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# **NATIONAL CANCER REGISTRY PROGRAMME**

*Indian Council of Medical Research*

## **Consolidated Report of Hospital Based Cancer Registries 2001-2003**

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

**Bangalore, India**

*April 2007*

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Hospital Based Cancer Registries provided individual core data. Quality Control checks, tabulations and statistical analysis were done at the Coordinating Unit of NCRP, Bangalore.

The publications of NCRP are intended to contribute to the dissemination of authentic information on cancer incidence by age (Five-year age groups), sex and site (ICD-10).

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# FORWARD

This three year report marks the successful completion of 21 years of systematic and organized data collection by the five Hospital Based Cancer Registries (HBCR) under the National Cancer Registry Programme (NCRP) of the Council. This consolidated report for the years 2001-2003 is the result of work carried out by the five HBCRs located at the respective institutions in different parts of the country.

The objectives of HBCRs are to assess and evaluate patient care and assist in active patient follow-up. Besides, the HBCRs provide an idea of regional patterns of cancer and contribute to the Population Based Cancer Registries (PBCR) in the geographic area. Information about types of cancers and the different treatment modalities helps in planning the facilities required in the respective hospital, thereby facilitating health services research. HBCRs provide database for developing appropriate strategies to aid in National Cancer Control Programme.

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 PBCRs 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 are 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

In 1981 the Indian Council of Medical Research initiated the National Cancer Registry Programme (NCRP) 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, Thiruvananthapuram; 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 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.

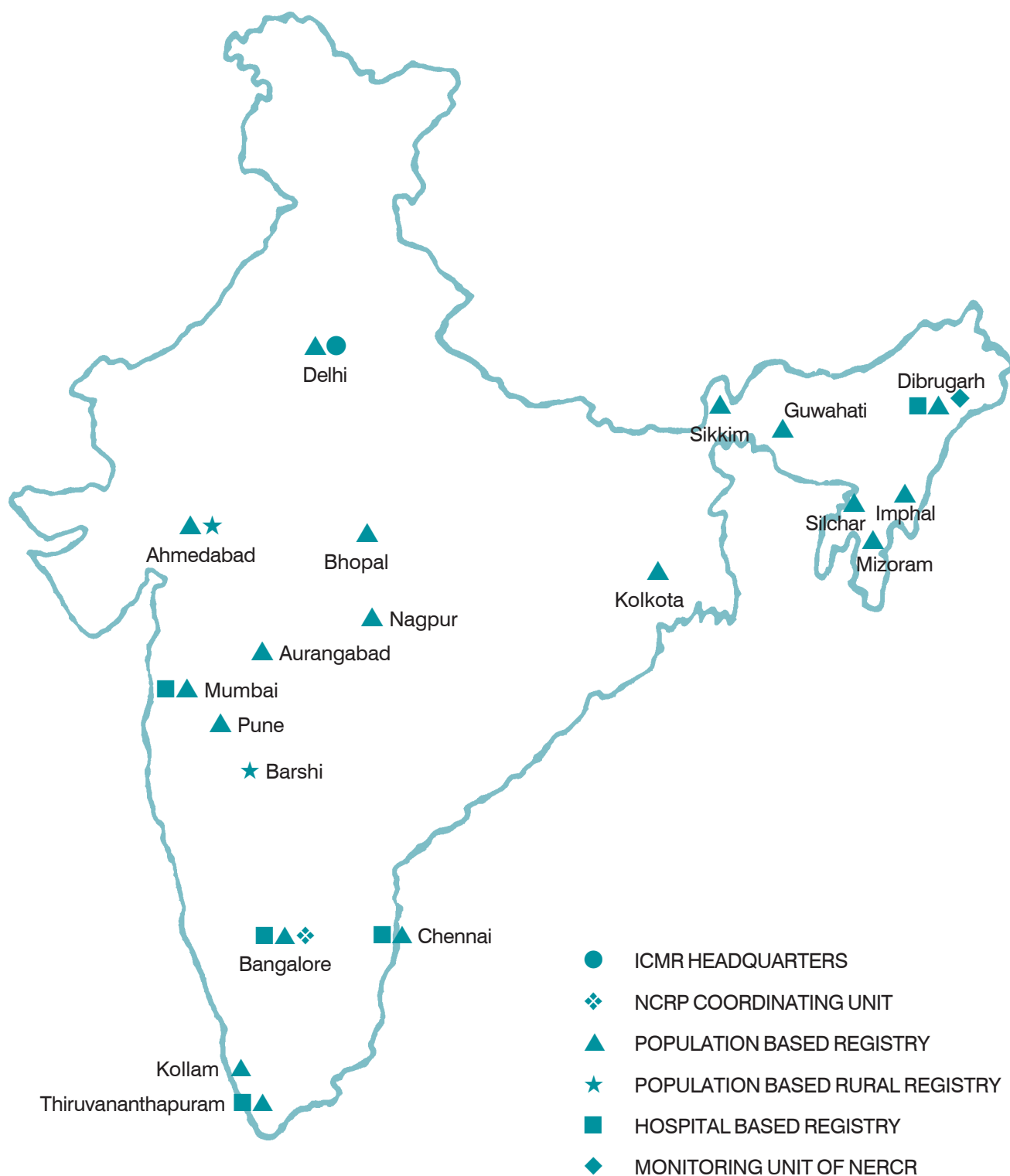
Data collection also commenced from 1 January 1982 in the population based cancer registries (PBCRs) at Bangalore, Chennai and Mumbai. From 1986 two more urban population based cancer registries were started in Delhi and Bhopal. For the first time a population based rural cancer registry was also started 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. The first report of the six population based cancer registry of the north east region covering the two year period from 1st January 2003 to 31st December 2004 was published in September 2006. 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 is coordinated from its office in Bangalore. 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

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representatives of other functioning PBCRs that are not in the NCRP Network also participate. Over the years, the NCRP 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 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 a 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 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.



# Three-Year Consolidated Report of the Hospital Based Cancer Registries: 2001-2003

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

## INTRODUCTION AND SUMMARY OF REPORT

The primary purpose of hospital based cancer registries is to contribute to patient care by providing readily accessible information on the patients with cancer, the treatment received and its results. The data is also used for clinical research and for epidemiological purposes. Hospital based cancer registries are concerned with recording of information on the cancer patients seen in a particular hospital (Isabel dos Santos Silva *et al*, 1999). Within the hospital, a registry is often considered to be an integral part of the hospital's cancer programme or health care delivery system.

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 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 three year (2001-2003) 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 three year report marks the successful completion of 21 years of systematic and organized data collection by these registries.

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 Three Year (2001-2003) 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 studies in cancer of the breast, cervix and head & neck cancers, so that focused 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. It indicates the proportion of methods of diagnosis used in cancer cases which are classified into microscopic, all imaging techniques, clinical and others. 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 emphasises 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**, Principal Investigator & Director, Tata Memorial Hospital

**Dr. B. Ganesh**, Co-Investigator & Head, Department of Medical Records,  
Biostatistics & Epidemiology, Tata Memorial Hospital

**Dr. Rajesh Dikshit**, Epidemiologist, Department of Medical Records,  
Biostatistics & Epidemiology, Tata Memorial Hospital

### INTRODUCTION

The Tata Memorial Centre (TMC) comprises of Tata Memorial Hospital and the Advanced Centre for Treatment, Research and Education in Cancer (ACTREC) engaged in research, education and comprehensive care of cancer patients which is a grant-in-aid Institution and it is under the administrative control of The Department of Atomic Energy, Government of India. The ACTREC situated at Khargar, Navi Mumbai consists of two wings- the Cancer Research Institute (CRI) relocated from Parel and the Clinical Research Centre (CRC) which will undertake basic and clinical research using GCP guidelines. The Hospital is a comprehensive cancer centre for diagnosis, treatment, education and research institution with modern and state of art technology in all areas of cancer management. The Hospital has 564 beds, 18 operation theatres and Intensive care units. The hospital is a recognized centre for Postgraduate teaching in areas such as Surgery, Radiation Therapy, Radio-diagnosis, Pathology, Biochemistry, Radiation Physics, Cytology etc. On an average, over 1500 patients visit every day for availing various services.

