 | 53.0 | 33 | 50.0 | 66 |
| **Dibrugarh** | 3 | 100.0 | 1 | 33.3 | 0 | 0.0 | 0 | 0.0 | 3 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 527 | 92.9 | 302 | 53.3 | 408 | 72.0 | 278 | 49.0 | 567 |
| **Bangalore** | 213 | 85.9 | 181 | 73.0 | 180 | 72.6 | 83 | 33.5 | 248 |
| **Chennai** | 354 | 73.3 | 459 | 95.0 | 447 | 92.5 | 431 | 89.2 | 483 |
| **Thi'puram** | 279 | 80.6 | 207 | 59.8 | 244 | 70.5 | 157 | 45.4 | 346 |
| **Dibrugarh** | 34 | 81.0 | 26 | 61.9 | 5 | 11.9 | 0 | 0.0 | 42 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 123 | 58.6 | 109 | 51.9 | 183 | 87.1 | 118 | 56.2 | 210 |
| **Bangalore** | 13 | 37.1 | 12 | 34.3 | 23 | 65.7 | 10 | 28.6 | 35 |
| **Chennai** | 7 | 6.0 | 57 | 48.7 | 100 | 85.5 | 94 | 80.3 | 117 |
| **Thi'puram** | 27 | 22.3 | 60 | 49.6 | 96 | 79.3 | 64 | 52.9 | 121 |
| **Dibrugarh** | 0 | 0.0 | 5 | 100.0 | 1 | 20.0 | 0 | 0.0 | 5 |

# Chapter 13

## CERVIX (ICD-10: C53)

Cancer of the cervix continued to be the leading site in Bangalore, Chennai & Dibrugarh and was the second leading site in Mumbai & Thiruvananthapuram (Table 13.1).

Figure 13.1 gives the trends in actual numbers of cancer cervix. A statistically significant decline was seen in Mumbai and Dibrugarh.

Table 13.2 and Figure 13.2 give the five year age distribution of cancer cervix in different registries. The mean age varied from a low of 46.3 in Dibrugarh to 55.9 in Thiruvananthapuram.

The predominant form of diagnosis of cancer cervix was through microscopic examination (Table 13.3).

Table 13.4 gives the number and relative proportion according to the clinical extent of disease. Over 75% of patients had regional disease at the time of diagnosis.

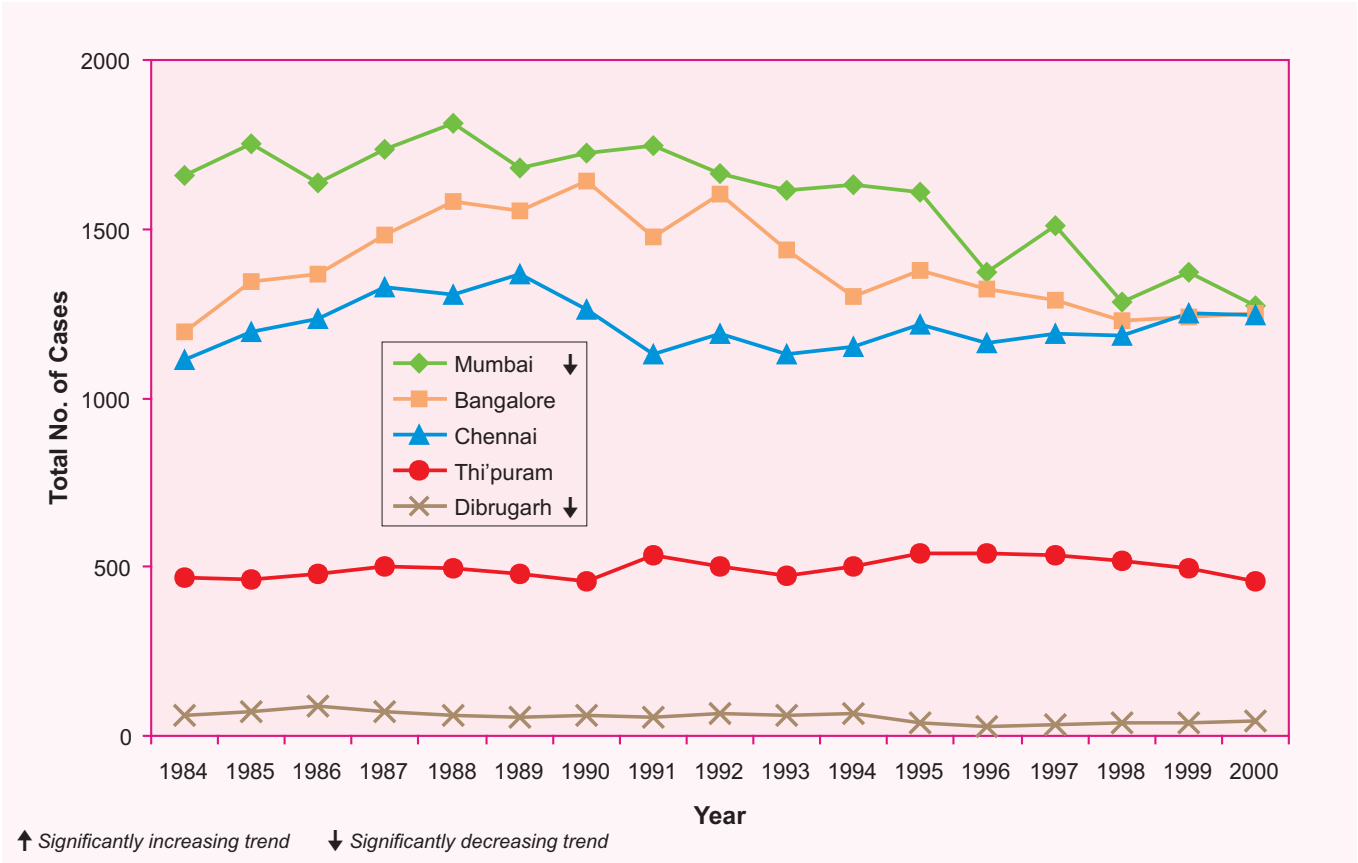
Table 13.5 gives the number and relative proportion according to the broad groups of treatment.

Tables 13.6 to 13.8 give the number and relative proportion according to the different types of treatment.

## Table 13.1: Number(#), Relative Proportion(%) and Rank(R) of cancers of the Cervix (1999-2000)

| Registry | Total | # | % | R |
|---|---|---|---|---|
| **Mumbai** | 13679 | 2643 | 19.3 | 2 |
| **Bangalore** | 7543 | 2490 | 33.0 | 1 |
| **Chennai** | 7139 | 2499 | 35.0 | 1 |
| **Thi'puram** | 7247 | 951 | 13.1 | 2 |
| **Dibrugarh** | 536 | 82 | 15.3 | 1 |

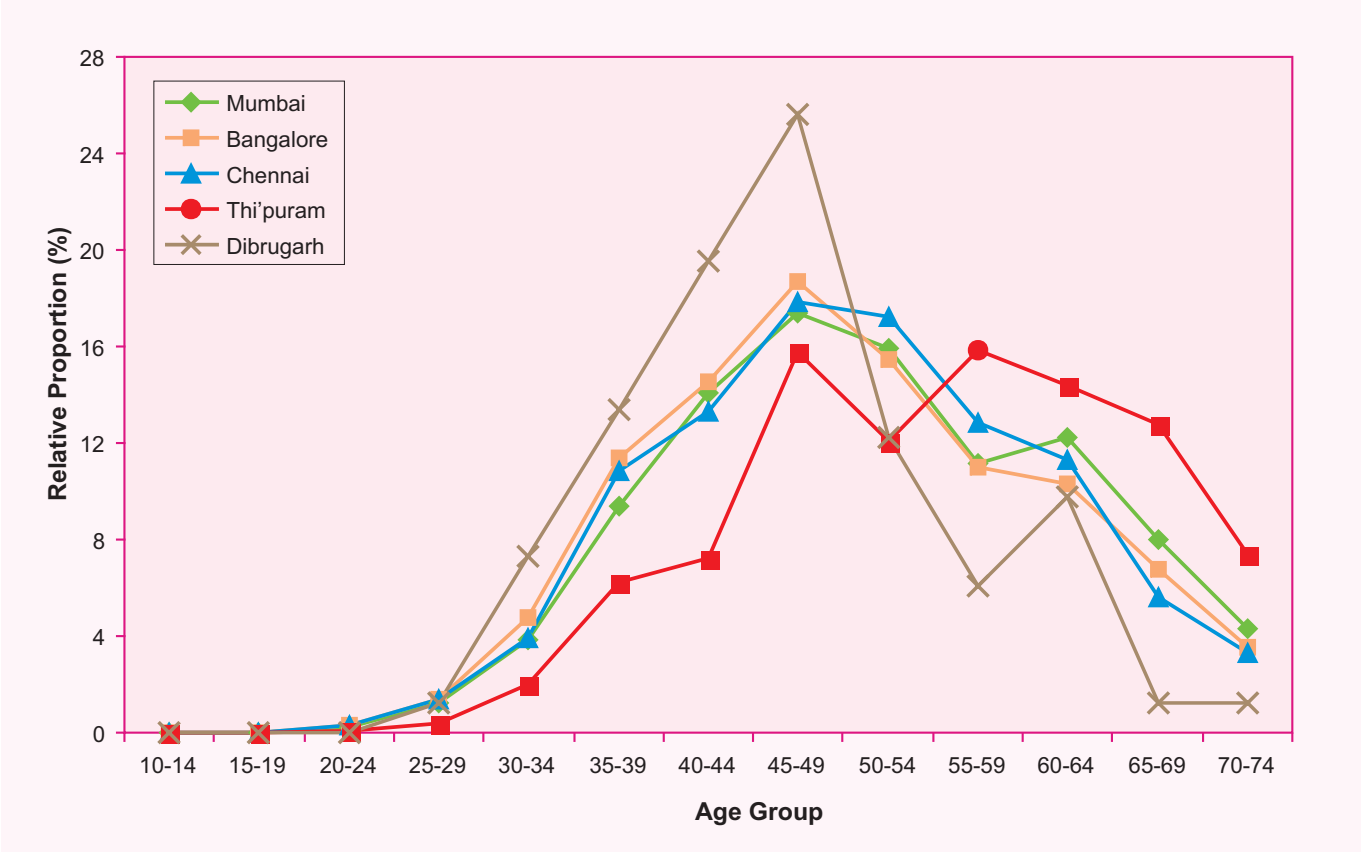
## Fig. 13.1: Trends in Actual Numbers - Cancer Cervix



## Table 13.2: Number(#) and Relative Proportion(%) of cervical cancers according to five year age group (1999-2000)

| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 0- 4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| 5- 9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| 10-14 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| 15-19 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| 20-24 | 6 | 0.2 | 8 | 0.3 | 8 | 0.3 | 1 | 0.1 | 0.0 | 0.0 |
| 25-29 | 33 | 1.2 | 35 | 1.4 | 36 | 1.4 | 4 | 0.4 | 1.0 | 1.2 |
| 30-34 | 101 | 3.8 | 121 | 4.9 | 88 | 3.5 | 19 | 2.0 | 6.0 | 7.3 |
| 35-39 | 248 | 9.4 | 282 | 11.3 | 268 | 10.7 | 58 | 6.1 | 11.0 | 13.4 |
| 40-44 | 372 | 14.1 | 358 | 14.4 | 328 | 13.1 | 69 | 7.3 | 16.0 | 19.5 |
| 45-49 | 460 | 17.4 | 466 | 18.7 | 441 | 17.6 | 149 | 15.7 | 21.0 | 25.6 |
| 50-54 | 421 | 15.9 | 381 | 15.3 | 439 | 17.6 | 115 | 12.1 | 10.0 | 12.2 |
| 55-59 | 295 | 11.2 | 273 | 11.0 | 322 | 12.9 | 150 | 15.8 | 5.0 | 6.1 |
| 60-64 | 324 | 12.3 | 257 | 10.3 | 288 | 11.5 | 137 | 14.4 | 8.0 | 9.8 |
| 65-69 | 211 | 8.0 | 171 | 6.9 | 143 | 5.7 | 123 | 12.9 | 1.0 | 1.2 |
| 70-74 | 113 | 4.3 | 90 | 3.6 | 84 | 3.4 | 70 | 7.4 | 1.0 | 1.2 |
| 75+ | 58 | 2.2 | 48 | 1.9 | 54 | 2.2 | 56 | 5.9 | 2.0 | 2.4 |
| ANS | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0.0 | 0.0 |
| **All Ages** | **2643** | **100.0** | **2490** | **100.0** | **2499** | **100.0** | **951** | **100.0** | **82** | **100.** |
| **Mean** | 50.4 | | 49.0 | | 49.8 | | 55.9 | | 46.3 | |
| **SD** | 11.32 | | 11.31 | | 10.94 | | 11.62 | | 10.15 | |

## Fig. 13.2: Five year age group distribution - Cancer Cervix (1999-2000)



## Table 13.3: Number(#) and Relative Proportion(%) of cervical cancers based on different methods of diagnosis (1999-2000)

| Registry | Microscopic | | Clinical | | X-ray | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 2477 | 93.7 | 2 | 0.1 | 0 | 0.0 | 164 | 6.2 | 2643 | 100.0 |
| Bangalore | 2389 | 95.9 | 66 | 2.7 | 0 | 0.0 | 35 | 1.4 | 2490 | 100.0 |
| Chennai | 2169 | 86.8 | 328 | 13.1 | 0 | 0.0 | 2 | 0.1 | 2499 | 100.0 |
| Thi'puram | 886 | 93.2 | 60 | 6.3 | 0 | 0.0 | 5 | 0.5 | 951 | 100.0 |
| Dibrugarh | 80 | 97.6 | 0 | 0.0 | 0 | 0.0 | 2 | 2.4 | 82 | 100.0 |

## Table 13.4: Number(#) and Relative Proportion(%) of cervical cancer patients according to the clinical extent of disease (Excludes Patients Previously Treated) (1999-2000)

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 395 | 18.5 | 1596 | 74.9 | 1991 | 93.5 | 138 | 6.5 | 1 | 0.0 | 2130 | 100.0 |
| Bangalore | 60 | 2.6 | 2018 | 88.2 | 2078 | 90.9 | 185 | 8.1 | 24 | 1.0 | 2287 | 100.0 |
| Chennai | 214 | 9.5 | 1988 | 88.4 | 2202 | 97.9 | 48 | 2.1 | 0 | 0.0 | 2250 | 100.0 |
| Thi'puram | 57 | 6.6 | 772 | 89.0 | 829 | 95.6 | 38 | 4.4 | 0 | 0.0 | 867 | 100.0 |
| Dibrugarh | 5 | 6.1 | 64 | 78.0 | 69 | 84.1 | 12 | 14.6 | 1 | 1.2 | 82 | 100.0 |

## Table 13.5: Number(#) and Relative Proportion(%) of cervical cancer patients according to Broad Groups of Treatment(Tmt) (1999-2000)