Patients who seek all facilities such as diagnosis, treatment and allied facilities are registered as routine case file registrations. These patients carry unique hospital number and they are included in the cancer registry when diagnosed as cancer. Patients who require only cancer checkup are registered under care of Preventive Oncology Department and different registration numbers are allocated (PO) as long as these patients are free from cancer. For patients who require certain facilities like expert pathological opinion by submitting specimens or slides etc, or diagnostic investigations such as PET-CT, CT Scan, MRI, other rehabilitation facilities like breast prosthesis etc. are registered as Referral patients (RF) and a RF number is allocated to them. Some of the RF and PO registered patients eventually register as a regular case if they are diagnosed as cancer. The Hospital Cancer Registry includes only patients registered for comprehensive care where all necessary information like, date of diagnosis, method of diagnosis, clinical extent of disease, primary treatment and continuous follow up are available.

The Cancer Registry is using both ICD9 and ICD10 and tables are generated using both type of codes. For histological classification, the data is coded as per ICD-O III version and table on site and histology using this revised ICD-O-III codes is provided in this report. The clinical extent of disease is classified as per International staging system such as TNM for most of the cancer sites and FIGO system which is followed in TMH.

## Data validation

The Cancer Registry staff scrutinizes the source document for confirmed cancer cases and collects relevant information in pre-designed proforma. The abstracted data is then recorded in the computer. The Software developed ensures entry of valid codes thus minimizing the storage space in the registry database. In addition, special software is used to validate data for range checks, cross checks, duplicate checks and blank checks as there are items which are to be entered without blanks in the data field. To ensure quality and corrections in data, a random sampling procedure was carried where a sample of 5% of case records were scrutinized and checked with the routine recording of cases.

## Method of Diagnosis

About 92% of the cases were diagnosed microscopically (including cytology and bone marrow) during the years 2001-03.

## Leading Sites

Leukemia remains the main leading site of cancer in males. Buccal mucosa, lung & bronchus, oesophagus continue to be among the top five leading sites among males during 2001-03. Among females, cancer of breast was the leading site followed by cervix uteri cancer.

## Pediatric Cancer

During the years 2001-03, cancer in children (0-14 years) accounted for 2473 patients. Leukemia, lymphoma, bone tumors and soft tissue formed about 75 % of all pediatric cancers.

## Treatment

During the years 2001-03, the number of cases treated were 7478 in 2001, 6753 in 2002 and 7275 in the year 2003. These comprise of new cases as well as cases who were treated prior to attending TMH.

## Comments

The comparison of data of three years did not indicate any significant variation in the age distribution, referral pattern, histological diagnosis and clinical status for any sites. It was observed that the relative frequency of head & neck cancer was showing a decreasing trend over the years, however during 2001-03, there was hardly any change. Among females the relative frequency of female breast cancer showed an increasing trend over the years and decreasing trend among cervical cancer. Another consistent observation was the increasing load of the gall bladder cancer in the hospital over the years.

### HOSPITAL BASED CANCER REGISTRY

#### Technical & Computer Staff

Mr. Sanjay D. Talole, M.Sc.  
Mrs. T. K. Santhakumary, B.Sc.  
Mrs. Snehal A. Sant, B.A.  
Mrs. Sapna H. Kothare, B.A.  
Mrs. Vidya R. Lanke, B.Sc.  
Mrs. Elizabeth V. George, B.Sc.  
Miss. Sandhya M. Bahire, B.Sc.  
Miss. Amruta J. Desai, B.Sc.  
Miss. Sushma Saoba, B.Sc.

# HOSPITAL BASED CANCER REGISTRY

## Kidwai Memorial Institute of Oncology, Bangalore

**Dr. P.P.Bapsy**, Director I/c & Principal Investigator

**Dr. K. Ramachandra Reddy**, Professor & Head,  
Department of Epidemiology and Biostatistics & Co-principal Investigator

**Dr. C. Ramesh**, Associate Professor, Department of Epidemiology and Biostatistics

### INTRODUCTION

Kidwai Memorial Institute of Oncology (KMIO) is a comprehensive and regional center 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, a pathology laboratory and a radiology department has achieved a bed strength of 496 apart from Dharmashala, a unique project of its kind in the country built with support from the Bangalore Mahanagara Pallike and another one built with support from Infosys Foundation Trust which together provides accommodation to about 500 ambulatory patients with 500 of their attendants. These patients and attendants at the Dharmashala are provided with free food through the Perpetual Free Feeding Endowment Donation Scheme.

The Mobile Cancer Education and Detection Unit (Department of Community Oncology) organizes cancer detection clinics on Wednesdays and Saturdays at the Institute. 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 the 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 anti 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 Relief Fund.

The KMIO is a well equipped comprehensive cancer center consisting of the departments of Surgical Oncology (General, Head & Neck, Oral, Gynaecology), Radiotherapy, Medical Oncology, Paediatrics, Radiodiagnosis, Pathology, Biochemistry, Blood Transfusion & Immuno Haematology, Microbiology, Cyto-genetics, Nuclear Medicine, Radiation Physics, Anaesthetics & Pain Relief, Epidemiology & Biostatistics, Community Oncology, Social Welfare & Public relations, Library and Information Centre, Administration and supportive care facilities for cancer patients like Physiotherapy, Ostomy clinic, occupational therapy are also available.

The Hospital Based Cancer Registry has been functioning since the inception of the Institute in 1973. However, the Registry was included in the network of NCRP in 1984. All new cases attending the Institute are interviewed during registration and required clinical data are abstracted later from the records using a standard proforma. The computerized data is checked for consistency for unlikely combinations of variables included using in-house computer programme.

Case control studies on breast, oesophagus and oral cavity has been completed and case control study on pharyngeal cancers and ovarian cancers are in progress. Reports on the activities of Hospital Registry are published regularly on an annual basis. The faculty members of the Registry are actively involved in the clinical trials/research projects being carried out by the Institute apart from teaching.

The HBCR has initiated action to conduct special studies on pattern of care and survival studies on head and neck cancers, breast and cervical cancers as proposed by the National Cancer registry Programme of the ICMR. KMIO being a referral cancer center, about 70% of the patients are referred by various medical institutions and private practitioners. The Institute has established two peripheral cancer centers at Mandya and Gulbarga with a main intention of reducing the distance of travel of cancer patients from far off 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 2001-2003, a total number of 42,674 new patients were registered, of which, 24,229(old + new) 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 24,229 (old + new), the proportion of cancers in females were higher and accounted for 54%(13,107 cases) of the total cancers compared to 46% (11,122 cases) in males.

#### Staff of Registry

Mr. D.J.Jayaram	:	Sr. Investigator/Scientific Assistant
Mr. C.Shivanna	:	Asst. Social Scientist
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 (On deputation from comm. oncology)
Mr. K.Venkatesh	:	Statistical Assistant (On deputation from DCCP)
Mrs. R.Gertrude	:	Stenographer
Mr. A.Subramani	:	Coding Clerk
Mr. B.M. Gangaiah	:	Data Entry Operator
Mr. Abdul Rasool	:	Literate Attender



# HOSPITAL BASED CANCER REGISTRY

## Cancer Institute (WIA), Adyar, Chennai

**Dr Shanta. V** Chairman, Cancer Institute (W.I.A) & Principal Investigator, ICMR

**Dr Swaminathan R**, Senior Bio-Statistician,  
Division of Epidemiology & Cancer Registry and  
Co-Investigator, HCR & PBCR (ICMR)

**Dr Nalini S**, Tutor, Division of Epidemiology & Cancer Registry

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

### Cancer Institute (W.I.A) - Salient features

The Cancer Institute (W.I.A), is a non-profit charitable institution, founded in 1954 by a team of dedicated women with a social commitment under the leadership of Dr. (Mrs) Muthulakshmi Reddy, the first woman in India to graduate in medicine. Presently, it comprises four components: (i) the post graduate teaching hospital with a bed strength of 428 consisting of the departments of surgical, radiation and medical oncology, (ii) the research center including laboratories of Molecular Oncology, Microbiology, Bio-Chemistry, Bio-Physics, Immunology, Cytogenetics and Electron Microscopy (iii) the Division of Preventive Oncology comprising two components: (a) Cancer prevention and early detection - essentially educational at the public and professional levels. Over 750 VHNs and 250 rural medical practitioners have been trained. Screening activity is currently ongoing in the neighbourhood of Chennai and is also proposed to be launched at a district level (b) Division of Epidemiology and Cancer Registries: Demographic and Hospital - carrying out cancer epidemiology and registration activities and (iv) the college of oncological sciences offering super specialty degree courses in oncology. The Cancer Institute (W.I.A), Chennai, is a Regional Cancer Centre for treatment of cancer in the Ministry of Health and Family Welfare, Government of India, since 1975. It celebrated the Golden Jubilee in 2004 after 50 years of committed service in cancer care and research.

### Hospital Cancer Registry (HCR)

The HCR at the institute has been functioning since 1955. It presently has 39 staff members serving in different capacities, besides a principal investigator and a co-investigator. The HCR has been responsible for descriptive statistics on the total number of patients seen, diagnosed as and/or treated for cancer annually, categorized by site, socio-demographic factors, extent of disease at presentation, providing information to PBCRs and other research activities and basic data for epidemiological studies and different types of case studies including survival analysis. In 2005, a total of 14,151 patients were registered from different parts of the country and outside: Chennai city and suburbs (26%), rest of Tamil Nadu (45%), Andhra Pradesh (22%) and others (7%); 8,950 (61%) of them were diagnosed to have cancer.

Data collection as per ICMR guidelines was started on 1st Jan 1984. New cases are registered using the hospital computer system and interviewed by social investigators for identification, demographic and epidemiological details. The remaining data as per ICMR Core proforma are abstracted from the medical records. The proformae are then scrutinized by Medical Officer/Statistician. The data are then entered into the computer. Computerized data are then checked for validity and consistency using NCRP, IARC and in-house computer programs. Quality control measures include regular exercises on coding for topography and morphology and re-abstraction of cases on a random sample.

The HCR from its inception has focused on the continued well-being and care of the patient and therefore places great emphasis on "follow-up". Follow up is an integral activity of the HCR at the Cancer Institute (WIA). A lifetime follow up of cancer cases is pursued until the death of the patient. With the follow up of cases being an arduous task in any developing environment, our HCR has evolved an efficient system of active follow up methods to augment the passive follow up. Staff is dedicated exclusively to communicate with patients and relatives through letters, telephone and e-mail for follow up. The availability of a complete follow up at five years from diagnosis, for any given site at any given time, is in the range of 70-90%. This rate is higher for specialized studies on clinical trials/protocol and survival. This has facilitated conduct of survival studies on common and selected cancers and publishing of the overall and disease free estimates as a routine in our HCR reports.

The high resolution data collection in the HCR has facilitated the conduct of many analytical epidemiological studies on cervix, female breast, stomach, oral cavity, occupational related cancers to name a few. Many inter department cooperative projects focusing on molecular and basic sciences research, are also being carried out. With the gradual increase in the level of computerization of hospital registration system, recent data on all aspects of cancer is readily available.

Hospital cancer registry publishes reports on various hospital statistics periodically. Training/ Workshops on "Cancer Registration, Epidemiology and Bio-Statistics" are organized regularly for (i) the personnel from other RCCs and institutions that are desirous of starting a registry, (ii) the students of IARC Summer Course on Cancer Epidemiology and (iii) students of medical documentation, statistics and social work from different colleges and universities. Epidemiological and survival studies on different cancers have been carried out and results have been published in international scientific journals. The registry assists in the conduct of randomized clinical trials.

# HOSPITAL BASED CANCER REGISTRY

## Regional Cancer Centre, Thiruvananthapuram

**Dr. B. Rajan**, Principal Investigator & Director

**Dr. Aleyamma Mathew**, Additional Professor of Statistics & Epidemiology

Regional Cancer Centre (RCC), Thiruvananthapuram, a state of the art super specialty hospital was established in 1981. This centre has all the disciplines in oncology such as radiation oncology, medical oncology, paediatric oncology, surgical oncology, community oncology, imageology, nuclear medicine, radiation physics, pain and palliative care, epidemiology, clinical and basic research all in one roof and with qualified and trained personnel. The centre caters to one third of the new cancer patient load in a year (around 10,000) in the State of Kerala. The centre records patient visit to the tune of 1.25 lakhs per annum with daily attendance numbering around 600. A multi-user computer networking is set-up for storing and retrieving of patient database. All the departments of the center are fully computerized and the entire hospital is under a local area network.

The centre is also increased in a number of basic and clinical research programmes with extramural funding. Our national and international collaborators include Indian Council of Medical Research, Dept. of Science & Technology, Govt. of India, Science, Technology and Environment of Kerala and international organizations such as World Health Organization, International Agency for Research on Cancer, National Cancer Institute, USA, Clinical Trial Unit, UK etc. The academic merit of the staff of the centre can be understood from the fact that the centre could publish more than 1350 papers in all these years of which 610 are in international peer reviewed journals.

The centre is actively involved in the implementation of the National Cancer Control Programme. This has augmented the early cancer detection facilities and the cancer awareness programme in the whole of the State of the Kerala. The peripheral activities of the centre are carried out through five of its remote units functioning at Kollam, Pathanamthitta, Ernakulam, Palakkad and Kannur. These units are connected to RCC to a Telemedicine network called "ONCONET". At present the telemedicine facilities and follow up visit are taken place through this tele link which provides a lot of help to patients and individuals by avoiding unnecessary journey to Trivandrum and the hardship associated with it. The clinical services are by a combined medical team drawn from all specialities and based on site-specific system. Treatment policy decisions are taken jointly and the best possible care is given to the patients.

The centre has also focused on human resource development. The centre conducted more than 50 national conferences and several workshops with participation by international experts. The centre has undertaken undergraduate and postgraduate training in some branches of oncology in collaboration with other acknowledged centres of academic and clinical excellence. Human resource development for all cancer control activities -medical, scientific and paramedical are undertaken by the centre.

## Hospital Based Cancer Registry (HBCR)

The HBCR of the RCC started in 1982 under the network of Indian Council of Medical Research (ICMR). Initially the HBCR collected information on cancer patients attending RCC and Medical College Hospitals. All the above hospitals are located in the same campus. In 1982, around 3500 cancer patients were reported in the registry, of these 85% was from the RCC and the rest from the medical college hospitals. Over the years the HBCR patient registration has increased. In 1996 (after 15 years) the source of registration was RCC for more than 95% of the patients in the registry. Hence from 1997 onwards, the medical college hospitals were de-linked from the HBCR, and the registry is restricted to patients from RCC only. Annually more than 8500 new cancer cases are recorded now.

The registry has made significant achievements in data abstraction in the last 5 years. The data abstraction and retrieval has been made online via intranet "rccintranet.org" with easy data management. This is a paperless registry in the country. The demographic details are collected by the social investigators and entered into the computer at the time of new patient registration at RCC and transferred to the national cancer registry core-proforma of ICMR. The data transfer avoids manual documentation of the first part (demographic details) of the ICMR core proforma. The second part (diagnostic, treatment and follow-up) is entered using the above software after retrieving case-sheets from the medical records division.

Using the above in-house software, the variables in the core proforma are selected from a selection box in the hypertext mark up language (HTML) form. The selection box contains all the codes along with their descriptions for each variable. This helps to avoid mistakes beyond the range of values for each variable. The selection box corresponding to the variables topography and morphology contains the third edition of international classification of diseases for oncology (ICD-O-3) and the international classification of diseases (ICD-10).

While abstracting the HBCR proforma, diagnostic, treatment and follow-up details are also documented through the website [www.onconetkerala.org](http://www.onconetkerala.org). This helps clinicians and other researchers to easily obtain the necessary information. HBCR serves for evaluating the performance of hospital administration, services and medical audit. It has an important supportive role in the care of cancer patients by assisting clinicians in the follow-up of their cases and by providing statistical data on the results of therapy.

The publication of the official newsletter of the National Cancer Registry Programme of India 'CRAB' by the Hospital Cancer Registry is continued and so far 12 volumes are published.

## District Cancer Control Programme, Thiruvananthapuram

The Government of India has identified RCC as the Nodal Agency for implementing DCCP in Thiruvananthapuram district. The cancer registry is involved in planning strategies, training of doctors and health workers, implementation and above all the evaluation methodologies of the programme. Appropriate cancer registration forms and habit survey forms are devised by the registry. The HBCR data will be used to evaluate the programme.

## Pattern of Care and Survival Studies of Head & Neck, Breast and Cervix Cancer

HBCR is one of the collaborating centers for the ICMR initiated network of pattern of care and survival studies on cancer cervix, breast and head & neck cancers. Currently a total of 290, 140 and 225 female breast cancer, cervix cancer and head & cancer cases respectively are abstracted using the specifically designed 'Patient Information Form'.