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Prior Tmt. Only | 318 | 12.0 | 96 | 3.9 | 226 | 9.0 | 19 | 2.0 | 0 | 0.0 |
| Prior & Tmt. at RI | 195 | 7.4 | 107 | 4.3 | 23 | 0.9 | 65 | 6.8 | 0 | 0.0 |
| Tmt. Only at RI | 948 | 35.9 | 1365 | 54.8 | 1000 | 40.0 | 757 | 79.6 | 70 | 85.4 |
| No Treatment | 1182 | 44.7 | 922 | 37.0 | 1250 | 50.0 | 110 | 11.6 | 12 | 14.6 |
| **Total Patients** | **2643** | **100.0** | **2490** | **100.0** | **2499** | **100.0** | **951** | **100.0** | **82** | **100.0** |

## Table 13.6: Number(#) and Relative Proportion(%) of cervical cancer patients according to Type of Treatment given (Patients treated only at Reporting Institution) (1999-2000)

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **948** | **100.0** | **1365** | **100.0** | **1000** | **100.0** | **757** | **100.0** | **70** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 62 | 6.5 | 16 | 1.2 | 7 | 0.7 | 4 | 0.5 | 2 | 2.9 |
| Radiotherapy(R) | 780 | 82.3 | 1036 | 75.9 | 901 | 90.1 | 615 | 81.2 | 62 | 88.6 |
| Chemotherapy(C) | 2 | 0.2 | 11 | 0.8 | 1 | 0.1 | 3 | 0.4 | 0 | 0.0 |
| S + R | 61 | 6.4 | 94 | 6.9 | 76 | 7.6 | 37 | 4.9 | 4 | 5.7 |
| S + C | 2 | 0.2 | 7 | 0.5 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| R + C | 36 | 3.8 | 164 | 12.0 | 14 | 1.4 | 90 | 11.9 | 1 | 1.4 |
| S + R + C | 4 | 0.4 | 37 | 2.7 | 0 | 0.0 | 4 | 0.5 | 1 | 1.4 |
| Others | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 4 | 0.5 | 0 | 0.0 |
| **Modality of therapy** | | | | | | | | | | |
| Single | 844 | 89.0 | 1063 | 77.9 | 909 | 90.9 | 622 | 82.2 | 64 | 91.4 |
| Combination | 103 | 10.9 | 302 | 22.1 | 91 | 9.1 | 131 | 17.3 | 6 | 8.6 |
| **Type of Any Treatment** | | | | | | | | | | |
| Any Surgery | 129 | 13.6 | 154 | 11.3 | 84 | 8.4 | 45 | 5.9 | 7 | 10.0 |
| Any R | 881 | 92.9 | 1331 | 97.5 | 991 | 99.1 | 746 | 98.5 | 68 | 97.1 |
| Any C | 44 | 4.6 | 219 | 16.0 | 16 | 1.6 | 97 | 12.8 | 2 | 2.9 |

## Table 13.7: Number (#) & Relative Proportion (%) of types of treatment according to Clinical Extent of Disease - Cervix (1999-2000)

| Clinical Extent | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Localised** | | | | | | | | | | |
| Surgery(S) | 52 | 33.8 | 3 | 7.9 | 6 | 4.1 | 1 | 1.9 | 1 | 20.0 |
| Radiotherapy(R) | 57 | 37.0 | 18 | 47.4 | 93 | 63.7 | 33 | 63.5 | 4 | 80.0 |
| Chemotherapy(C) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + R | 41 | 26.6 | 9 | 23.7 | 47 | 32.2 | 13 | 25.0 | 0 | 0.0 |
| S + C | 1 | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 3 | 1.9 | 4 | 10.5 | 0 | 0.0 | 5 | 9.6 | 0 | 0.0 |
| S + R + C | 0 | 0.0 | 4 | 10.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| ALL TREATMENTS | 154 | 100.0 | 38 | 100.0 | 146 | 100.0 | 52 | 100.0 | 5 | 100.0 |
| **Regional** | | | | | | | | | | |
| Surgery(S) | 10 | 1.4 | 13 | 1.0 | 1 | 0.1 | 3 | 0.4 | 1 | 1.7 |
| Radiotherapy(R) | 668 | 91.8 | 970 | 76.3 | 802 | 94.8 | 561 | 82.7 | 51 | 87.9 |
| Chemotherapy(C) | 1 | 0.1 | 10 | 0.8 | 0 | 0.0 | 2 | 0.3 | 0 | 0.0 |
| S + R | 14 | 1.9 | 85 | 6.7 | 29 | 3.4 | 24 | 3.5 | 4 | 6.9 |
| S + C | 0 | 0.0 | 6 | 0.5 | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| R + C | 30 | 4.1 | 156 | 12.3 | 13 | 1.5 | 82 | 12.1 | 1 | 1.7 |
| S + R + C | 4 | 0.5 | 32 | 2.5 | 0 | 0.0 | 4 | 0.6 | 1 | 1.7 |
| Others | 1 | 0.1 | 0 | 0.0 | 0 | 0.0 | 2 | 0.3 | 0 | 0.0 |
| ALL TREATMENTS | 728 | 100.0 | 1272 | 100.0 | 846 | 100.0 | 678 | 100.0 | 58 | 100.0 |
| **Distant** | | | | | | | | | | |
| Surgery(S) | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Radiotherapy(R) | 54 | 83.1 | 48 | 87.3 | 6 | 75.0 | 21 | 77.8 | 6 | 100.0 |
| Chemotherapy(C) | 1 | 1.5 | 1 | 1.8 | 1 | 12.5 | 1 | 3.7 | 0 | 0.0 |
| S + R | 6 | 9.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| S + C | 1 | 1.5 | 1 | 1.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| R + C | 3 | 4.6 | 4 | 7.3 | 1 | 12.5 | 3 | 11.1 | 0 | 0.0 |
| S + R + C | 0 | 0.0 | 1 | 1.8 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 7.4 | 0 | 0.0 |
| ALL TREATMENTS | 65 | 100.0 | 55 | 100.0 | 8 | 100.0 | 27 | 100.0 | 6 | 100.0 |

## Table 13.8: Number (#) and Proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Cervix (1999-2000)

| | Any Surgery | | Any Radiotherapy | | Any Chemotherapy | | Any Others | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | Patients |
| LOCALISED | | | | | | | | | |
| **Mumbai** | 94 | 61.0 | 101 | 65.6 | 4 | 2.6 | 0 | 0.0 | 154 |
| **Bangalore** | 16 | 42.1 | 35 | 92.1 | 8 | 21.1 | 0 | 0.0 | 38 |
| **Chennai** | 53 | 36.3 | 140 | 95.9 | 0 | 0.0 | 0 | 0.0 | 146 |
| **Thi'puram** | 14 | 26.9 | 51 | 98.1 | 5 | 9.6 | 0 | 0.0 | 52 |
| **Dibrugarh** | 1 | 20.0 | 4 | 80.0 | 0 | 0.0 | 0 | 0.0 | 5 |
| REGIONAL | | | | | | | | | |
| **Mumbai** | 29 | 4.0 | 716 | 98.4 | 35 | 4.8 | 1 | 0.1 | 728 |
| **Bangalore** | 136 | 10.7 | 1243 | 97.7 | 204 | 16.0 | 0 | 0.0 | 1272 |
| **Chennai** | 31 | 3.7 | 844 | 99.8 | 14 | 1.7 | 0 | 0.0 | 846 |
| **Thi'puram** | 31 | 4.6 | 671 | 99.0 | 88 | 13.0 | 2 | 0.3 | 678 |
| **Dibrugarh** | 6 | 10.3 | 57 | 98.3 | 2 | 3.4 | 0 | 0.0 | 58 |
| DISTANT | | | | | | | | | |
| **Mumbai** | 7 | 10.8 | 63 | 96.9 | 5 | 7.7 | 0 | 0.0 | 65 |
| **Bangalore** | 2 | 3.6 | 53 | 96.4 | 7 | 12.7 | 0 | 0.0 | 55 |
| **Chennai** | 0 | 0.0 | 7 | 87.5 | 2 | 25.0 | 0 | 0.0 | 8 |
| **Thi'puram** | 0 | 0.0 | 24 | 88.9 | 4 | 14.8 | 2 | 7.4 | 27 |
| **Dibrugarh** | 0 | 0.0 | 6 | 100.0 | 0 | 0.0 | 0 | 0.0 | 6 |

# Chapter 14

## HEAD AND NECK CANCERS
## (ICD-10: C00-14, C30-31, C32, C33)

Chapter 14 gives a comprehensive picture of Head and Neck cancers. These include cancer of the Lip, Tongue, Mouth, Salivary glands, Oropharynx, Nasopharynx, Hypopharynx, Pharynx, Nose and Sinus, Larynx and Trachea.

Table 14.1 gives the number and relative proportion of Head and Neck cancers relative to all sites of cancers. Overall, Head and Neck cancers accounted for one-third of all cancers in males and one-eighth of all cancers in females.

Figure 14.2 and Table 14.2 depicts the relative proportion of specific sites that constitute Head & Neck cancer. Table 14.3 gives the number and relative proportion of specific sites of Head and Neck cancers relative to all sites of cancer.

Table 14.4 and Figure 14.3 give the five year age distribution of this group of cancers.

Table 14.5 gives the number and relative proportion based on different methods of diagnosis.

Table 14.6 gives the idea of the broad treatment groups. Over 60% of cancers in males had regional spread of the disease at the time of diagnosis.

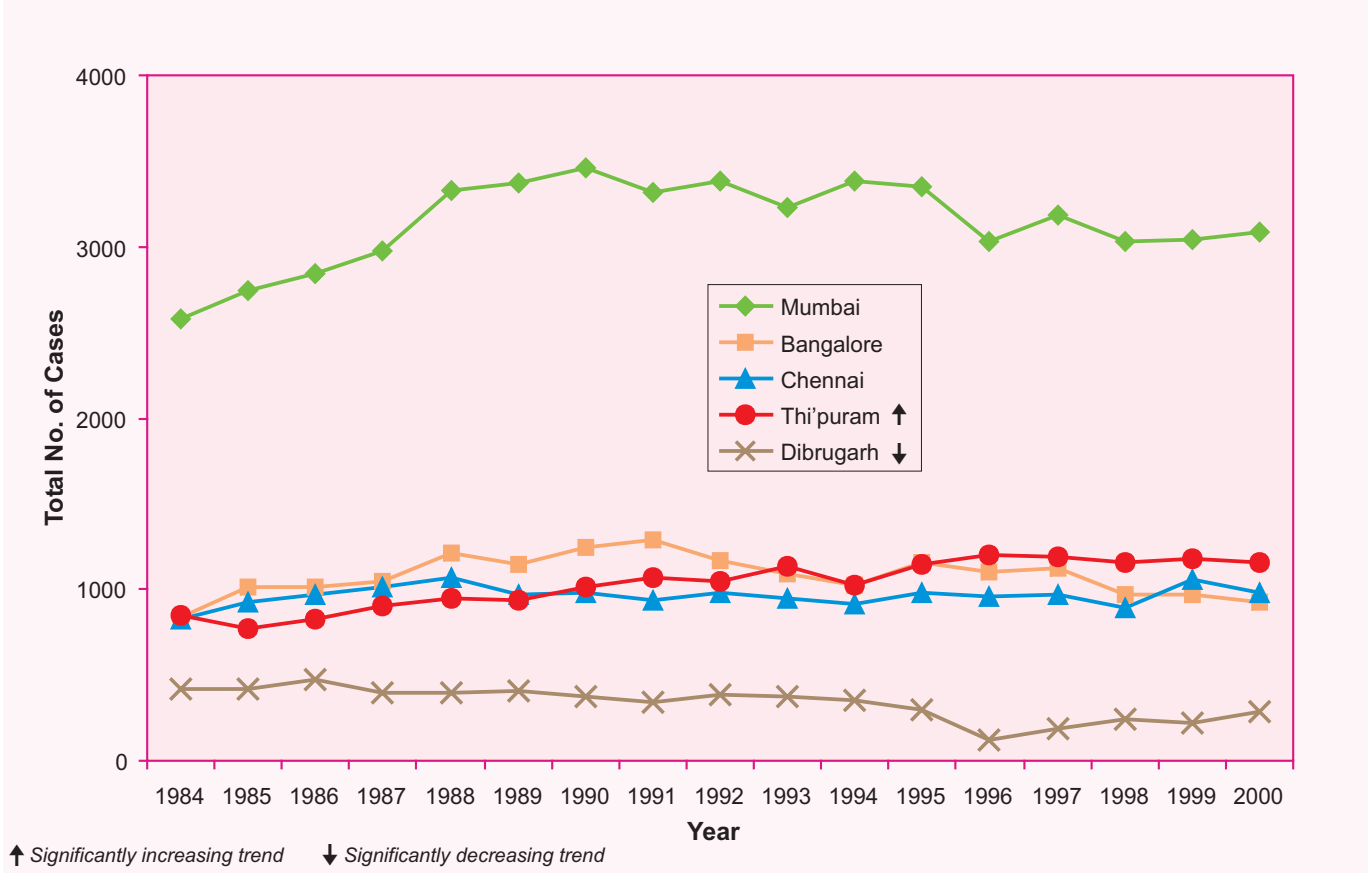
Table 14.8 gives the number and relative proportion according to the type of treatment.

**Table 14.1 : Number(#) & Proportion(%) of Head and Neck Cancers relative to all sites of cancer (1999-2000)**

| Registry | Males | | | Females | | |
|---|---|---|---|---|---|---|
| | All sites | # | % | All sites | # | % |
| **Mumbai** | 17637 | 6123 | 34.7 | 13679 | 1564 | 11.4 |
| **Bangalore** | 6106 | 1901 | 31.1 | 7543 | 1242 | 16.5 |
| **Chennai** | 6195 | 2043 | 33.0 | 7139 | 884 | 12.4 |
| **Thi'puram** | 7850 | 2342 | 29.8 | 7247 | 829 | 11.4 |
| **Dibrugarh** | 997 | 502 | 50.4 | 536 | 116 | 21.6 |
| **All Registries** | **38785** | **12911** | **33.3** | **36144** | **4635** | **12.8** |