### Other staff of the registry

Ms. Padmakumari Amma G	:	Lecturer in Bio-statistics
Dr. Kalavathy M.C	:	Lecturer in Epidemiology
Ms. Anita Nayar	:	Social Investigator, Sr. Grade
Ms. Asha N.M	:	Clerk

# HOSPITAL BASED CANCER REGISTRY

## Assam Medical College, Dibrugarh

**Dr. U.C.Sharmah**, Director of Medical Education, Assam

**Prof. (Dr.) D. Hazarika**, Principal cum Chief Superintendent,  
AMCH, Principal Investigator, HBCR

**Dr. M.S. Ali**, Officer in Charge & Sr. Bio-Statistician

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

The HBCR has been functioning at AMC, Dibrugarh since February, 1982. During the long tenure the registry has been able to generate authentic data on the burden, the common cancers, its magnitude, method of diagnosis and treatment modalities of cancer patients treated at the hospital.

The registry had successfully completed two epidemiological case-control studies during 1988-91 on cancer pharynx and cancer Oesophagus and identified a number of potential risk factors particularly associated with the practices of the indigenous populations but unfortunately remained unutilized for planning measures for control and prevention of these two predominant cancers of the region.

However, several popular articles on the pattern, causative factors of common cancers, high risk groups etc have been published both in English and vernacular languages in the regional news papers for the awareness of both the medical personnel and common populace.

The registry staff has presented several scientific papers in various national and international conferences, seminars and meetings and have also published articles in indexed journals. Moreover the staff have also participated as resourced persons in several WHO, NCRP and UGC sponsored workshops.

The registry database has been widely used for a variety of analysis resulting in several scientific publications both by the P.G students and clinicians of the institute. Moreover the registry has been extending expertise and guidance to a large number of P.G students in the matters of planning, designing and statistical analysis.

Two candidates have already obtained their Ph.D. degrees by utilizing the expertise and data of HBCR and another one is about to submit his thesis for Ph.D. under Dibrugarh University. In a big way HBCR, Dibrugarh is very much involved in human resource development in cancer epidemiology.

The base institution being only a tertiary general hospital lacks the required infrastructure of a comprehensive cancer center and because of which compared to other cancer centers, the number of cancer cases attending the institute is low. Due to the inadequate number of eligible cases in specific sites it has not been possible to undertake scientific studies on some of the important objectives of

HBCR like patient care, survival and epidemiologic studies on common cancers of the region.

However, it has been proposed to undertake from January 1, 2007, the study on pattern of care and survival of female breast, cervix and head & neck cancers at AMCH, Dibrugarh. Head and neck cancers constitute around 30% of total incident cancer cases reported for diagnosis and treatment at the hospital. Almost 100% of these cancers are diagnosed microscopically, 90% have either description of the clinical extent of disease or TNM staging and 96% of the patients receive CDT at this hospital. Around 50 new cases each of cancers of the breast and cervix reported for diagnosis and treatment yearly in the hospital and 100% of these cases are microscopically diagnosed and staged as per TNM and FIGO staging system and 95% of them receive CDT.

Moreover, the institute has received grant from the Ministry of Health, GOI under NCCP for augmenting therapeutic and diagnostic infrastructure for optimal cancer care in the hospital. Under the scheme there is a provision for opening an oncology OPD which would enable HBCR to streamline the follow-up system of cancer patients. It is expected that adequate number of incident cancer cases of breast, cervix and head and neck would be available to study the site treatment and stage specific survival pattern. Follow up strategy of the eligible patients would be evolved with the active cooperation of the clinicians and nursing staff of the respective disciplines.

#### Other Staff of the hospital based cancer registry, Dibrugarh:

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





# Chapter 1

## MAGNITUDE AND LEADING SITES OF CANCER

Table 1.1(a) gives the total number of cancers diagnosed at five different hospital based cancer registries (HBCRs), over the period of three years from 1st January 2001 to 31st December 2003. A total of 122273 cancers (63444 males and 58829 females) were diagnosed at the five HBCRs. Among these, the proportion of cancers diagnosed at different HBCR hospitals were: 39.4% at Mumbai, 19.2% at Bangalore, 19.0 % at Chennai, 20.3% at Thiruvananthapuram and 2.1% at Dibrugarh. In Bangalore and Chennai for every 100 female patients 85 to 88 male patients were reported, whereas in Mumbai (128), Thiruvananthapuram (112) and Dibrugarh (176) more male patients were reported.

Table 1.1 (b) presents the number of cancer patients including the old (New+Old), treated during the reporting period at the five registry hospitals.

The distribution of cases according to registries and the type are shown in Table 1.1(c). The registries of Mumbai, Bangalore, Chennai, Thiruvananthapuram and Dibrugarh reported 1393(1554), 325(469), 758(968), 699(627) and 12(8) old cases of males (females) respectively, during the reporting period.

Fig. 1 gives the trends in the actual total number of cancers registered from 1984 to 2003 in the different HBCRs.

The number, proportion relative to all sites and rank of the ten leading sites in males and females for the years 2001-03 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(a) : Number (#) and Proportion (%) according to sex, sex ratio percent and relative proportion (Rel. Prop.) of cancers - New cases (2001-03)**

Registry	Males		Females		Sex* Ratio%	Total Cases	Rel. Prop.
	#	%	#	%			
<b>Mumbai</b>	27078	56.2	21121	43.8	128	48199	39.4
<b>Bangalore</b>	10799	46.1	12636	53.9	85	23435	19.2
<b>Chennai</b>	10866	46.7	12417	53.3	88	23283	19.0
<b>Thi'puram</b>	13099	52.7	11745	47.3	112	24844	20.3
<b>Dibrugarh</b>	1602	63.8	910	36.2	176	2512	2.1
<b>Total</b>	<b>63444</b>	<b>51.9</b>	<b>58829</b>	<b>48.1</b>	<b>108</b>	<b>122273</b>	<b>100.0</b>

\* Number of male patients per 100 female patients

**Table 1.1 (b): Distribution of cancer cases according to registration year and date of diagnosis (2001-03)**

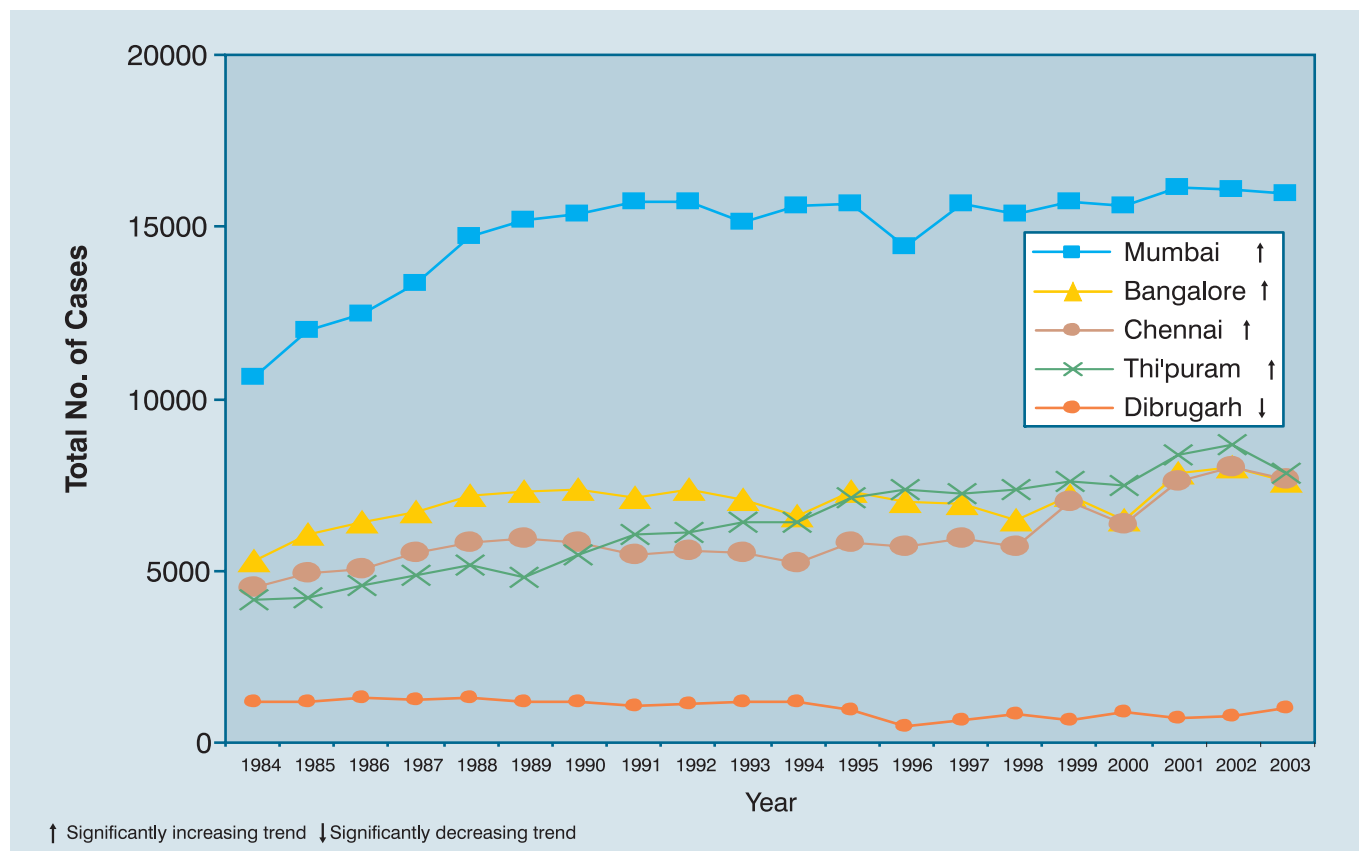
Registry	Males		Females	
	New registrations with date of diagnosis in same calendar year	New registrations with date of diagnosis in earlier calendar years	New registrations with date of diagnosis in same calendar year	New registrations with date of diagnosis in earlier calendar years
<b>Mumbai</b>	27078	1393	21121	1554
<b>Bangalore</b>	10799	325	12636	469
<b>Chennai</b>	10866	758	12417	968
<b>Thi'puram</b>	13099	699	11745	629
<b>Dibrugarh</b>	1602	12	910	8
<b>Total</b>	<b>63444</b>	<b>3187</b>	<b>58829</b>	<b>3628</b>

**Table. 1.1 (c): Number (#) and Proportion (%) according to sex, sex ratio percent and relative proportion (Rel. Prop.) of all new registrations (2001-03)**

Registry	Males		Females		Sex* Ratio%	Total Cases	Rel. Prop.
	#	%	#	%			
<b>Mumbai</b>	28471	55.7	22675	44.3	126	51146	39.6
<b>Bangalore</b>	11124	45.9	13105	54.1	85	24229	19.2
<b>Chennai</b>	11624	46.5	13385	53.5	87	25009	19.8
<b>Thi'puram</b>	13798	52.7	12374	47.3	112	26172	20.8
<b>Dibrugarh</b>	1614	63.7	918	36.3	176	2532	2.0
<b>Total</b>	<b>66631</b>	<b>51.6</b>	<b>62457</b>	<b>48.4</b>	<b>107</b>	<b>129088</b>	<b>100.0</b>

\*Number of male patients per 100 female patients.

**Fig. 1 : Trends in total number of cancers registered (both sexes) 1984-2003**



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

In *Mumbai*, mouth (12.2%) was the leading site of cancer, followed by lung (7.6%), tongue (6.8%), Non-Hodgkin's Lymphoma (NHL) (5.4%) and oesophagus (4.8%)

In *Bangalore*, hypopharynx (9.3%), oesophagus (9.0%), lung (6.5%), stomach (6.4%) and mouth (5.3%) were the five leading sites in that order.

In *Chennai*, stomach (9.1%) and mouth (8.4%) were the leading sites. These two sites were followed by lung (7.0%), oesophagus (6.8%), tongue (6.7%) .

In *Thiruvananthapuram*, lung (13.6%) was the leading site followed by mouth (9.4%), tongue (5.9%), NHL (5.4%) and oesophagus (5.0%).

In *Dibrugarh*, hypopharynx (16.7%) and oesophagus (16.3%) like in past years, remained the leading sites followed by mouth (6.6%), tongue (5.4%) and stomach (5.4%).

**Females**

In *Mumbai*, breast (27.2%) was the leading site of cancer followed by cervix (16.8%), ovary (5.4%), mouth (5.0%) and oesophagus (3.3%).

**Table 1.2: Number(#), Relative Proportion(%) and Rank(R) of Leading Sites of Cancer (2001-03)****MALES**

Sites	Mumbai			Bangalore			Chennai			Thi'puram			Dibrugarh		
	#	%	R	#	%	R	#	%	R	#	%	R	#	%	R
Mouth	3289	12.2	1	573	5.3	5	916	8.4	2	1230	9.4	2	106	6.6	3
Lung	2048	7.6	2	697	6.5	3	755	6.9	3	1776	13.6	1	48	3.0	8
Tongue	1845	6.8	3	569	5.3	6	732	6.7	5	775	5.9	3	87	5.4	4
NHL	1455	5.4	4	436	4.0	8	427	3.9	8	705	5.4	4	15	0.9	*
Oesophagus	1302	4.8	5	976	9.0	2	739	6.8	4	656	5.0	5	261	16.3	2
Hypopharynx	1301	4.8	6	1004	9.3	1	633	5.8	6	380	2.9	*	267	16.7	1
Myeloid leukaemia	1256	4.6	7	385	3.6	*	372	3.4	9	432	3.3	9	17	1.1	*
Larynx	1234	4.6	8	428	4.0	9	460	4.2	7	643	4.9	6	72	4.5	6
Lymphoid leuk.	949	3.5	9	399	3.7	10	275	2.5	10	406	3.1	10	8	0.5	*
Stomach	838	3.1	10	688	6.4	4	985	9.1	1	578	4.4	7	87	5.4	5
Brain NS	564	2.1	*	522	4.8	7	99	0.9	*	470	3.6	8	20	1.2	10
Penis	294	1.1	*	175	1.6	*	263	2.4	*	94	0.7	*	20	1.2	*
Tonsil	422	1.6	*	168	1.6	*	204	1.9	*	116	0.9	*	63	3.9	7
Pharynx	12	0.0	*	110	1.0	*	53	0.5	*	33	0.3	*	39	2.4	9
<b>Total</b>	<b>16809</b>	<b>62.1</b>		<b>7130</b>	<b>66.0</b>		<b>6913</b>	<b>63.6</b>		<b>8294</b>	<b>63.3</b>		<b>1110</b>	<b>69.3</b>	
<b>All Sites</b>	<b>27078</b>	<b>100.0</b>		<b>10799</b>	<b>100.0</b>		<b>10866</b>	<b>100.0</b>		<b>13099</b>	<b>100.0</b>		<b>1602</b>	<b>100.0</b>	