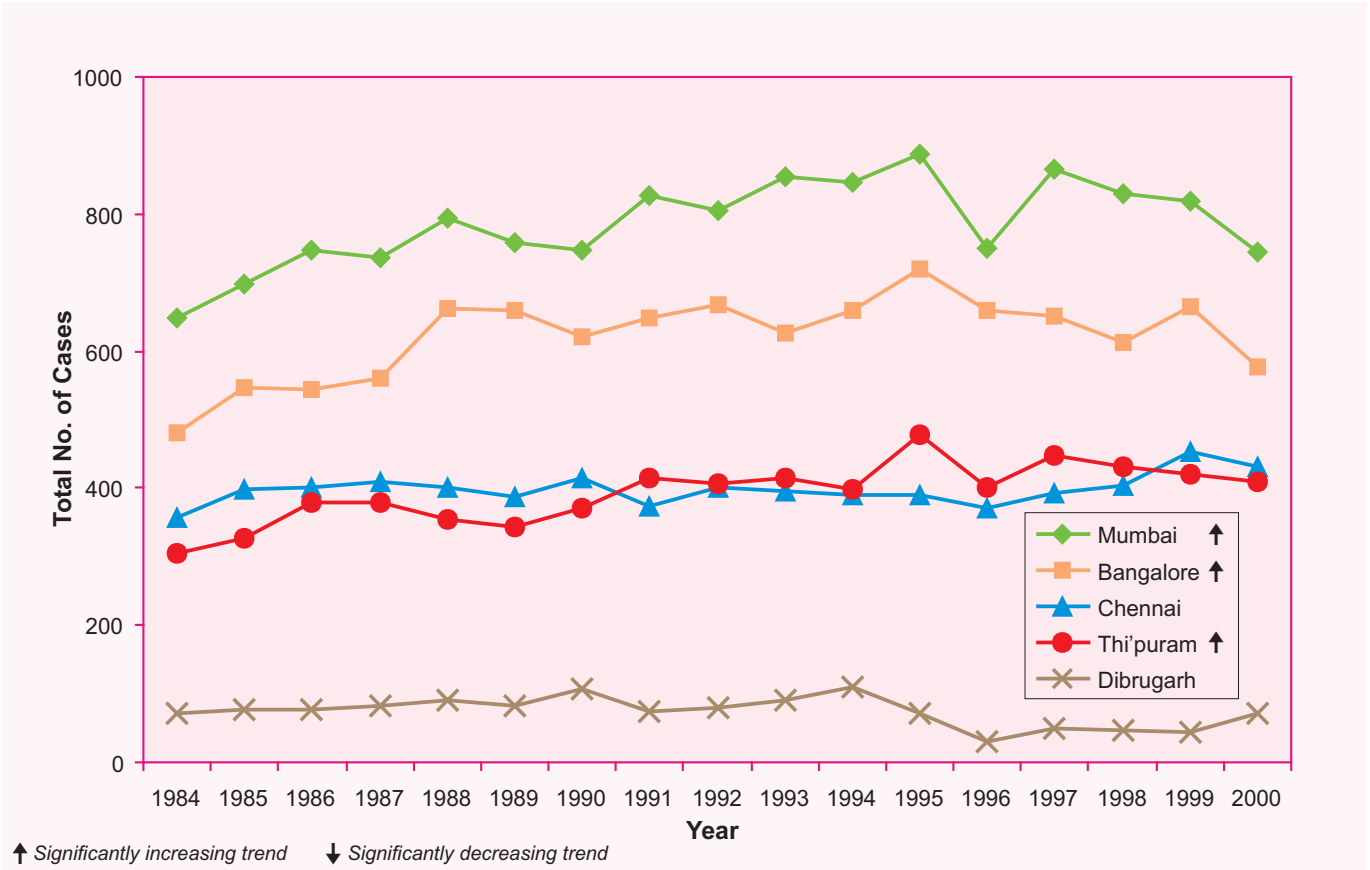
## Fig. 14.1: Trends in Actual Numbers - Head and Neck Cancers (1999-2000)

### Males



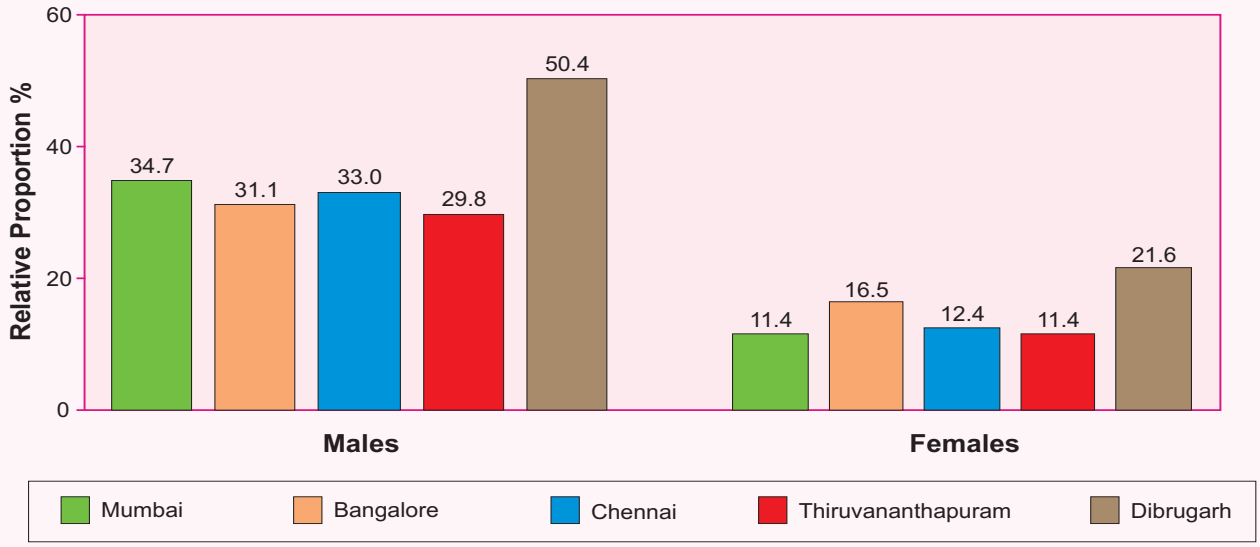

↑ *Significantly increasing trend* ↓ *Significantly decreasing trend*

### Females

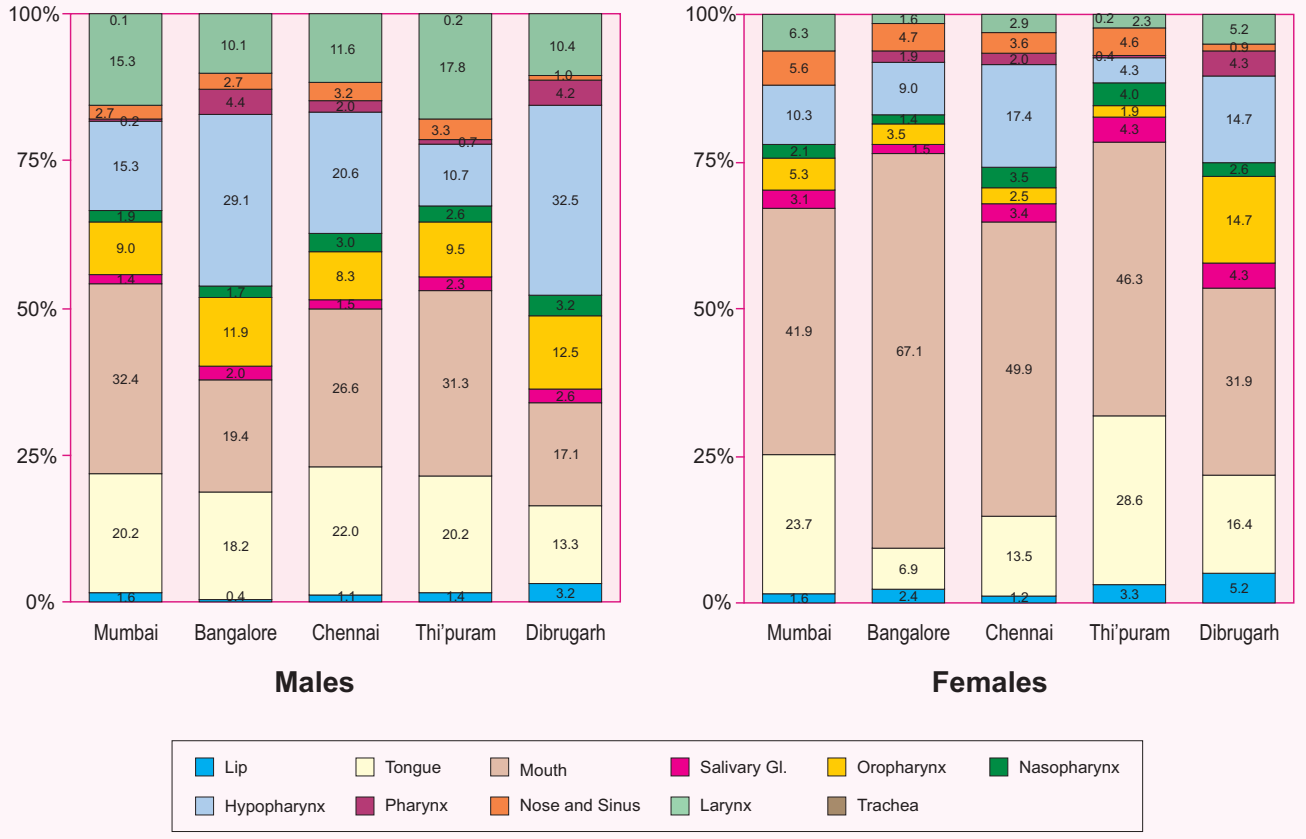



↑ *Significantly increasing trend* ↓ *Significantly decreasing trend*

## Fig. 14.2: Proportion(%) of Head and Neck Cancers Relative to All Sites (1999-2000)




## Fig. 14.3: Stack(100%) diagram showing Proportion of Specific Head and Neck Cancer Sites Relative to All Head and Neck Cancers (1999-2000)



## Table 14.2: Number(#) & Relative Proportion(%) of specific Head and Neck sites relative to all sites of cancer (1999-2000)

### Males

| Sites of Cancer | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Lip | 96 | 0.5 | 7 | 0.1 | 22 | 0.4 | 32 | 0.4 | 16 | 1.6 |
| Tongue | 1236 | 7.0 | 346 | 5.7 | 450 | 7.3 | 473 | 6.0 | 67 | 6.7 |
| Mouth | 1986 | 11.3 | 368 | 6.0 | 544 | 8.8 | 734 | 9.3 | 86 | 8.6 |
| Salivary Gl. | 84 | 0.5 | 38 | 0.6 | 31 | 0.5 | 54 | 0.7 | 13 | 1.3 |
| Oropharynx | 554 | 3.1 | 227 | 3.7 | 170 | 2.7 | 222 | 2.8 | 63 | 6.3 |
| Nasopharynx | 115 | 0.7 | 33 | 0.5 | 62 | 1.0 | 61 | 0.8 | 16 | 1.6 |
| Hypopharynx | 935 | 5.3 | 554 | 9.1 | 420 | 6.8 | 250 | 3.2 | 163 | 16.3 |
| Pharynx etc. | 12 | 0.1 | 84 | 1.4 | 41 | 0.7 | 17 | 0.2 | 21 | 2.1 |
| Nose & sinus | 163 | 0.9 | 52 | 0.9 | 65 | 1.0 | 78 | 1.0 | 5 | 0.5 |
| Larynx | 937 | 5.3 | 192 | 3.1 | 238 | 3.8 | 417 | 5.3 | 52 | 5.2 |
| Trachea | 5 | 0.0 | 0 | 0.0 | 0 | 0.0 | 4 | 0.1 | 0 | 0.0 |
| Head & Neck | 6123 | 34.7 | 1901 | 31.1 | 2043 | 33.0 | 2342 | 29.8 | 502 | 50.4 |
| **All Sites** | **17637** | **100.0** | **6106** | **100.0** | **6195** | **100.0** | **7859** | **100.0** | **997** | **100.0** |

### Females

| Sites of Cancer | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Lip | 25 | 0.2 | 30 | 0.4 | 11 | 0.2 | 27 | 0.4 | 6 | 1.1 |
| Tongue | 370 | 2.7 | 86 | 1.1 | 119 | 1.7 | 237 | 3.3 | 19 | 3.5 |
| Mouth | 656 | 4.8 | 833 | 11.0 | 441 | 6.2 | 384 | 5.3 | 37 | 6.9 |
| Salivary Gl. | 49 | 0.4 | 19 | 0.3 | 30 | 0.4 | 36 | 0.5 | 5 | 0.9 |
| Oropharynx | 83 | 0.6 | 44 | 0.6 | 22 | 0.3 | 16 | 0.2 | 17 | 3.2 |
| Nasopharynx | 33 | 0.2 | 17 | 0.2 | 31 | 0.4 | 33 | 0.5 | 3 | 0.6 |
| Hypopharynx | 161 | 1.2 | 112 | 1.5 | 154 | 2.2 | 36 | 0.5 | 17 | 3.2 |
| Pharynx etc. | 0 | 0.0 | 23 | 0.3 | 18 | 0.3 | 3 | 0.0 | 5 | 0.9 |
| Nose & sinus | 88 | 0.6 | 58 | 0.8 | 32 | 0.4 | 38 | 0.5 | 1 | 0.2 |
| Larynx | 99 | 0.7 | 20 | 0.3 | 26 | 0.4 | 19 | 0.3 | 6 | 1.1 |
| Trachea | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Head & Neck | 1564 | 11.4 | 1242 | 16.5 | 884 | 12.4 | 829 | 11.4 | 116 | 21.6 |
| **All Sites** | **13679** | **100.0** | **7543** | **100.0** | **7139** | **100.0** | **7247** | **100.0** | **536** | **100.0** |

## Table 14.3 : Number(#) & Relative Proportion(%) of specific Head and Neck sites relative to all head and neck cancers (1999-2000)

### Males

| Sites of Cancer | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Lip | 96 | 1.6 | 7 | 0.4 | 22 | 1.1 | 32 | 1.4 | 16 | 3.2 |
| Tongue | 1236 | 20.2 | 346 | 18.2 | 450 | 22.0 | 473 | 20.2 | 67 | 13.3 |
| Mouth | 1986 | 32.4 | 368 | 19.4 | 544 | 26.6 | 734 | 31.3 | 86 | 17.1 |
| Salivary Gl. | 84 | 1.4 | 38 | 2.0 | 31 | 1.5 | 54 | 2.3 | 13 | 2.6 |
| Oropharynx | 554 | 9.0 | 227 | 11.9 | 170 | 8.3 | 222 | 9.5 | 63 | 12.5 |
| Nasopharynx | 115 | 1.9 | 33 | 1.7 | 62 | 3.0 | 61 | 2.6 | 16 | 3.2 |
| Hypopharynx | 935 | 15.3 | 554 | 29.1 | 420 | 20.6 | 250 | 10.7 | 163 | 32.5 |
| Pharynx etc. | 12 | 0.2 | 84 | 4.4 | 41 | 2.0 | 17 | 0.7 | 21 | 4.2 |
| Nose & sinus | 163 | 2.7 | 52 | 2.7 | 65 | 3.2 | 78 | 3.3 | 5 | 1.0 |
| Larynx | 937 | 15.3 | 192 | 10.1 | 238 | 11.6 | 417 | 17.8 | 52 | 10.4 |
| Trachea | 5 | 0.1 | 0 | 0.0 | 0 | 0.0 | 4 | 0.2 | 0 | 0.0 |
| **Head & Neck** | **6123** | **100.0** | **1901** | **100.0** | **2043** | **100.0** | **2342** | **100.0** | **502** | **100.0** |

### Females

| Sites of Cancer | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Lip | 25 | 1.6 | 30 | 2.4 | 11 | 1.2 | 27 | 3.3 | 6 | 5.2 |
| Tongue | 370 | 23.7 | 86 | 6.9 | 119 | 13.5 | 237 | 28.6 | 19 | 16.4 |
| Mouth | 656 | 41.9 | 833 | 67.1 | 441 | 49.9 | 384 | 46.3 | 37 | 31.9 |
| Salivary Gl. | 49 | 3.1 | 19 | 1.5 | 30 | 3.4 | 36 | 4.3 | 5 | 4.3 |
| Oropharynx | 83 | 5.3 | 44 | 3.5 | 22 | 2.5 | 16 | 1.9 | 17 | 14.7 |
| Nasopharynx | 33 | 2.1 | 17 | 1.4 | 31 | 3.5 | 33 | 4.0 | 3 | 2.6 |
| Hypopharynx | 161 | 10.3 | 112 | 9.0 | 154 | 17.4 | 36 | 4.3 | 17 | 14.7 |
| Pharynx etc. | 0 | 0.0 | 23 | 1.9 | 18 | 2.0 | 3 | 0.4 | 5 | 4.3 |
| Nose & sinus | 88 | 5.6 | 58 | 4.7 | 32 | 3.6 | 38 | 4.6 | 1 | 0.9 |
| Larynx | 99 | 6.3 | 20 | 1.6 | 26 | 2.9 | 19 | 2.3 | 6 | 5.2 |
| Trachea | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **Head & Neck** | **1564** | **100.0** | **1242** | **100.0** | **884** | **100.0** | **829** | **100.0** | **116** | **100.0** |