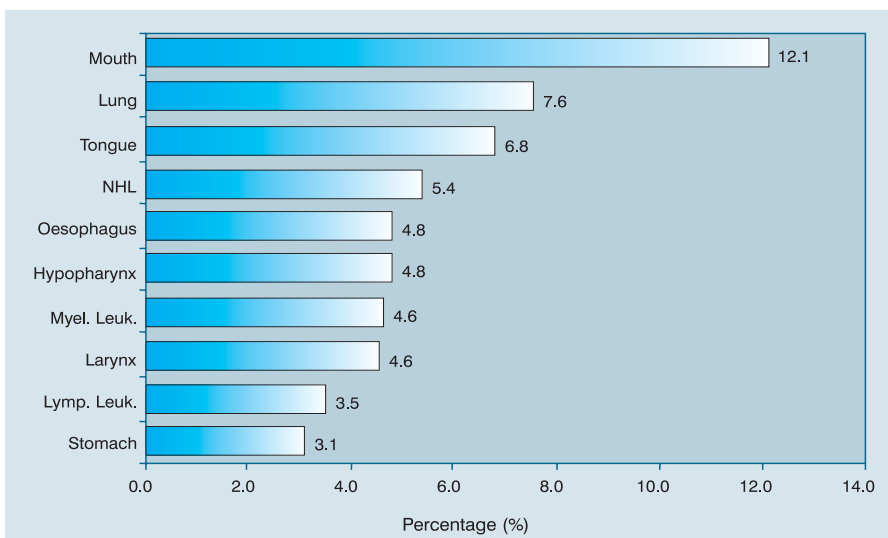
**FEMALES**

Sites	Mumbai			Bangalore			Chennai			Thi'puram			Dibrugarh		
	#	%	R	#	%	R	#	%	R	#	%	R	#	%	R
Breast	5738	27.2	1	1867	14.8	2	2690	21.7	2	3524	30.0	1	130	14.3	2
Cervix	3547	16.8	2	3777	29.9	1	3815	30.7	1	1337	11.4	2	119	13.1	3
Ovary	1136	5.4	3	604	4.8	5	618	5.0	4	705	6.0	4	61	6.7	5
Mouth	1054	5.0	4	1323	10.5	3	706	5.7	3	696	5.9	5	67	7.4	4
Oesophagus	707	3.3	5	779	6.2	4	441	3.6	5	176	1.5	*	143	15.7	1
Gall bladder	659	3.1	6	52	0.4	*	73	0.6	*	35	0.3	*	43	4.7	6
Myeloid leukaemia	637	3.0	7	269	2.1	8	249	2.0	8	349	3.0	6	11	1.2	*
NHL	583	2.8	8	210	1.7	10	177	1.4	*	292	2.5	8	7	0.8	*
Tongue	550	2.6	9	142	1.1	*	218	1.8	10	324	2.8	7	22	2.4	9
Lung	518	2.5	10	155	1.2	*	196	1.6	*	246	2.1	*	12	1.3	*
Thyroid	450	2.1		441	3.5	6	254	2.1	7	1084	9.2	3	8	0.9	*
Stomach	315	1.5		314	2.5	7	388	3.1	6	165	1.4	*	35	3.8	7
Brain NS	272	1.3		256	2.0	9	44	0.4	*	283	2.4	9	12	1.3	*
Hypopharynx	222	1.1		201	1.6	*	247	2.0	9	58	0.5	*	24	2.6	8
Vagina	120	0.6		97	0.8	*	197	1.6	10	63	0.5	*	2	0.2	*
Rectum	360	1.7		166	1.3	*	188	1.5	*	261	2.2	10	20	2.2	10
<b>Total</b>	<b>16868</b>	<b>79.9</b>		<b>10653</b>	<b>84.3</b>		<b>10501</b>	<b>84.6</b>		<b>9598</b>	<b>81.7</b>		<b>716</b>	<b>78.7</b>	
<b>All Sites</b>	<b>21121</b>	<b>100.0</b>		<b>12636</b>	<b>100.0</b>		<b>12417</b>	<b>100.0</b>		<b>11745</b>	<b>100.0</b>		<b>910</b>	<b>100.0</b>	

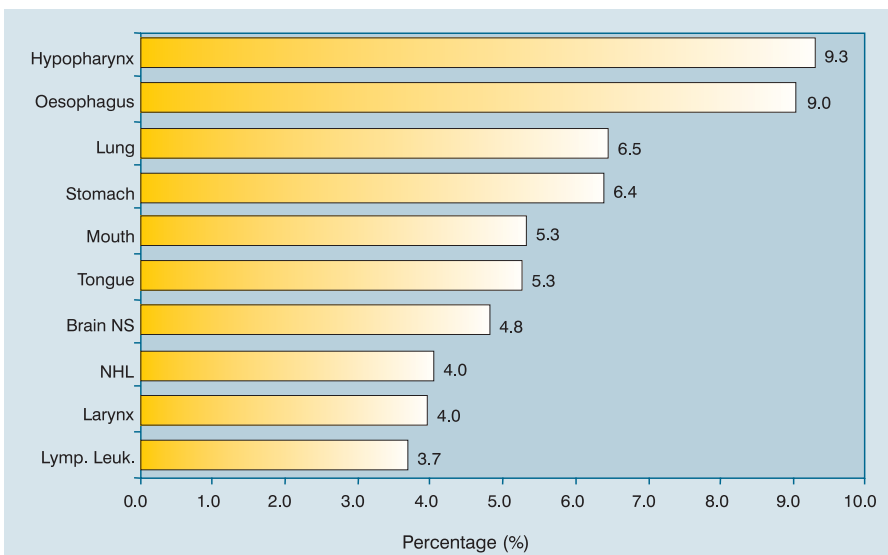
\* Rank not within first ten

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

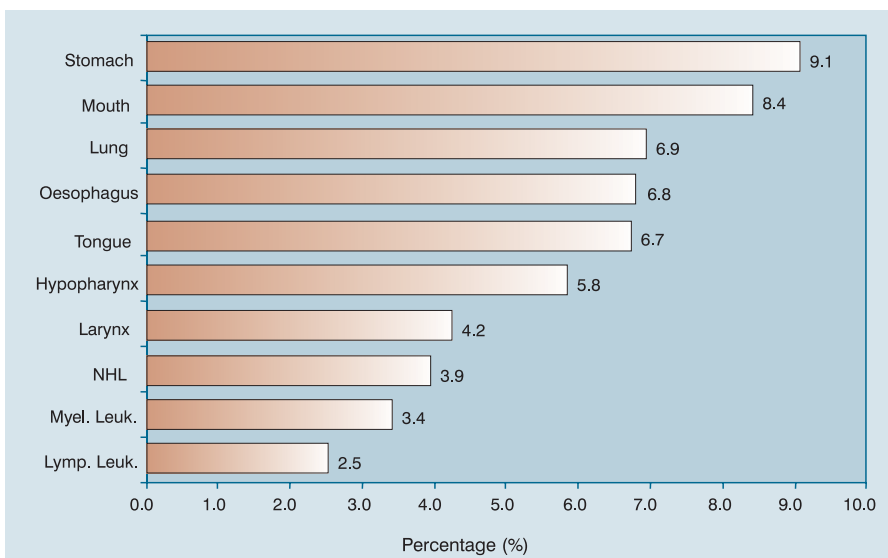
**Mumbai**



**Bangalore**

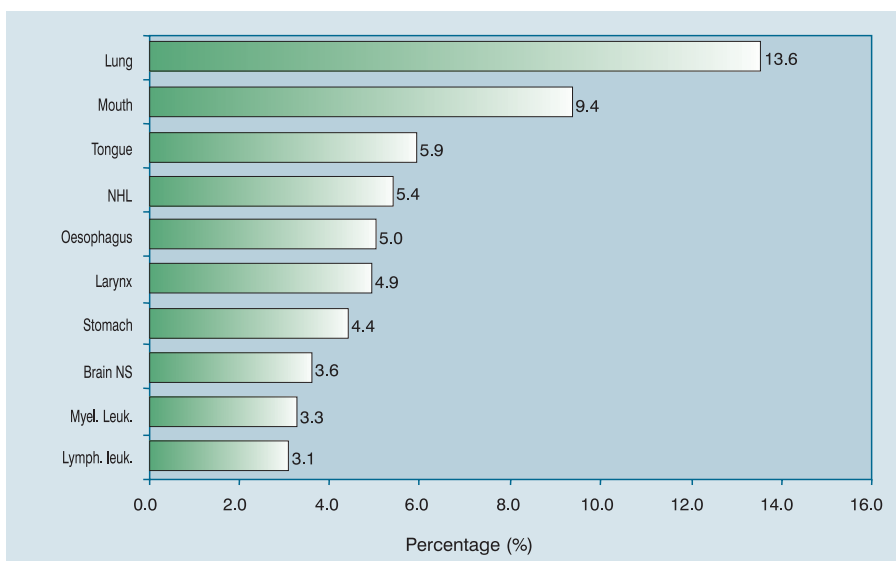


**Chennai**

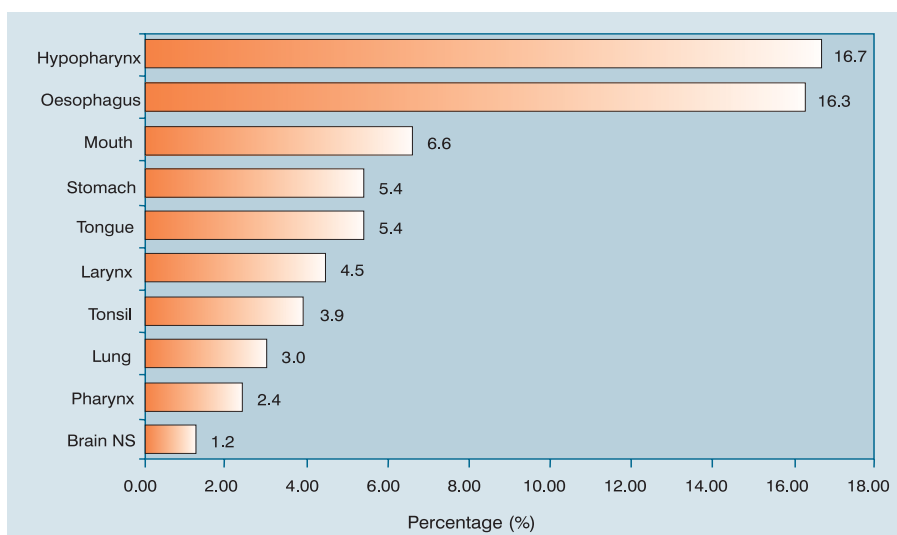


**Fig. 1.1(a) : Ten Leading Sites of Cancer - Males (Contd..)**

**Thiruvananthapuram**



**Dibrugarh**



In *Bangalore*, cancer of the cervix was the leading site, accounting for about 29.9% of cancer in females, followed by breast (14.8%), mouth (10.5%), oesophagus (6.2%) and ovary (4.8%).

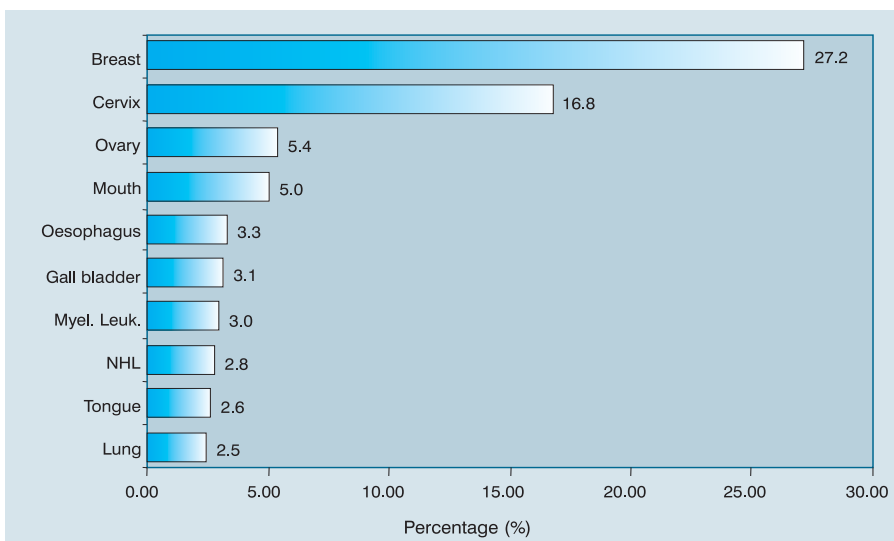
In *Chennai* the first three leading sites were same as Bangalore. The fourth and fifth sites were ovary and oesophagus respectively.

In *Thiruvananthapuram*, thyroid gland (9.2%) was the third leading site after breast (30.0%) and cervix (11.4%). Thyroid gland was followed by the cancers of ovary (6.0%) and mouth (5.9%).

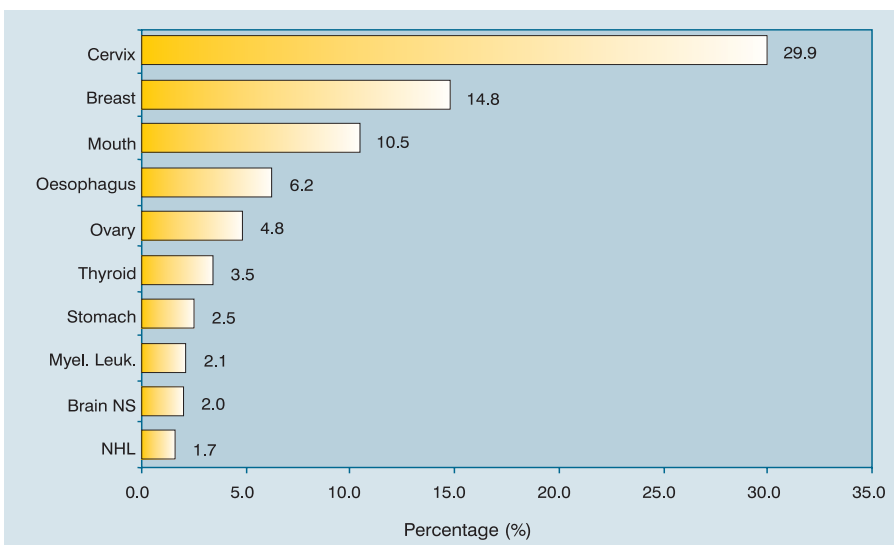
In *Dibrugarh*, oesophagus was the leading site, accounting for 15.7% of cancers in females, followed by breast (14.3%), cervix (13.1%), mouth (7.4%) and ovary (6.7%).