## Table 14.4: Number(#) and Relative Proportion(%) of Head and Neck Cancers by five-year age groups (1999-2000)

### Males

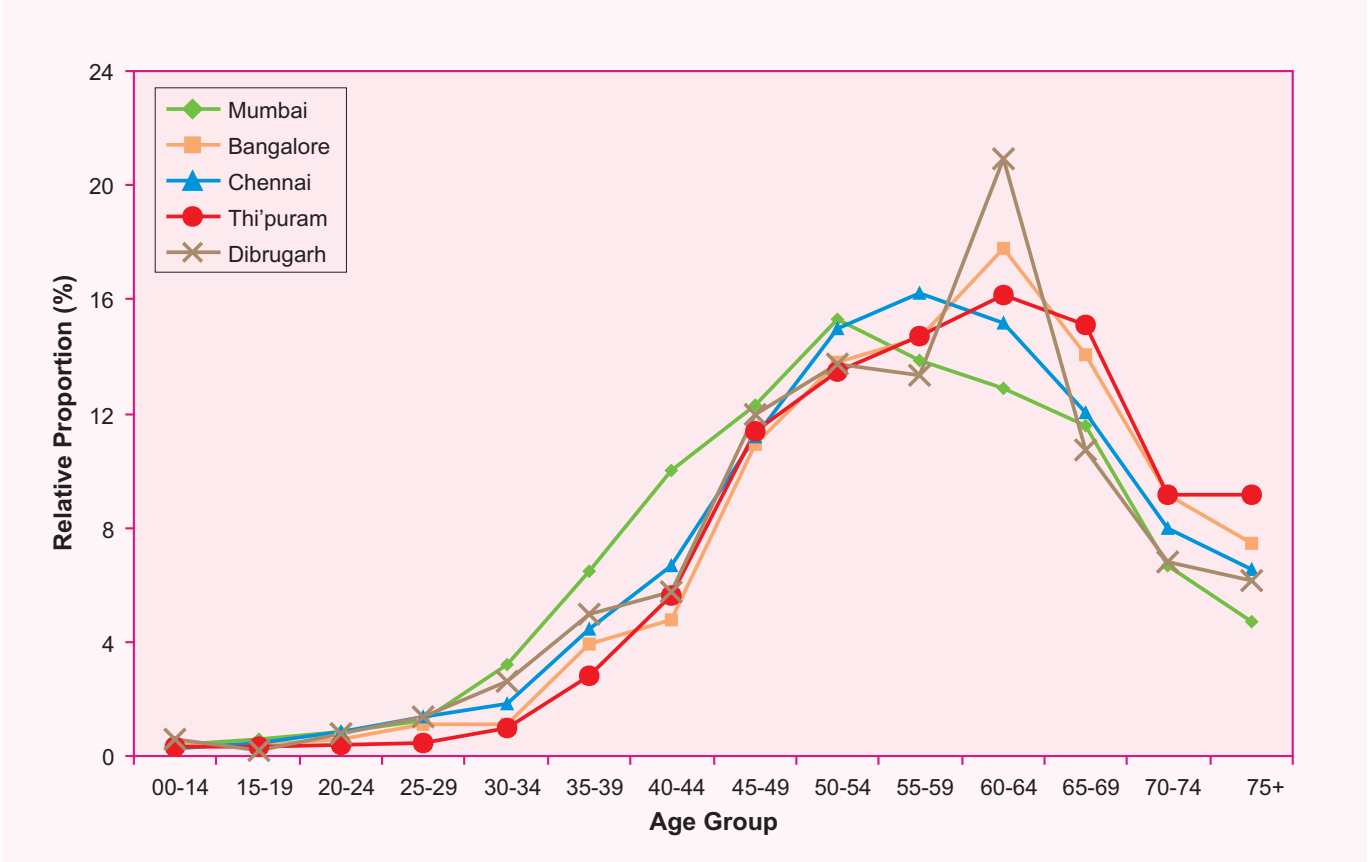
| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 00-14 | 23 | 0.4 | 8 | 0.4 | 6 | 0.3 | 8 | 0.3 | 3 | 0.6 |
| 15-19 | 35 | 0.6 | 7 | 0.4 | 10 | 0.5 | 7 | 0.3 | 1 | 0.2 |
| 20-24 | 51 | 0.8 | 11 | 0.6 | 18 | 0.9 | 9 | 0.4 | 4 | 0.8 |
| 25-29 | 78 | 1.3 | 21 | 1.1 | 28 | 1.4 | 11 | 0.5 | 7 | 1.4 |
| 30-34 | 197 | 3.2 | 21 | 1.1 | 37 | 1.8 | 23 | 1.0 | 13 | 2.6 |
| 35-39 | 395 | 6.5 | 74 | 3.9 | 91 | 4.5 | 66 | 2.8 | 25 | 5.0 |
| 40-44 | 611 | 10.0 | 91 | 4.8 | 136 | 6.7 | 131 | 5.6 | 29 | 5.8 |
| 45-49 | 752 | 12.3 | 207 | 10.9 | 228 | 11.2 | 267 | 11.4 | 60 | 12.0 |
| 50-54 | 937 | 15.3 | 262 | 13.8 | 306 | 15.0 | 315 | 13.5 | 69 | 13.7 |
| 55-59 | 850 | 13.9 | 278 | 14.6 | 331 | 16.2 | 344 | 14.7 | 67 | 13.3 |
| 60-64 | 788 | 12.9 | 338 | 17.8 | 310 | 15.2 | 378 | 16.1 | 105 | 20.9 |
| 65-69 | 709 | 11.6 | 267 | 14.0 | 246 | 12.0 | 354 | 15.1 | 54 | 10.8 |
| 70-74 | 407 | 6.6 | 174 | 9.2 | 163 | 8.0 | 214 | 9.1 | 34 | 6.8 |
| 75+ | 290 | 4.7 | 142 | 7.5 | 133 | 6.5 | 215 | 9.2 | 31 | 6.2 |
| **All ages** | **6123** | **100.0** | **1901** | **100.0** | **2043** | **100.0** | **2342** | **100.0** | **502** | **100.0** |
| **Mean** | 53.5 | | 56.7 | | 55.6 | | 58.4 | | 54.9 | |
| **SD** | 12.90 | | 12.41 | | 12.68 | | 12.21 | | 12.99 | |

### Females

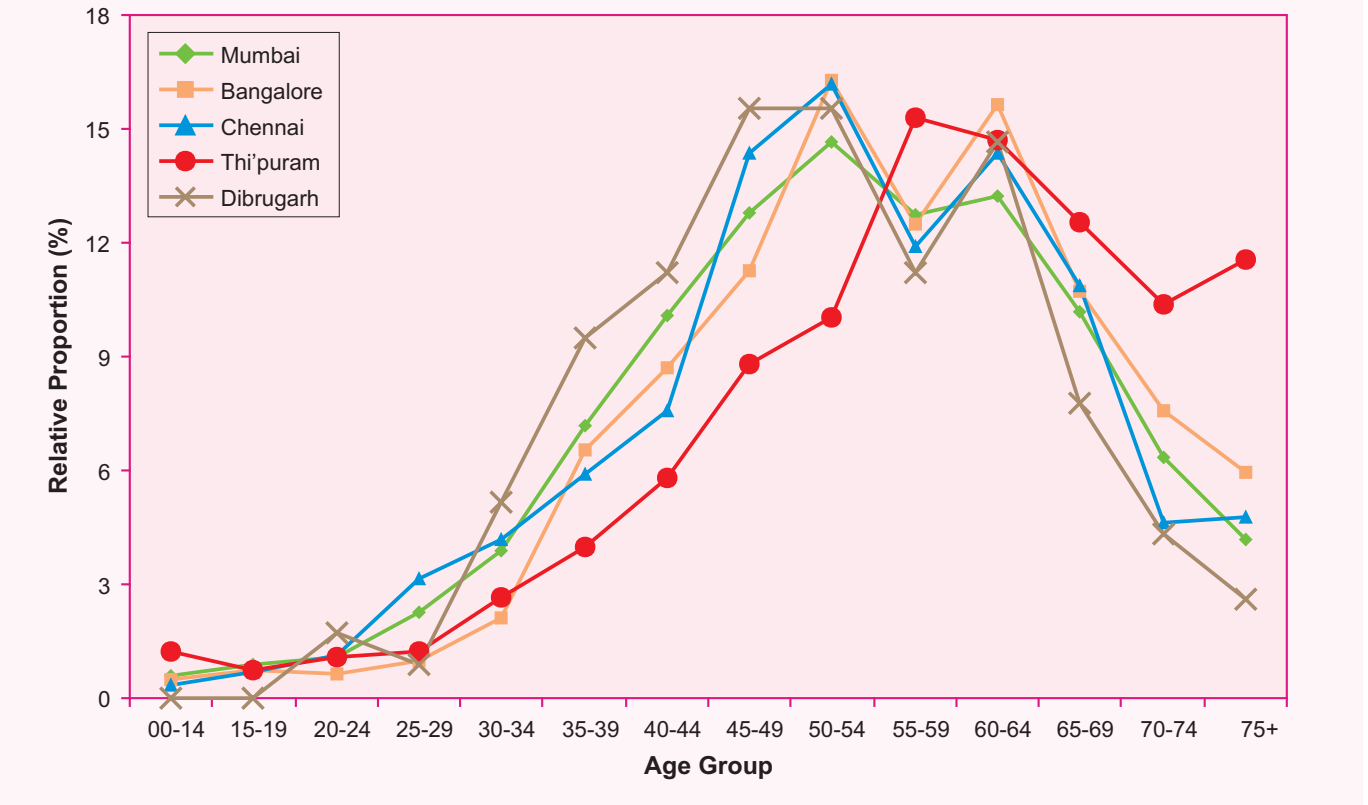
| Age Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| 00-14 | 9 | 0.6 | 6 | 0.5 | 3 | 0.3 | 10 | 1.2 | 0 | 0.0 |
| 15-19 | 14 | 0.9 | 9 | 0.7 | 6 | 0.7 | 6 | 0.7 | 0 | 0.0 |
| 20-24 | 17 | 1.1 | 8 | 0.6 | 10 | 1.1 | 9 | 1.1 | 2 | 1.7 |
| 25-29 | 35 | 2.2 | 12 | 1.0 | 28 | 3.2 | 10 | 1.2 | 1 | 0.9 |
| 30-34 | 61 | 3.9 | 26 | 2.1 | 37 | 4.2 | 22 | 2.7 | 6 | 5.2 |
| 35-39 | 112 | 7.2 | 81 | 6.5 | 52 | 5.9 | 33 | 4.0 | 11 | 9.5 |
| 40-44 | 158 | 10.1 | 108 | 8.7 | 67 | 7.6 | 48 | 5.8 | 13 | 11.2 |
| 45-49 | 200 | 12.8 | 140 | 11.3 | 127 | 14.4 | 73 | 8.8 | 18 | 15.5 |
| 50-54 | 229 | 14.6 | 202 | 16.3 | 143 | 16.2 | 83 | 10.0 | 18 | 15.5 |
| 55-59 | 199 | 12.7 | 155 | 12.5 | 105 | 11.9 | 127 | 15.3 | 13 | 11.2 |
| 60-64 | 207 | 13.2 | 194 | 15.6 | 127 | 14.4 | 122 | 14.7 | 17 | 14.7 |
| 65-69 | 159 | 10.2 | 133 | 10.7 | 96 | 10.9 | 104 | 12.5 | 9 | 7.8 |
| 70-74 | 99 | 6.3 | 94 | 7.6 | 41 | 4.6 | 86 | 10.4 | 5 | 4.3 |
| 75+ | 65 | 4.2 | 74 | 6.0 | 42 | 4.8 | 96 | 11.6 | 3 | 2.6 |
| **All ages** | **1564** | **100.0** | **1242** | **100.0** | **884** | **100.0** | **829** | **100.0** | **116** | **100.0** |
| **Mean** | 52.0 | | 53.7 | | 52.1 | | 57.3 | | 50.2 | |
| **SD** | 13.48 | | 13.08 | | 13.30 | | 14.69 | | 12.45 | |

## Fig. 14.4: Relative Proportion(%) of Head and Neck Cancers by Five Year Age Group (1999-2000)

### Males




### Females



## Table 14.5: Number(#) & Relative Proportion(%) of head and neck cancers based on different methods of diagnosis (1999-2000)

| Registry | Microscopic | | Clinical | | X-ray | | Others | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | |
| **Mumbai** | 5752 | 93.9 | 1 | 0.0 | 5 | 0.1 | 365 | 6.0 | 6123 | 100.0 |
| **Bangalore** | 1798 | 94.6 | 2 | 0.1 | 99 | 5.2 | 2 | 0.1 | 1901 | 100.0 |
| **Chennai** | 1386 | 67.8 | 3 | 0.1 | 650 | 31.8 | 4 | 0.2 | 2043 | 100.0 |
| **Thi'puram** | 2247 | 95.9 | 0 | 0.0 | 92 | 3.9 | 3 | 0.1 | 2342 | 100.0 |
| **Dibrugarh** | 499 | 99.4 | 0 | 0.0 | 1 | 0.2 | 2 | 0.4 | 502 | 100.0 |
| **Females** | | | | | | | | | | |
| **Mumbai** | 1489 | 95.2 | 0 | 0.0 | 3 | 0.2 | 72 | 4.6 | 1564 | 100.0 |
| **Bangalore** | 1204 | 96.9 | 2 | 0.2 | 34 | 2.7 | 2 | 0.2 | 1242 | 100.0 |
| **Chennai** | 622 | 70.4 | 0 | 0.0 | 262 | 29.6 | 0 | 0.0 | 884 | 100.0 |
| **Thi'puram** | 774 | 93.4 | 0 | 0.0 | 52 | 6.3 | 3 | 0.4 | 829 | 100.0 |
| **Dibrugarh** | 116 | 100.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 116 | 100.0 |

## Table 14.6: Number(#) & Relative Proportion(%) of head and neck cancers based on broad groups of treatment (1999-2000)

| Treatment Group | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Males** | | | | | | | | | | |
| Prior Tmt. Only | 580 | 9.5 | 80 | 4.2 | 287 | 14.0 | 69 | 2.9 | 0 | 0.0 |
| Prior & Tmt. at RI | 313 | 5.1 | 21 | 1.1 | 30 | 1.5 | 167 | 7.1 | 12 | 2.4 |
| Tmt. Only at RI | 2342 | 38.2 | 826 | 43.5 | 783 | 38.3 | 1739 | 74.3 | 455 | 90.6 |
| No CDT* | 2888 | 47.2 | 974 | 51.2 | 943 | 46.2 | 367 | 15.7 | 35 | 7.0 |
| **Total Patients** | **6123** | **100.0** | **1901** | **100.0** | **2043** | **100.0** | **2342** | **100.0** | **502** | **100.0** |
| **Females** | | | | | | | | | | |
| Prior Tmt. Only | 117 | 7.5 | 29 | 2.3 | 100 | 11.3 | 27 | 3.3 | 0 | 0.0 |
| Prior & Tmt. at RI | 69 | 4.4 | 17 | 1.4 | 18 | 2.0 | 75 | 9.0 | 0 | 0.0 |
| Tmt. Only at RI | 693 | 44.3 | 586 | 47.2 | 378 | 42.8 | 593 | 71.5 | 111 | 95.7 |
| No CDT* | 685 | 43.8 | 610 | 49.1 | 388 | 43.9 | 134 | 16.2 | 5 | 4.3 |
| **Total Patients** | **1564** | **100.0** | **1242** | **100.0** | **884** | **100.0** | **829** | **100.0** | **116** | **100.0** |

## Table 14.7: Number(#) and Relative Proportion(%) of Head and Neck cancer patients according to Clinical Extent of Disease (Excludes Patients Previously Treated) (1999-2000)

### Males

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 1616 | 30.9 | 3273 | 62.6 | 4889 | 93.5 | 341 | 6.5 | 0 | 0.0 | 5230 | 100.0 |
| Bangalore | 126 | 7.0 | 1543 | 85.7 | 1669 | 92.7 | 109 | 6.1 | 22 | 1.2 | 1800 | 100.0 |
| Chennai | 193 | 11.2 | 1514 | 87.7 | 1707 | 98.9 | 19 | 1.1 | 0 | 0.0 | 1726 | 100.0 |
| Thi'puram | 332 | 15.8 | 1715 | 81.4 | 2047 | 97.2 | 59 | 2.8 | 0 | 0.0 | 2106 | 100.0 |
| Dibrugarh | 39 | 8.0 | 419 | 85.5 | 458 | 93.5 | 11 | 2.2 | 21 | 4.3 | 490 | 100.0 |

### Females

| Registry | Localised (L) | | Regional (R) | | L + R | | Distant | | Others | | All Stages | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| Mumbai | 495 | 35.9 | 805 | 58.4 | 1300 | 94.3 | 77 | 5.6 | 1 | 0.1 | 1378 | 100.0 |
| Bangalore | 78 | 6.5 | 1008 | 84.3 | 1086 | 90.8 | 87 | 7.3 | 23 | 1.9 | 1196 | 100.0 |
| Chennai | 70 | 9.1 | 693 | 90.5 | 763 | 99.6 | 3 | 0.1 | 0 | 0.0 | 766 | 100.0 |
| Thi'puram | 127 | 17.5 | 580 | 79.8 | 707 | 97.3 | 20 | 2.8 | 0 | 0.0 | 727 | 100.0 |
| Dibrugarh | 19 | 16.4 | 93 | 80.2 | 112 | 96.6 | 1 | 0.9 | 3 | 2.6 | 116 | 100.0 |

## Table 14.8: Number (#) & Relative Proportion (%) of head and neck cancer patients according to Type of Treatment given (1999-2000)

### Males

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **5667** | **100.0** | **2227** | **100.0** | **1828** | **100.0** | **4766** | **100.0** | **832** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 1635 | 28.9 | 349 | 15.7 | 235 | 12.9 | 164 | 3.4 | 49 | 5.9 |
| Radiotherapy(R) | 877 | 15.5 | 820 | 36.8 | 714 | 39.1 | 2012 | 42.2 | 635 | 76.3 |
| Chemotherapy(C) | 1200 | 21.2 | 396 | 17.8 | 389 | 21.3 | 1035 | 21.7 | 69 | 8.3 |
| S + R | 788 | 13.9 | 264 | 11.9 | 174 | 9.5 | 218 | 4.6 | 37 | 4.4 |
| S + C | 230 | 4.1 | 88 | 4.0 | 59 | 3.2 | 64 | 1.3 | 16 | 1.9 |
| R + C | 695 | 12.3 | 242 | 10.9 | 166 | 9.1 | 790 | 16.6 | 20 | 2.4 |
| S + R + C | 142 | 2.5 | 48 | 2.2 | 34 | 1.9 | 54 | 1.1 | 3 | 0.4 |
| Others | 100 | 1.8 | 20 | 0.9 | 57 | 3.1 | 429 | 9.0 | 3 | 0.4 |
| **Modality of therapy*** | | | | | | | | | | |
| Single | 3712 | 65.5 | 1565 | 70.3 | 1338 | 73.2 | 3211 | 67.4 | 753 | 90.5 |
| Combination | 1855 | 32.7 | 642 | 28.8 | 433 | 23.7 | 1126 | 23.6 | 76 | 9.1 |
| **Type of Any Treatment*** | | | | | | | | | | |
| Any Surgery | 2795 | 49.3 | 749 | 33.6 | 502 | 27.5 | 500 | 10.5 | 105 | 12.6 |
| Any R | 2502 | 44.2 | 1374 | 61.7 | 1088 | 59.5 | 3074 | 64.5 | 695 | 83.5 |
| Any C | 2267 | 40.0 | 774 | 34.8 | 648 | 35.4 | 1943 | 40.8 | 108 | 13.0 |

### Females

| Type of Treatment | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **Total patients** | **4470** | **100.0** | **3334** | **100.0** | **2616** | **100.0** | **3325** | **100.0** | **430** | **100.0** |
| **Specific Treatments** | | | | | | | | | | |
| Surgery(S) | 1140 | 25.5 | 294 | 8.8 | 109 | 4.2 | 143 | 4.3 | 47 | 10.9 |
| Radiotherapy(R) | 1046 | 23.4 | 1506 | 45.2 | 1302 | 49.8 | 1247 | 37.5 | 254 | 59.1 |
| Chemotherapy(C) | 531 | 11.9 | 364 | 10.9 | 223 | 8.5 | 659 | 19.8 | 39 | 9.1 |
| S + R | 377 | 8.4 | 367 | 11.0 | 152 | 5.8 | 208 | 6.3 | 44 | 10.2 |
| S + C | 309 | 6.9 | 166 | 5.0 | 56 | 2.1 | 158 | 4.8 | 39 | 9.1 |
| R + C | 235 | 5.3 | 336 | 10.1 | 151 | 5.8 | 363 | 10.9 | 5 | 1.2 |
| S + R + C | 240 | 5.4 | 157 | 4.7 | 24 | 0.9 | 144 | 4.3 | 1 | 0.2 |
| Others | 592 | 13.2 | 144 | 4.3 | 599 | 22.9 | 403 | 12.1 | 1 | 0.2 |
| **Modality of therapy*** | | | | | | | | | | |
| Single | 2717 | 60.8 | 2164 | 64.9 | 1634 | 62.5 | 2049 | 61.6 | 340 | 79.1 |
| Combination | 1161 | 26.0 | 1026 | 30.8 | 383 | 14.6 | 873 | 26.3 | 89 | 20.7 |
| **Type of Any Treatment*** | | | | | | | | | | |
| Any Surgery | 2066 | 46.2 | 984 | 29.5 | 341 | 13.0 | 653 | 19.6 | 131 | 30.5 |
| Any R | 1898 | 42.5 | 2366 | 71.0 | 1629 | 62.3 | 1962 | 59.0 | 304 | 70.7 |
| Any C | 1315 | 29.4 | 1023 | 30.7 | 454 | 17.4 | 1324 | 39.8 | 84 | 19.5 |

# Chapter 15

# HISTOLOGIC TYPES OF SELECTED SITES OF CANCER

The number and relative proportion of the specific histologic types of cancer (for Microscopically Diagnosed Cases) as appropriate for the selected anatomical sites of cancer is given below.

## TONGUE (ICD-10: C01-C02)

**Table 15.1: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)**

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 1 | 0.1 | 7 | 2.1 | 12 | 4.1 | 1 | 0.2 | 0 | 0.0 |
| Carcinomas | 5 | 0.4 | 30 | 9.2 | 10 | 3.4 | 7 | 1.5 | 4 | 6.1 |
| Verrucous Carcinoma | 4 | 0.3 | 3 | 0.9 | 1 | 0.3 | 1 | 0.2 | 0 | 0.0 |
| Squamous Cell Carcinoma | 1142 | 98.9 | 285 | 87.2 | 265 | 91.4 | 443 | 97.4 | 60 | 90.9 |
| Adeno Carcinoma | 3 | 0.3 | 1 | 0.3 | 2 | 0.7 | 2 | 0.4 | 0 | 0.0 |
| Others | 0 | 0.0 | 1 | 0.3 | 0 | 0.0 | 1 | 0.2 | 2 | 3.0 |
| **All Histologic Types** | **1155** | **100.0** | **327** | **100.0** | **290** | **100.0** | **455** | **100.0** | **66** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 0 | 0.0 | 3 | 3.7 | 3 | 3.5 | 1 | 0.5 | 0 | 0.0 |
| Carcinomas | 2 | 0.6 | 5 | 6.1 | 1 | 1.2 | 4 | 1.8 | 0 | 0.0 |
| Verrucous Carcinoma | 3 | 0.9 | 0 | 0.0 | 0 | 0.0 | 4 | 1.8 | 0 | 0.0 |
| Squamous Cell Carcinoma | 341 | 97.7 | 74 | 90.2 | 79 | 91.9 | 207 | 94.5 | 19 | 100.0 |
| Adeno Carcinoma | 1 | 0.3 | 0 | 0.0 | 3 | 3.5 | 3 | 1.4 | 0 | 0.0 |
| Others | 2 | 0.6 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| **All Histologic Types** | **349** | **100.0** | **82** | **100.0** | **86** | **100.0** | **219** | **100.0** | **19** | **100.0** |

# MOUTH (ICD-10: C03-C06)

## Table 15.2: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 3 | 0.2 | 5 | 1.4 | 12 | 3.8 | 1 | 0.1 | 0 | 0.0 |
| Carcinomas | 9 | 0.5 | 19 | 5.4 | 6 | 1.9 | 5 | 0.7 | 2 | 2.3 |
| Verrucous Carcinoma | 22 | 1.2 | 9 | 2.6 | 5 | 1.6 | 15 | 2.2 | 1 | 1.2 |
| Squamous Cell Carcinoma | 1828 | 97.4 | 313 | 89.2 | 290 | 91.8 | 649 | 95.0 | 81 | 94.2 |
| Adeno Carcinoma | 7 | 0.4 | 2 | 0.6 | 2 | 0.6 | 5 | 0.7 | 0 | 0.0 |
| Others | 8 | 0.4 | 3 | 0.9 | 1 | 0.3 | 8 | 1.2 | 2 | 2.3 |
| **All Histologic Types** | **1877** | **100.0** | **351** | **100.0** | **316** | **100.0** | **683** | **100.0** | **86** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 3 | 0.5 | 25 | 3.1 | 6 | 2.2 | 2 | 0.6 | 0 | 0.0 |
| Carcinomas | 5 | 0.8 | 24 | 3.0 | 5 | 1.9 | 2 | 0.6 | 1 | 2.7 |
| Verrucous Carcinoma | 10 | 1.6 | 35 | 4.3 | 3 | 1.1 | 10 | 2.8 | 1 | 2.7 |
| Squamous Cell Carcinoma | 595 | 93.8 | 713 | 88.1 | 244 | 90.7 | 328 | 92.9 | 35 | 94.6 |
| Adeno Carcinoma | 11 | 1.7 | 6 | 0.7 | 9 | 3.3 | 5 | 1.4 | 0 | 0.0 |
| Others | 10 | 1.6 | 6 | 0.7 | 2 | 0.7 | 6 | 1.7 | 0 | 0.0 |
| **All Histologic Types** | **634** | **100.0** | **809** | **100.0** | **269** | **100.0** | **353** | **100.0** | **37** | **100.0** |

# PHARYNX (ICD-10: C09-C10 and C12-C14)

## Table 15.3: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 12 | 0.9 | 11 | 1.3 | 21 | 4.6 | 1 | 0.2 | 0 | 0.0 |
| Carcinomas | 20 | 1.4 | 62 | 7.5 | 16 | 3.5 | 26 | 5.4 | 13 | 5.3 |
| Squamous Cell Carcinoma | 1372 | 97.5 | 749 | 91.0 | 414 | 91.6 | 447 | 93.3 | 234 | 94.7 |
| Others | 3 | 0.2 | 1 | 0.1 | 1 | 0.2 | 5 | 1.0 | 0 | 0.0 |
| **All Histologic Types** | **1407** | **100.0** | **823** | **100.0** | **452** | **100.0** | **479** | **100.0** | **247** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 0 | 0.0 | 3 | 1.7 | 6 | 3.7 | 0 | 0.0 | 0 | 0.0 |
| Carcinomas | 5 | 2.2 | 12 | 6.9 | 7 | 4.3 | 1 | 1.9 | 2 | 5.1 |
| Squamous Cell Carcinoma | 222 | 97.8 | 156 | 90.2 | 148 | 91.9 | 50 | 96.2 | 37 | 94.9 |
| Others | 0 | 0.0 | 2 | 1.2 | 0 | 0.0 | 1 | 1.9 | 0 | 0.0 |
| **All Histologic Types** | **227** | **100.0** | **173** | **100.0** | **161** | **100.0** | **52** | **100.0** | **39** | **100.0** |

# OESOPHAGUS (ICD-10: C15)

## Table 15.4: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 2 | 0.2 | 25 | 4.4 | 11 | 2.8 | 2 | 0.5 | 0 | 0.0 |
| Carcinomas | 34 | 3.7 | 47 | 8.3 | 25 | 6.5 | 18 | 4.6 | 1 | 0.8 |
| Squamous Cell Carcinoma | 765 | 84.0 | 449 | 79.5 | 306 | 79.1 | 304 | 78.4 | 127 | 95.5 |
| Adeno Carcinoma | 102 | 11.2 | 41 | 7.3 | 36 | 9.3 | 47 | 12.1 | 5 | 3.8 |
| Others | 8 | 0.9 | 3 | 0.5 | 9 | 2.3 | 17 | 4.4 | 0 | 0.0 |
| **All Histologic Types** | **911** | **100.0** | **565** | **100.0** | **387** | **100.0** | **388** | **100.0** | **133** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 1 | 0.2 | 11 | 2.4 | 3 | 1.3 | 0 | 0.0 | 0 | 0.0 |
| Carcinomas | 11 | 2.3 | 46 | 10.1 | 12 | 5.4 | 2 | 1.9 | 2 | 3.4 |
| Squamous Cell Carcinoma | 421 | 89.8 | 386 | 85.0 | 187 | 83.9 | 93 | 90.3 | 55 | 93.2 |
| Adeno Carcinoma | 31 | 6.6 | 9 | 2.0 | 21 | 9.4 | 6 | 5.8 | 1 | 1.7 |
| Others | 5 | 1.1 | 2 | 0.4 | 0 | 0.0 | 2 | 1.9 | 1 | 1.7 |
| **All Histologic Types** | **469** | **100.0** | **454** | **100.0** | **223** | **100.0** | **103** | **100.0** | **59** | **100.0** |

# STOMACH (ICD-10: C16)

## Table 15.5: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 7 | 1.6 | 19 | 5.0 | 20 | 5.1 | 5 | 1.6 | 0 | 0.0 |
| Carcinomas | 19 | 4.3 | 51 | 13.4 | 34 | 8.7 | 46 | 15.1 | 4 | 12.5 |
| Adeno Carcinomas | 337 | 76.9 | 264 | 69.5 | 304 | 77.7 | 189 | 62.0 | 25 | 78.1 |
| Papillary Adeno Carcinoma | 0 | 0.0 | 6 | 1.6 | 1 | 0.3 | 4 | 1.3 | 0 | 0.0 |
| Mucinous Adeno Carcinoma | 10 | 2.3 | 18 | 4.7 | 25 | 6.4 | 35 | 11.5 | 3 | 9.4 |
| Sarcomas | 3 | 0.7 | 1 | 0.3 | 0 | 0.0 | 2 | 0.7 | 0 | 0.0 |
| Others | 62 | 14.2 | 21 | 5.5 | 7 | 1.8 | 24 | 7.9 | 0 | 0.0 |
| **All Histologic Types** | **438** | **100.0** | **380** | **100.0** | **391** | **100.0** | **305** | **100.0** | **32** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 0 | 0.0 | 8 | 5.3 | 13 | 8.1 | 1 | 1.2 | 0 | 0.0 |
| Carcinomas | 12 | 6.6 | 17 | 11.3 | 14 | 8.7 | 8 | 9.9 | 0 | 0.0 |
| Adeno Carcinomas | 124 | 68.5 | 105 | 69.5 | 107 | 66.5 | 48 | 59.3 | 10 | 62.5 |
| Papillary Adeno Carcinoma | 0 | 0.0 | 1 | 0.7 | 0 | 0.0 | 1 | 1.2 | 1 | 6.3 |
| Mucinous Adeno Carcinoma | 6 | 3.3 | 6 | 4.0 | 13 | 8.1 | 8 | 9.9 | 4 | 25.0 |
| Sarcomas | 2 | 1.1 | 1 | 0.7 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 37 | 20.4 | 13 | 8.6 | 14 | 8.7 | 15 | 18.5 | 1 | 6.3 |
| **All Histologic Types** | **181** | **100.0** | **151** | **100.0** | **161** | **100.0** | **81** | **100.0** | **16** | **100.0** |

# LUNG (ICD-10: C33-C34)

## Table 15.6: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 58 | 5.1 | 22 | 5.7 | 19 | 7.5 | 37 | 4.3 | 0 | 0.0 |
| Large Cell Carcinoma | 39 | 3.4 | 2 | 0.5 | 2 | 0.8 | 13 | 1.5 | 0 | 0.0 |
| Undiff/Anaplastic Carcinoma | 6 | 0.5 | 1 | 0.3 | 3 | 1.2 | 16 | 1.9 | 0 | 0.0 |
| Small Cell Carcinoma | 127 | 11.1 | 59 | 15.3 | 29 | 11.5 | 111 | 13.0 | 4 | 9.8 |
| Squamous Cell Carcinoma | 369 | 32.3 | 35 | 9.1 | 81 | 32.0 | 221 | 25.8 | 17 | 41.5 |
| Other Carcinomas | 111 | 9.7 | 67 | 17.4 | 57 | 22.5 | 184 | 21.5 | 1 | 2.4 |
| Papillary AdenoCarcinoma | 6 | 0.5 | 1 | 0.3 | 4 | 1.6 | 16 | 1.9 | 0 | 0.0 |
| Adeno Squamous Carcinoma | 12 | 1.1 | 0 | 0.0 | 0 | 0.0 | 9 | 1.1 | 0 | 0.0 |
| Adeno Carcinoma NOS | 390 | 34.2 | 74 | 19.2 | 54 | 21.3 | 226 | 26.4 | 10 | 24.4 |
| Others | 23 | 2.0 | 124 | 32.2 | 4 | 1.6 | 22 | 2.6 | 9 | 22.0 |
| **All Histologic Types** | **1141** | **100.0** | **385** | **100.0** | **253** | **100.0** | **855** | **100.0** | **41** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 10 | 3.7 | 6 | 8.1 | 14 | 21.5 | 3 | 2.4 | 0 | 0.0 |
| Large Cell Carcinoma | 7 | 2.6 | 2 | 2.7 | 2 | 3.1 | 0 | 0.0 | 0 | 0.0 |
| Undiff/Anaplastic Carcinoma | 1 | 0.4 | 1 | 1.4 | 2 | 3.1 | 2 | 1.6 | 0 | 0.0 |
| Small Cell Carcinoma | 15 | 5.5 | 7 | 9.5 | 3 | 4.6 | 5 | 4.1 | 0 | 0.0 |
| Squamous Cell Carcinoma | 44 | 16.2 | 8 | 10.8 | 4 | 6.2 | 18 | 14.6 | 4 | 57.1 |
| Other Carcinomas | 28 | 10.3 | 16 | 21.6 | 14 | 21.5 | 29 | 23.6 | 0 | 0.0 |
| Papillary AdenoCarcinoma | 1 | 0.4 | 1 | 1.4 | 1 | 1.5 | 5 | 4.1 | 0 | 0.0 |
| Adeno Squamous Carcinoma | 6 | 2.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Adeno Carcinoma NOS | 143 | 52.6 | 17 | 23.0 | 23 | 35.4 | 53 | 43.1 | 1 | 14.3 |
| Others | 17 | 6.3 | 16 | 21.6 | 2 | 3.1 | 8 | 6.5 | 2 | 28.6 |
| **All Histologic Types** | **272** | **100.0** | **74** | **100.0** | **65** | **100.0** | **123** | **100.0** | **7** | **100.0** |

# BONE (ICD-10: C40-C41)

## Table 15.7: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 3 | 1.0 | 4 | 4.0 | 8 | 6.6 | 1 | 1.0 | 0 | 0.0 |
| Sarcomas | 9 | 3.0 | 2 | 2.0 | 3 | 2.5 | 9 | 9.0 | 2 | 12.5 |
| Osteosarcomas | 187 | 62.5 | 42 | 42.0 | 57 | 46.7 | 59 | 59.0 | 6 | 37.5 |
| Chondrosarcomas | 32 | 10.7 | 15 | 15.0 | 13 | 10.7 | 8 | 8.0 | 3 | 18.8 |
| Giant Cell Tumour | 1 | 0.3 | 0 | 0.0 | 5 | 4.1 | 1 | 1.0 | 0 | 0.0 |
| Ewing's Sarcoma | 52 | 17.4 | 19 | 19.0 | 28 | 23.0 | 16 | 16.0 | 0 | 0.0 |
| Chondroma | 1 | 0.3 | 0 | 0.0 | 0 | 0.0 | 1 | 1.0 | 0 | 0.0 |
| Others | 14 | 4.7 | 18 | 18.0 | 8 | 6.6 | 5 | 5.0 | 5 | 31.3 |
| **All Histologic Types** | **299** | **100.0** | **100** | **100.0** | **122** | **100.0** | **100** | **100.0** | **16** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 1 | 0.9 | 3 | 5.0 | 8 | 12.1 | 0 | 0.0 | 1 | 12.5 |
| Sarcomas | 7 | 6.6 | 4 | 6.7 | 4 | 6.1 | 1 | 1.6 | 0 | 0.0 |
| Osteosarcomas | 70 | 66.0 | 19 | 31.7 | 28 | 42.4 | 33 | 54.1 | 1 | 12.5 |
| Chondrosarcomas | 11 | 10.4 | 10 | 16.7 | 5 | 7.6 | 5 | 8.2 | 0 | 0.0 |
| Giant Cell Tumour | 1 | 0.9 | 3 | 5.0 | 4 | 6.1 | 0 | 0.0 | 0 | 0.0 |
| Ewing's Sarcoma | 15 | 14.2 | 13 | 21.7 | 13 | 19.7 | 15 | 24.6 | 1 | 12.5 |
| Chondroma | 0 | 0.0 | 1 | 1.7 | 0 | 0.0 | 1 | 1.6 | 0 | 0.0 |
| Others | 1 | 0.9 | 7 | 11.7 | 4 | 6.1 | 6 | 9.8 | 5 | 62.5 |
| **All Histologic Types** | **106** | **100.0** | **60** | **100.0** | **66** | **100.0** | **61** | **100.0** | **8** | **100.0** |

# SOFT TISSUE (ICD-10: C47 &C49)

## Table 15.8: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 0 | 0.0 | 0 | 0.0 | 9 | 7.0 | 5 | 4.7 | 0 | 0.0 |
| Sarcoma NOS | 0 | 0.0 | 8 | 12.5 | 23 | 17.8 | 4 | 3.8 | 0 | 0.0 |
| Spindle Cell Sarcoma | 0 | 0.0 | 19 | 29.7 | 31 | 24.0 | 20 | 18.9 | 1 | 16.7 |
| Pleomorphic Cell Sarcoma | 0 | 0.0 | 7 | 10.9 | 9 | 7.0 | 7 | 6.6 | 0 | 0.0 |
| Fibrous Histiocytoma | 0 | 0.0 | 3 | 4.7 | 16 | 12.4 | 8 | 7.5 | 0 | 0.0 |
| Liposarcoma | 0 | 0.0 | 5 | 7.8 | 3 | 2.3 | 6 | 5.7 | 0 | 0.0 |
| Leiomyosarcoma | 0 | 0.0 | 1 | 1.6 | 3 | 2.3 | 2 | 1.9 | 1 | 16.7 |
| Rhabdomyosarcoma | 0 | 0.0 | 1 | 1.6 | 14 | 10.9 | 14 | 13.2 | 1 | 16.7 |
| Synovial Sarcoma | 0 | 0.0 | 10 | 15.6 | 9 | 7.0 | 15 | 14.2 | 1 | 16.7 |
| Neurofibrosarcoma | 3 | 5.4 | 1 | 1.6 | 1 | 0.8 | 4 | 3.8 | 1 | 16.7 |
| Neurilemmoma | 0 | 0.0 | 3 | 4.7 | 1 | 0.8 | 1 | 0.9 | 0 | 0.0 |
| Others | 53 | 94.6 | 6 | 9.4 | 10 | 7.8 | 20 | 18.9 | 1 | 16.7 |
| **All Histologic Types** | **56** | **100.0** | **64** | **100.0** | **129** | **100.0** | **106** | **100.0** | **6** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 0 | 0.0 | 2 | 4.3 | 3 | 4.1 | 4 | 5.0 | 0 | 0.0 |
| Sarcoma NOS | 0 | 0.0 | 2 | 4.3 | 15 | 20.3 | 5 | 6.3 | 0 | 0.0 |
| Spindle Cell Sarcoma | 0 | 0.0 | 16 | 34.8 | 20 | 27.0 | 22 | 27.5 | 0 | 0.0 |
| Pleomorphic Cell Sarcoma | 0 | 0.0 | 7 | 15.2 | 2 | 2.7 | 6 | 7.5 | 0 | 0.0 |
| Fibrous Histiocytoma | 0 | 0.0 | 1 | 2.2 | 5 | 6.8 | 8 | 10.0 | 0 | 0.0 |
| Liposarcoma | 0 | 0.0 | 1 | 2.2 | 3 | 4.1 | 8 | 10.0 | 0 | 0.0 |
| Leiomyosarcoma | 0 | 0.0 | 3 | 6.5 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Rhabdomyosarcoma | 0 | 0.0 | 3 | 6.5 | 6 | 8.1 | 5 | 6.3 | 2 | 100.0 |
| Synovial Sarcoma | 0 | 0.0 | 4 | 8.7 | 4 | 5.4 | 7 | 8.8 | 0 | 0.0 |
| Neurofibrosarcoma | 1 | 3.7 | 0 | 0.0 | 2 | 2.7 | 3 | 3.8 | 0 | 0.0 |
| Neurilemmoma | 0 | 0.0 | 1 | 2.2 | 1 | 1.4 | 1 | 1.3 | 0 | 0.0 |
| Others | 26 | 96.3 | 6 | 13.0 | 13 | 17.6 | 11 | 13.8 | 0 | 0.0 |
| **All Histologic Types** | **27** | **100.0** | **46** | **100.0** | **74** | **100.0** | **80** | **100.0** | **2** | **100.0** |

# FEMALE BREAST (ICD-10: C50)

## Table 15.9: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Neoplasm Malignant | 21 | 0.7 | 48 | 5.1 | 19 | 1.5 | 46 | 2.3 | 0 | 0.0 |
| Carcinomas | 71 | 2.2 | 52 | 5.5 | 15 | 1.2 | 143 | 7.3 | 2 | 3.1 |
| Papillary Carcinoma | 13 | 0.4 | 1 | 0.1 | 5 | 0.4 | 18 | 0.9 | 0 | 0.0 |
| Squamous Cell Carcinoma | 9 | 0.3 | 3 | 0.3 | 0 | 0.0 | 4 | 0.2 | 0 | 0.0 |
| Adeno Carcinoma NOS | 37 | 1.2 | 4 | 0.4 | 4 | 0.3 | 11 | 0.6 | 0 | 0.0 |
| Mucinous Adeno Carcinoma | 23 | 0.7 | 16 | 1.7 | 8 | 0.6 | 20 | 1.0 | 2 | 3.1 |
| Infil. Duct Carcinoma | 2815 | 88.7 | 761 | 80.6 | 1180 | 91.3 | 1638 | 83.1 | 54 | 84.4 |
| Medullary Carcinoma | 15 | 0.5 | 11 | 1.2 | 5 | 0.4 | 16 | 0.8 | 2 | 3.1 |
| Lobular Carcinoma | 90 | 2.8 | 19 | 2.0 | 22 | 1.7 | 44 | 2.2 | 1 | 1.6 |
| Paget's Disease | 13 | 0.4 | 2 | 0.2 | 2 | 0.2 | 2 | 0.1 | 0 | 0.0 |
| Cystosarc. Phyllodes | 14 | 0.4 | 14 | 1.5 | 8 | 0.6 | 10 | 0.5 | 1 | 1.6 |
| Others | 54 | 1.7 | 13 | 1.4 | 25 | 1.9 | 18 | 0.9 | 2 | 3.1 |
| **All Histologic Types** | **3175** | **100.0** | **944** | **100.0** | **1293** | **100.0** | **1970** | **100.0** | **64** | **100.0** |

# CERVIX (ICD-10: C53)

## Table 15.10: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Neoplasm Malignant | 0 | 0.0 | 71 | 3.0 | 48 | 2.2 | 3 | 0.3 | 0 | 0.0 |
| Carcinomas | 31 | 1.3 | 59 | 2.5 | 50 | 2.3 | 17 | 1.9 | 2 | 2.5 |
| Non-Kerat Large Cell | 20 | 0.8 | 1047 | 43.8 | 1085 | 50.0 | 351 | 39.6 | 45 | 56.3 |
| Non-Kerat Small Cell | 2 | 0.1 | 4 | 0.2 | 6 | 0.3 | 8 | 0.9 | 4 | 5.0 |
| Kerat Squa Cell Carcinoma NOS | 12 | 0.5 | 531 | 22.2 | 191 | 8.8 | 200 | 22.6 | 6 | 7.5 |
| Squa Cell Carcinoma NOS | 2278 | 92.0 | 538 | 22.5 | 588 | 27.1 | 229 | 25.8 | 17 | 21.3 |
| Other Squa Cell Carcinoma | 3 | 0.1 | 11 | 0.5 | 5 | 0.2 | 3 | 0.3 | 0 | 0.0 |
| Adeno Carcinoma | 87 | 3.5 | 68 | 2.8 | 70 | 3.2 | 43 | 4.9 | 4 | 5.0 |
| Adeno Squa Carcinoma | 20 | 0.8 | 40 | 1.7 | 120 | 5.5 | 12 | 1.4 | 0 | 0.0 |
| Others | 24 | 1.0 | 20 | 0.8 | 6 | 0.3 | 20 | 2.3 | 2 | 2.5 |
| **All Histologic Types** | **2477** | **100.0** | **2389** | **100.0** | **2169** | **100.0** | **886** | **100.0** | **80** | **100.0** |

# OVARY (ICD-10: C56)

## Table 15.11: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| Neoplasm Malignant | 6 | 0.9 | 14 | 4.4 | 18 | 8.3 | 10 | 1.8 | 0 | 0.0 |
| Carcinomas | 24 | 3.6 | 33 | 10.4 | 14 | 6.4 | 14 | 2.6 | 0 | 0.0 |
| Other Carcinomas | 2 | 0.3 | 2 | 0.6 | 0 | 0.0 | 1 | 0.2 | 0 | 0.0 |
| Papillary Carcinoma | 2 | 0.3 | 2 | 0.6 | 1 | 0.5 | 3 | 0.5 | 1 | 3.6 |
| Squamous Cell Carcinoma | 1 | 0.1 | 7 | 2.2 | 0 | 0.0 | 2 | 0.4 | 0 | 0.0 |
| Adeno Carcinoma | 263 | 39.1 | 56 | 17.6 | 95 | 43.6 | 92 | 16.8 | 16 | 57.1 |
| Papillary Adeno Carcinoma | 36 | 5.3 | 38 | 11.9 | 31 | 14.2 | 45 | 8.2 | 5 | 17.9 |
| Clear Cell Adeno Carcinoma | 11 | 1.6 | 3 | 0.9 | 0 | 0.0 | 12 | 2.2 | 0 | 0.0 |
| Endometroid Carcinoma | 40 | 5.9 | 6 | 1.9 | 3 | 1.4 | 44 | 8.1 | 0 | 0.0 |
| Papi/Serous Cystadeno | 149 | 22.1 | 86 | 27.0 | 20 | 9.2 | 142 | 26.0 | 2 | 7.1 |
| Muc Adeno/Cystadeno | 34 | 5.1 | 21 | 6.6 | 12 | 5.5 | 95 | 17.4 | 1 | 3.6 |
| Granulosa Cell Tumour | 4 | 0.6 | 10 | 3.1 | 4 | 1.8 | 4 | 0.7 | 0 | 0.0 |
| Sarcomas | 1 | 0.1 | 3 | 0.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Stromal Tumours | 3 | 0.4 | 2 | 0.6 | 1 | 0.5 | 3 | 0.5 | 0 | 0.0 |
| Dysgerminoma | 32 | 4.8 | 15 | 4.7 | 4 | 1.8 | 32 | 5.9 | 0 | 0.0 |
| Endodermal Sinus Tumour | 18 | 2.7 | 5 | 1.6 | 2 | 0.9 | 9 | 1.6 | 0 | 0.0 |
| Teratomas | 16 | 2.4 | 5 | 1.6 | 2 | 0.9 | 10 | 1.8 | 0 | 0.0 |
| Others | 31 | 4.6 | 10 | 3.1 | 11 | 5.0 | 28 | 5.1 | 3 | 10.7 |
| **All Histologic Types** | **673** | **100.0** | **318** | **100.0** | **218** | **100.0** | **546** | **100.0** | **28** | **100.0** |

# KIDNEY (ICD-10: C64)

## Table 15.12: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 5 | 3.0 | 4 | 7.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Carcinoma NOS | 6 | 3.6 | 2 | 3.7 | 2 | 6.5 | 3 | 4.4 | 0 | 0.0 |
| Transitional Cell Carcinoma | 4 | 2.4 | 1 | 1.9 | 2 | 6.5 | 1 | 1.5 | 0 | 0.0 |
| Adenocarcinoma | 3 | 1.8 | 1 | 1.9 | 2 | 6.5 | 4 | 5.9 | 0 | 0.0 |
| Clear Cell AdenoCarcinoma | 6 | 3.6 | 0 | 0.0 | 0 | 0.0 | 3 | 4.4 | 0 | 0.0 |
| Renal Cell Carcinoma | 106 | 64.2 | 33 | 61.1 | 20 | 64.5 | 43 | 63.2 | 0 | 0.0 |
| Nephroblastoma | 26 | 15.8 | 10 | 18.5 | 4 | 12.9 | 11 | 16.2 | 1 | 100.0 |
| Others | 9 | 5.5 | 3 | 5.6 | 1 | 3.2 | 3 | 4.4 | 0 | 0.0 |
| **All Histologic Types** | **165** | **100.0** | **54** | **100.0** | **31** | **100.0** | **68** | **100.0** | **1** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 0 | 0.0 | 0 | 0.0 | 1 | 4.2 | 0 | 0.0 | 0 | 0.0 |
| Carcinoma NOS | 5 | 7.0 | 0 | 0.0 | 0 | 0.0 | 1 | 2.7 | 0 | 0.0 |
| Transitional Cell Carcinoma | 1 | 1.4 | 1 | 2.6 | 1 | 4.2 | 1 | 2.7 | 0 | 0.0 |
| Adenocarcinoma | 0 | 0.0 | 0 | 0.0 | 3 | 12.5 | 1 | 2.7 | 0 | 0.0 |
| Clear Cell Adeno Carcinoma | 3 | 4.2 | 0 | 0.0 | 1 | 4.2 | 1 | 2.7 | 0 | 0.0 |
| Renal Cell Carcinoma | 44 | 62.0 | 23 | 60.5 | 15 | 62.5 | 13 | 35.1 | 0 | 0.0 |
| Nephroblastoma | 13 | 18.3 | 11 | 28.9 | 3 | 12.5 | 17 | 45.9 | 1 | 100.0 |
| Others | 5 | 7.0 | 3 | 7.9 | 0 | 0.0 | 3 | 8.1 | 0 | 0.0 |
| **All Histologic Types** | **71** | **100.0** | **38** | **100.0** | **24** | **100.0** | **37** | **100.0** | **1** | **100.0** |

# BRAIN (ICD-10: C70-C72)

## Table 15.13: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 0 | 0.0 | 12 | 4.9 | 0 | 0.0 | 1 | 0.4 | 0 | 0.0 |
| Gliomas | 17 | 5.3 | 26 | 10.6 | 4 | 9.8 | 58 | 25.7 | 0 | 0.0 |
| Ependymoma | 14 | 4.3 | 3 | 1.2 | 1 | 2.4 | 2 | 0.9 | 2 | 25.0 |
| Astrocytoma | 198 | 61.5 | 133 | 54.3 | 20 | 48.8 | 97 | 42.9 | 2 | 25.0 |
| Glioblastoma | 26 | 8.1 | 19 | 7.8 | 5 | 12.2 | 30 | 13.3 | 0 | 0.0 |
| Oligodendroglioma | 14 | 4.3 | 10 | 4.1 | 1 | 2.4 | 7 | 3.1 | 0 | 0.0 |
| Medulloblastoma | 40 | 12.4 | 30 | 12.2 | 6 | 14.6 | 16 | 7.1 | 1 | 12.5 |
| Others | 13 | 4.0 | 12 | 4.9 | 4 | 9.8 | 15 | 6.6 | 3 | 37.5 |
| **All Histologic Types** | **322** | **100.0** | **245** | **100.0** | **41** | **100.0** | **226** | **100.0** | **8** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 1 | 0.5 | 7 | 6.4 | 0 | 0.0 | 3 | 2.2 | 0 | 0.0 |
| Gliomas | 12 | 6.4 | 3 | 2.7 | 2 | 11.1 | 29 | 21.2 | 0 | 0.0 |
| Ependymoma | 9 | 4.8 | 2 | 1.8 | 0 | 0.0 | 4 | 2.9 | 0 | 0.0 |
| Astrocytoma | 119 | 63.6 | 59 | 53.6 | 10 | 55.6 | 58 | 42.3 | 2 | 66.7 |
| Glioblastoma | 8 | 4.3 | 11 | 10.0 | 2 | 11.1 | 11 | 8.0 | 1 | 33.3 |
| Oligodendroglioma | 10 | 5.3 | 6 | 5.5 | 2 | 11.1 | 4 | 2.9 | 0 | 0.0 |
| Medulloblastoma | 23 | 12.3 | 11 | 10.0 | 1 | 5.6 | 18 | 13.1 | 0 | 0.0 |
| Others | 5 | 2.7 | 11 | 10.0 | 1 | 5.6 | 10 | 7.3 | 0 | 0.0 |
| **All Histologic Types** | **187** | **100.0** | **110** | **100.0** | **18** | **100.0** | **137** | **100.0** | **3** | **100.0** |

# THYROID GLAND (ICD-10: C73)

## Table 15.14: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Neoplasm Malignant | 3 | 1.6 | 3 | 3.2 | 1 | 1.1 | 0 | 0.0 | 0 | 0.0 |
| Other Carcinomas | 7 | 3.8 | 9 | 9.7 | 7 | 8.0 | 4 | 2.0 | 0 | 0.0 |
| Undifferentiated Carcinoma | 6 | 3.3 | 1 | 1.1 | 4 | 4.6 | 9 | 4.4 | 2 | 40.0 |
| Papillary CarcinomaNOS | 94 | 51.4 | 55 | 59.1 | 55 | 63.2 | 139 | 68.1 | 0 | 0.0 |
| Papillary Adeno Carcinoma | 0 | 0.0 | 1 | 1.1 | 8 | 9.2 | 1 | 0.5 | 0 | 0.0 |
| Follicular Carcinoma | 28 | 15.3 | 13 | 14.0 | 6 | 6.9 | 16 | 7.8 | 2 | 40.0 |
| Mixed Papi & Folli Carcinoma | 9 | 4.9 | 6 | 6.5 | 1 | 1.1 | 25 | 12.3 | 0 | 0.0 |
| Medullary Carcinoma | 32 | 17.5 | 4 | 4.3 | 2 | 2.3 | 7 | 3.4 | 0 | 0.0 |
| Others | 4 | 2.2 | 1 | 1.1 | 3 | 3.4 | 3 | 1.5 | 1 | 20.0 |
| **All Histologic Types** | **183** | **100.0** | **93** | **100.0** | **87** | **100.0** | **204** | **100.0** | **5** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Neoplasm Malignant | 2 | 0.9 | 9 | 4.3 | 1 | 0.8 | 2 | 0.3 | 0 | 0.0 |
| Other Carcinomas | 10 | 4.3 | 12 | 5.7 | 14 | 10.7 | 4 | 0.6 | 1 | 20.0 |
| Undifferentiated Carcinoma | 7 | 3.0 | 6 | 2.9 | 7 | 5.3 | 12 | 1.9 | 1 | 20.0 |
| Papillary CarcinomaNOS | 128 | 55.7 | 132 | 62.9 | 75 | 57.3 | 434 | 70.0 | 0 | 0.0 |
| Papillary AdenoCarcinoma | 1 | 0.4 | 0 | 0.0 | 8 | 6.1 | 1 | 0.2 | 0 | 0.0 |
| Follicular Carcinoma | 40 | 17.4 | 21 | 10.0 | 16 | 12.2 | 70 | 11.3 | 3 | 60.0 |
| Mixed Papi & Folli Carcinoma | 30 | 13.0 | 18 | 8.6 | 2 | 1.5 | 78 | 12.6 | 0 | 0.0 |
| Medullary Carcinoma | 10 | 4.3 | 5 | 2.4 | 3 | 2.3 | 14 | 2.3 | 0 | 0.0 |
| Others | 2 | 0.9 | 7 | 3.3 | 5 | 3.8 | 5 | 0.8 | 0 | 0.0 |
| **All Histologic Types** | **230** | **100.0** | **210** | **100.0** | **131** | **100.0** | **620** | **100.0** | **5** | **100.0** |

# TUMOURS OF LYMPHOID AND HAEMATOPOIETIC SYSTEM (LHM) (ICD-10: C81-C85 and C90-C96)

## Table 15.15: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| LHM Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| NHL | 363 | 11.9 | 121 | 14.6 | 77 | 10.3 | 75 | 6.5 | 1 | 5.0 |
| HD | 950 | 31.1 | 250 | 30.2 | 269 | 35.8 | 408 | 35.4 | 10 | 50.0 |
| MM | 181 | 5.9 | 46 | 5.5 | 43 | 5.7 | 154 | 13.4 | 0 | 0.0 |
| Leukaemias | 1560 | 51.1 | 412 | 49.7 | 362 | 48.2 | 514 | 44.7 | 9 | 45.0 |
| **All Types** | **3054** | **100.0** | **829** | **100.0** | **751** | **100.0** | **1151** | **100.0** | **20** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| NHL | 98 | 8.6 | 34 | 7.2 | 29 | 8.1 | 25 | 3.9 | 0 | 0.0 |
| HD | 359 | 31.6 | 127 | 26.8 | 96 | 27.0 | 200 | 31.2 | 1 | 11.1 |
| MM | 67 | 5.9 | 15 | 3.2 | 20 | 5.6 | 75 | 11.7 | 1 | 11.1 |
| Leukaemias | 611 | 53.8 | 298 | 62.9 | 211 | 59.3 | 341 | 53.2 | 7 | 77.8 |
| **All Types** | **1135** | **100.0** | **474** | **100.0** | **356** | **100.0** | **641** | **100.0** | **9** | **100.0** |

# HODGKIN'S DISEASE (ICD-10: C81)

## Table 15.16: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Hodgkin's Disease NOS | 61 | 17.9 | 27 | 22.3 | 32 | 41.6 | 13 | 17.3 | 1 | 100.0 |
| HD LP | 16 | 4.7 | 2 | 1.7 | 6 | 7.8 | 3 | 4.0 | 0 | 0.0 |
| HD MC | 149 | 43.8 | 45 | 37.2 | 23 | 29.9 | 36 | 48.0 | 0 | 0.0 |
| HD LD | 1 | 0.3 | 3 | 2.5 | 6 | 7.8 | 1 | 1.3 | 0 | 0.0 |
| HD NS | 113 | 33.2 | 44 | 36.4 | 10 | 13.0 | 22 | 29.3 | 0 | 0.0 |
| **All Histologic Types** | **340** | **100.0** | **121** | **100.0** | **77** | **100.0** | **75** | **100.0** | **1** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Hodgkin's Disease NOS | 14 | 14.7 | 9 | 26.5 | 16 | 55.2 | 3 | 12.0 | 0 | 0.0 |
| HD LP | 5 | 5.3 | 1 | 2.9 | 2 | 6.9 | 1 | 4.0 | 0 | 0.0 |
| HD MC | 49 | 51.6 | 9 | 26.5 | 5 | 17.2 | 2 | 8.0 | 0 | 0.0 |
| HD LD | 0 | 0.0 | 1 | 2.9 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| HD NS | 27 | 28.4 | 14 | 41.2 | 6 | 20.7 | 19 | 76.0 | 0 | 0.0 |
| **All Histologic Types** | **95** | **100.0** | **34** | **100.0** | **29** | **100.0** | **25** | **100.0** | **0** | **0.0** |

# LEUKAEMIAS (ICD-10: C91-C95)

## Table 15.17: Number(#) and Relative Proportion(%) of different histologic types (1999-2000)

| Histologic Type | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Leukaemia NOS | 2 | 0.1 | 0 | 0.0 | 7 | 1.9 | 0 | 0.0 | 0 | 0.0 |
| Acute Leukaemia NOS | 101 | 6.9 | 35 | 8.5 | 30 | 8.3 | 6 | 1.2 | 0 | 0.0 |
| Acute Lymphoid Leuk | 468 | 32.1 | 94 | 22.8 | 99 | 27.3 | 250 | 48.7 | 2 | 22.2 |
| Chronic Lymphoid Leuk | 82 | 5.6 | 23 | 5.6 | 20 | 5.5 | 17 | 3.3 | 0 | 0.0 |
| Acute Myeloid Leuk | 349 | 23.9 | 100 | 24.3 | 102 | 28.2 | 150 | 29.2 | 3 | 33.3 |
| Chronic Myeloid Leuk | 436 | 29.9 | 81 | 19.7 | 103 | 28.5 | 73 | 14.2 | 4 | 44.4 |
| Others | 21 | 1.4 | 79 | 19.2 | 1 | 0.3 | 17 | 3.3 | 0 | 0.0 |
| **All Histologic Types** | **1459** | **100.0** | **412** | **100.0** | **362** | **100.0** | **513** | **100.0** | **9** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Leukaemia NOS | 0 | 0.0 | 0 | 0.0 | 3 | 1.4 | 0 | 0.0 | 0 | 0.0 |
| Acute Leukaemia NOS | 39 | 6.7 | 25 | 8.4 | 34 | 16.1 | 9 | 2.6 | 0 | 0.0 |
| Acute Lymphoid Leuk | 177 | 30.6 | 60 | 20.1 | 46 | 21.8 | 144 | 42.2 | 0 | 0.0 |
| Chronic Lymphoid Leuk | 27 | 4.7 | 6 | 2.0 | 4 | 1.9 | 9 | 2.6 | 0 | 0.0 |
| Acute Myeloid Leuk | 167 | 28.8 | 92 | 30.9 | 60 | 28.4 | 141 | 41.3 | 5 | 71.4 |
| Chronic Myeloid Leuk | 161 | 27.8 | 74 | 24.8 | 61 | 28.9 | 30 | 8.8 | 1 | 14.3 |
| Others | 8 | 1.4 | 41 | 13.8 | 3 | 1.4 | 8 | 2.3 | 1 | 14.3 |
| **All Histologic Types** | **579** | **100.0** | **298** | **100.0** | **211** | **100.0** | **341** | **100.0** | **7** | **100.0** |

# Chapter 16

# EDUCATIONAL AND MARITAL STATUS; RELIGION AND LANGUAGE SPOKEN

The tables below provide the number and relative proportion of cancers (all sites) according to the educational level attained, marital status, pursuit of a specific religion and language spoken.

**Table 16.1: Number(#) and Relative Proportion(%) by Educational Status (All Sites of Cancer) (1999-2000)**

| Educational Status | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Illiterate | 2921 | 16.6 | 3014 | 49.4 | 1296 | 20.9 | 666 | 8.5 | 365 | 36.6 |
| Literate | 239 | 1.4 | 488 | 8.0 | 268 | 4.3 | 62 | 0.8 | 384 | 38.5 |
| Primary | 3991 | 22.6 | 370 | 6.1 | 1549 | 25.0 | 2595 | 33.0 | 65 | 6.5 |
| Middle | 52 | 0.3 | 855 | 14.0 | 989 | 16.0 | 1440 | 18.3 | 37 | 3.7 |
| Secondary | 1551 | 8.8 | 745 | 12.2 | 1403 | 22.6 | 1622 | 20.6 | 76 | 7.6 |
| Technical | 391 | 2.2 | 82 | 1.3 | 90 | 1.5 | 134 | 1.7 | 0 | 0.0 |
| College | 2116 | 12.0 | 372 | 6.1 | 523 | 8.4 | 708 | 9.0 | 28 | 2.8 |
| Below 5 years | 383 | 2.2 | 124 | 2.0 | 77 | 1.2 | 157 | 2.0 | 15 | 1.5 |
| Oth. & Unk. | 5993 | 34.0 | 56 | 0.9 | 0 | 0.0 | 475 | 6.0 | 27 | 2.7 |
| **Total** | **17637** | **100.0** | **6106** | **100.0** | **6195** | **100.0** | **7859** | **100.0** | **997** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Illiterate | 4984 | 36.4 | 5516 | 73.1 | 3756 | 52.6 | 1065 | 14.7 | 323 | 60.3 |
| Literate | 184 | 1.3 | 410 | 5.4 | 182 | 2.5 | 53 | 0.7 | 106 | 19.8 |
| Primary | 2622 | 19.2 | 254 | 3.4 | 1168 | 16.4 | 1923 | 26.5 | 46 | 8.6 |
| Middle | 13 | 0.1 | 539 | 7.1 | 762 | 10.7 | 1068 | 14.7 | 28 | 5.2 |
| Secondary | 890 | 6.5 | 477 | 6.3 | 876 | 12.3 | 1547 | 21.3 | 23 | 4.3 |
| Technical | 117 | 0.9 | 36 | 0.5 | 9 | 0.1 | 106 | 1.5 | 0 | 0.0 |
| College | 1138 | 8.3 | 159 | 2.1 | 329 | 4.6 | 882 | 12.2 | 3 | 0.6 |
| Below 5 years | 191 | 1.4 | 83 | 1.1 | 57 | 0.8 | 123 | 1.7 | 3 | 0.6 |
| Oth. & Unk. | 3540 | 25.9 | 69 | 0.9 | 0 | 0.0 | 480 | 6.6 | 4 | 0.7 |
| **Total** | **13679** | **100.0** | **7543** | **100.0** | **7139** | **100.0** | **7247** | **100.0** | **536** | **100.0** |

## Table 16.2: Number(#) and Relative Proportion(%) by Marital Status (All Sites of Cancer) (1999-2000)

| Marital Status | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Unmarried | 2505 | 14.2 | 795 | 13.0 | 683 | 11.0 | 938 | 11.9 | 63 | 6.3 |
| Married | 14405 | 81.7 | 5195 | 85.1 | 5246 | 84.7 | 6616 | 84.2 | 840 | 84.3 |
| Widowed | 660 | 3.7 | 84 | 1.4 | 255 | 4.1 | 286 | 3.6 | 61 | 6.1 |
| Divorced | 16 | 0.1 | 3 | 0.0 | 2 | 0.0 | 18 | 0.2 | 1 | 0.1 |
| Separated | 12 | 0.1 | 2 | 0.0 | 9 | 0.1 | 1 | 0.0 | 1 | 0.1 |
| Others & Unk. | 39 | 0.2 | 27 | 0.4 | 0 | 0.0 | 0 | 0.0 | 31 | 3.1 |
| **Total** | **17637** | **100.0** | **6106** | **100.0** | **6195** | **100.0** | **7859** | **100.0** | **997** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Unmarried | 1044 | 7.6 | 396 | 5.2 | 295 | 4.1 | 726 | 10.0 | 26 | 4.9 |
| Married | 10263 | 75.0 | 5786 | 76.7 | 5194 | 72.8 | 4868 | 67.2 | 452 | 84.3 |
| Widowed | 2133 | 15.6 | 1317 | 17.5 | 1559 | 21.8 | 1547 | 21.3 | 53 | 9.9 |
| Divorced | 28 | 0.2 | 7 | 0.1 | 5 | 0.1 | 106 | 1.5 | 0 | 0.0 |
| Separated | 14 | 0.1 | 34 | 0.5 | 86 | 1.2 | 0 | 0.0 | 0 | 0.0 |
| Others & Unk. | 197 | 1.4 | 3 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.9 |
| **Total** | **13679** | **100.0** | **7543** | **100.0** | **7139** | **100.0** | **7247** | **100.0** | **536** | **100.0** |

## Table 16.3: Number(#) and Relative Proportion(%) of Cancer patients by Religion (1999-2000)

| Religion | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Hindu | 14709 | 83.4 | 5314 | 87.0 | 5441 | 87.8 | 4732 | 60.2 | 870 | 87.3 |
| Muslim | 2183 | 12.4 | 633 | 10.4 | 503 | 8.1 | 1398 | 17.8 | 104 | 10.4 |
| Christian | 440 | 2.5 | 144 | 2.4 | 237 | 3.8 | 1722 | 21.9 | 17 | 1.7 |
| Sikh | 73 | 0.4 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.2 |
| Jain | 99 | 0.6 | 7 | 0.1 | 12 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| Neo-Buddhist | 1 | 0.0 | 1 | 0.0 | 2 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Parsi | 34 | 0.2 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 10 | 0.1 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 | 3 | 0.3 |
| Unknown | 88 | 0.5 | 4 | 0.1 | 0 | 0.0 | 7 | 0.1 | 0 | 0.0 |
| **Total** | **17637** | **100.0** | **6106** | **100.0** | **6195** | **100.0** | **7859** | **100.0** | **997** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Hindu | 11451 | 83.7 | 6707 | 88.9 | 6351 | 89.0 | 4479 | 61.8 | 465 | 86.8 |
| Muslim | 1399 | 10.2 | 656 | 8.7 | 443 | 6.2 | 1064 | 14.7 | 57 | 10.6 |
| Christian | 465 | 3.4 | 166 | 2.2 | 325 | 4.6 | 1695 | 23.4 | 8 | 1.5 |
| Sikh | 83 | 0.6 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Jain | 104 | 0.8 | 10 | 0.1 | 19 | 0.3 | 0 | 0.0 | 0 | 0.0 |
| Neo-Buddhist | 0 | 0.0 | 0 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Parsi | 56 | 0.4 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Others | 15 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 5 | 0.9 |
| Unknown | 106 | 0.8 | 2 | 0.0 | 0 | 0.0 | 9 | 0.1 | 0 | 0.0 |
| **Total** | **13679** | **100.0** | **7543** | **100.0** | **7139** | **100.0** | **7247** | **100.0** | **536** | **100.0** |

## Table 16.4: Number(#) and Relative Proportion(%) by Language Spoken (All Sites of Cancer) (1999-2000)

| Language Spoken | Mumbai | | Bangalore | | Chennai | | Thi'puram | | Dibrugarh | |
|---|---|---|---|---|---|---|---|---|---|---|
| | # | % | # | % | # | % | # | % | # | % |
| **MALES** | | | | | | | | | | |
| Assamese | 342 | 1.9 | 1 | 0.0 | 193 | 3.1 | 2 | 0.0 | 681 | 68.3 |
| Bengali | 1724 | 9.8 | 6 | 0.1 | 38 | 0.6 | 0 | 0.0 | 93 | 9.3 |
| Gujarati | 1041 | 5.9 | 3 | 0.0 | 13 | 0.2 | 1 | 0.0 | 0 | 0.0 |
| Hindi | 6290 | 35.7 | 48 | 0.8 | 96 | 1.5 | 0 | 0.0 | 70 | 7.0 |
| Kannada | 224 | 1.3 | 3417 | 56.0 | 18 | 0.3 | 3 | 0.0 | 0 | 0.0 |
| Kashmiri | 22 | 0.1 | 0 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Malayalam | 241 | 1.4 | 77 | 1.3 | 271 | 4.4 | 7222 | 91.9 | 0 | 0.0 |
| Marathi | 5072 | 28.8 | 74 | 1.2 | 9 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Oriya | 355 | 2.0 | 5 | 0.1 | 9 | 0.1 | 0 | 0.0 | 66 | 6.6 |
| Punjabi | 177 | 1.0 | 1 | 0.0 | 1 | 0.0 | 2 | 0.0 | 4 | 0.4 |
| Sanskrit | 4 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 1 | 0.1 |
| Sindhi | 180 | 1.0 | 3 | 0.0 | 2 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Tamil | 134 | 0.8 | 539 | 8.8 | 3553 | 57.4 | 577 | 7.3 | 0 | 0.0 |
| Telugu | 281 | 1.6 | 1192 | 19.5 | 1796 | 29.0 | 0 | 0.0 | 1 | 0.1 |
| Urdu | 840 | 4.8 | 607 | 9.9 | 159 | 2.6 | 0 | 0.0 | 28 | 2.8 |
| English | 99 | 0.6 | 5 | 0.1 | 9 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Others | 598 | 3.4 | 106 | 1.7 | 26 | 0.4 | 52 | 0.7 | 50 | 5.0 |
| Unknown | 13 | 0.1 | 21 | 0.3 | 0 | 0.0 | 0 | 0.0 | 3 | 0.3 |
| **Total** | **17637** | **100.0** | **6106** | **100.0** | **6195** | **100.0** | **7859** | **100.0** | **997** | **100.0** |
| **FEMALES** | | | | | | | | | | |
| Assamese | 161 | 1.2 | 2 | 0.0 | 48 | 0.7 | 2 | 0.0 | 345 | 64.4 |
| Bengali | 1147 | 8.4 | 2 | 0.0 | 20 | 0.3 | 0 | 0.0 | 36 | 6.7 |
| Gujarati | 769 | 5.6 | 10 | 0.1 | 11 | 0.2 | 0 | 0.0 | 0 | 0.0 |
| Hindi | 4195 | 30.7 | 56 | 0.7 | 73 | 1.0 | 0 | 0.0 | 31 | 5.8 |
| Kannada | 163 | 1.2 | 3957 | 52.5 | 33 | 0.5 | 1 | 0.0 | 0 | 0.0 |
| Kashmiri | 18 | 0.1 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 | 0 | 0.0 |
| Malayalam | 189 | 1.4 | 72 | 1.0 | 234 | 3.3 | 6618 | 91.3 | 0 | 0.0 |
| Marathi | 4894 | 35.8 | 94 | 1.2 | 15 | 0.2 | 1 | 0.0 | 0 | 0.0 |
| Oriya | 189 | 1.4 | 1 | 0.0 | 7 | 0.1 | 0 | 0.0 | 62 | 11.6 |
| Punjabi | 169 | 1.2 | 4 | 0.1 | 1 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| Sanskrit | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 | 0 | 0.0 | 2 | 0.4 |
| Sindhi | 205 | 1.5 | 2 | 0.0 | 1 | 0.0 | 1 | 0.0 | 0 | 0.0 |
| Tamil | 198 | 1.4 | 803 | 10.6 | 4097 | 57.4 | 561 | 7.7 | 2 | 0.4 |
| Telugu | 224 | 1.6 | 1788 | 23.7 | 2394 | 33.5 | 0 | 0.0 | 0 | 0.0 |
| Urdu | 546 | 4.0 | 612 | 8.1 | 174 | 2.4 | 0 | 0.0 | 24 | 4.5 |
| English | 98 | 0.7 | 6 | 0.1 | 5 | 0.1 | 0 | 0.0 | 0 | 0.0 |
| Others | 508 | 3.7 | 109 | 1.4 | 26 | 0.4 | 63 | 0.9 | 32 | 6.0 |
| Unknown | 5 | 0.0 | 24 | 0.3 | 0 | 0.0 | 0 | 0.0 | 1 | 0.2 |
| **Total** | **13679** | **100.0** | **7543** | **100.0** | **7139** | **100.0** | **7247** | **100.0** | **536** | **100.0** |

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