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

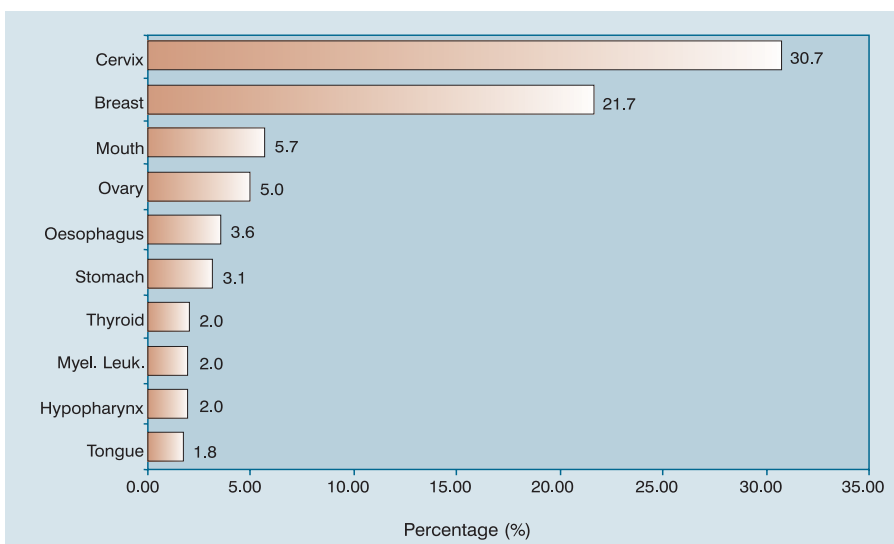
**Mumbai**



**Bangalore**

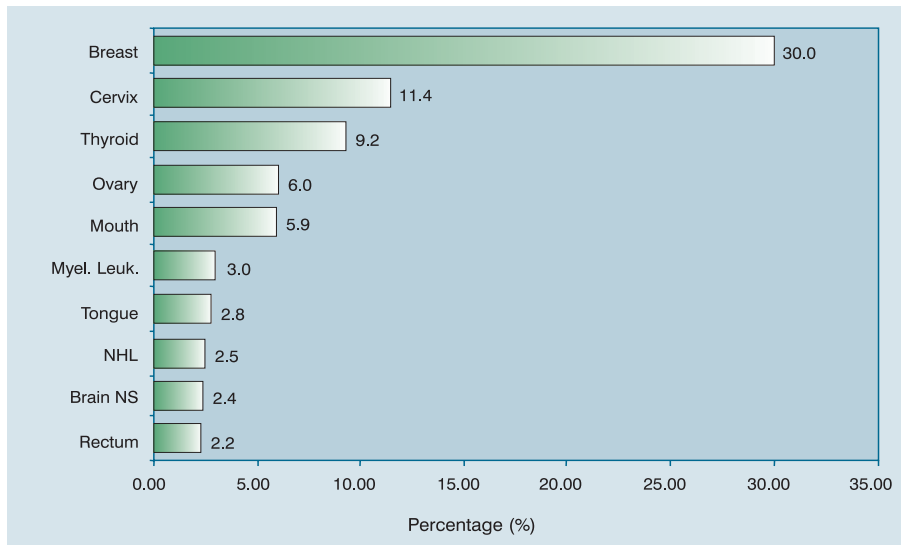


**Chennai**

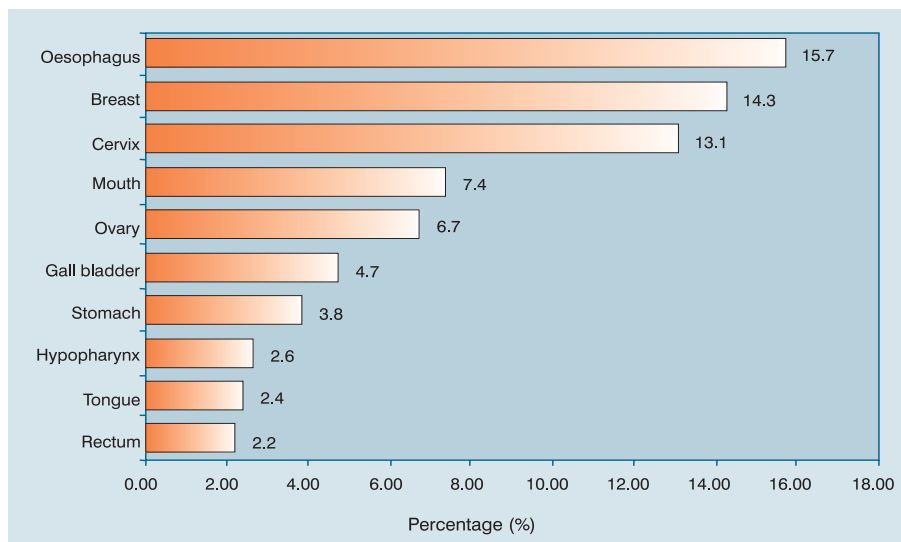


**Fig. 1.1(b) : Ten Leading Sites of Cancer - Females (Contd..)**

**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 6.6 to 13.9% in all the registries and both sexes. Proportion of patients in the age group 35-64 years varied from 56.9% in males in Thiruvananthapuram to 63.4% in Dibrugarh. In females the proportion of cancers in the age group 35-64 years varied from 63.2% in Thiruvananthapuram to 74.4% in Chennai.

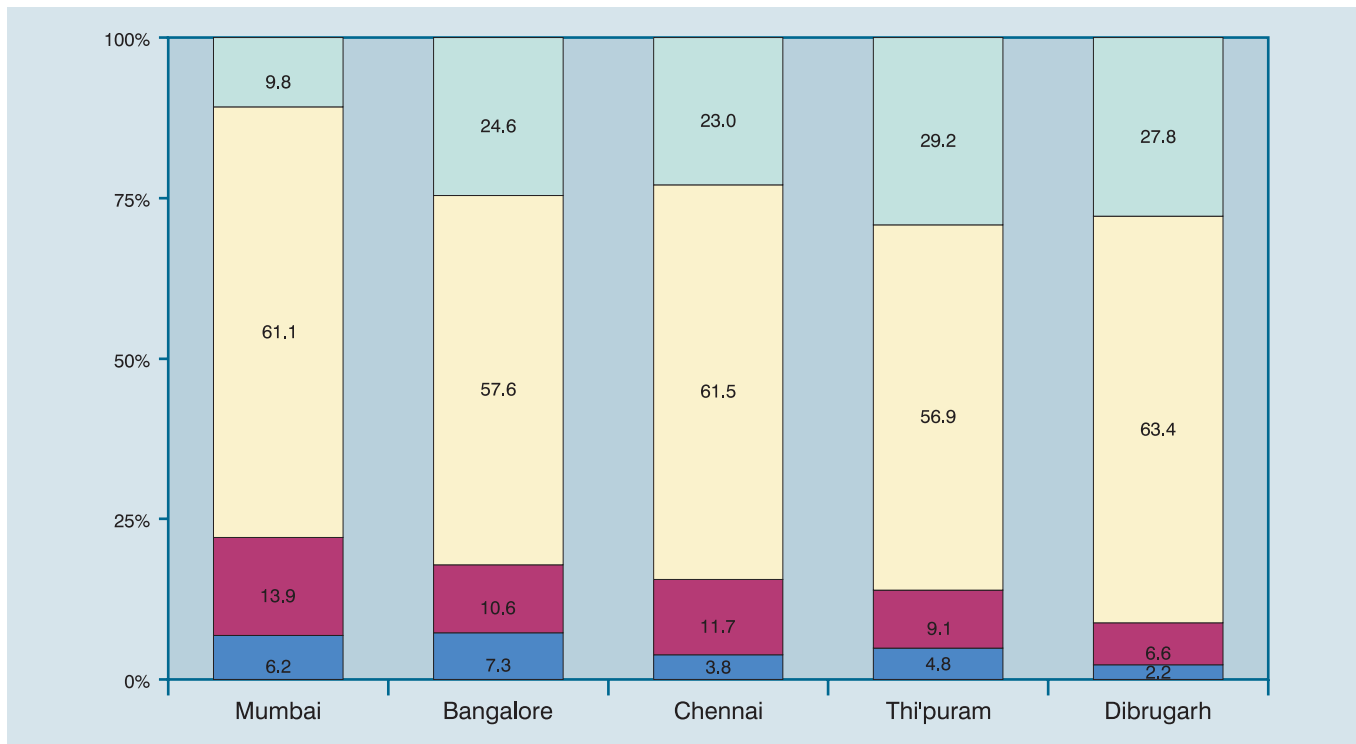
The leading sites of cancers according to broad age groups are depicted in Fig. 1.3(a) to 1.5(b).

**Table.1.3: Number (#) and Proportion (%) of Cancers by Broad Age Groups (2001-03)**

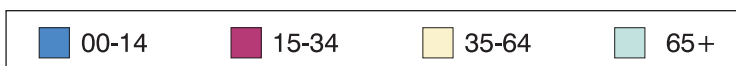
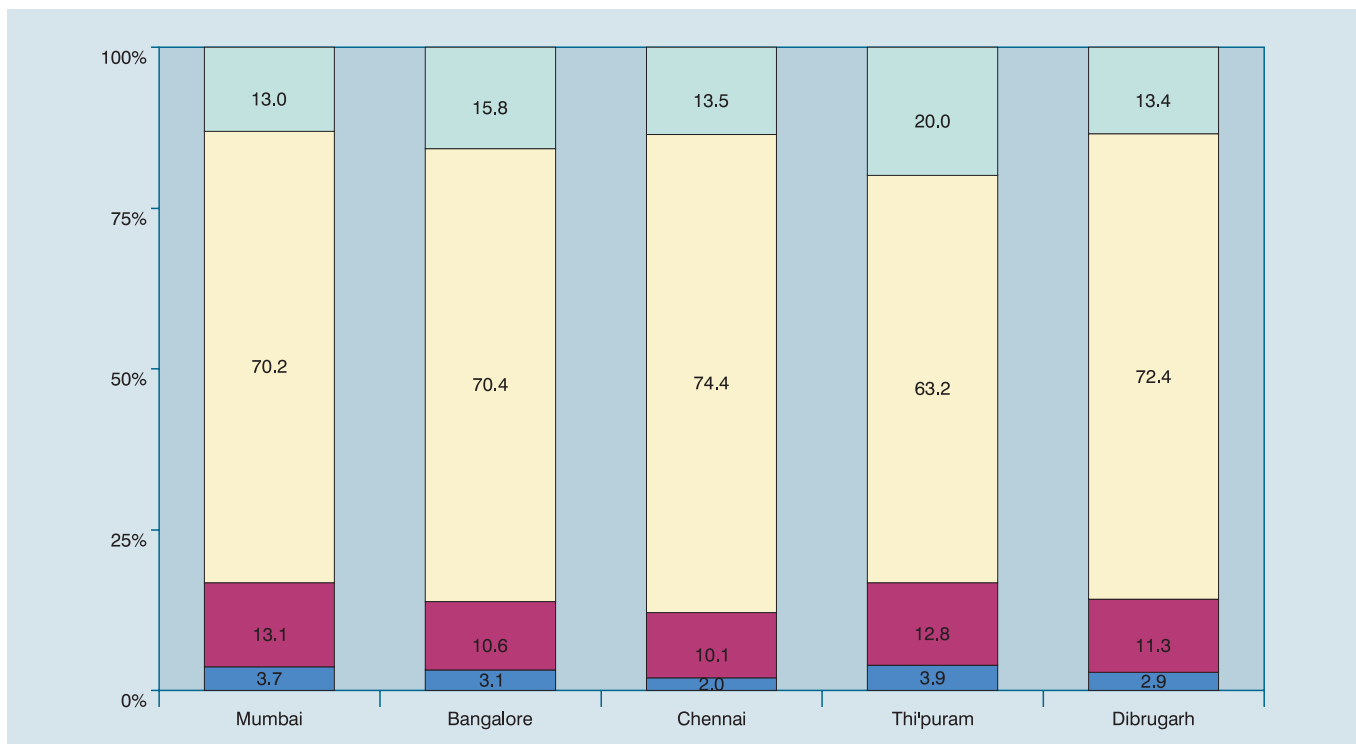
Registry	00-14		15-34		35-64		65+		All Ages #
	#	%	#	%	#	%	#	%	
<b>Males</b>									
Mumbai	1687	6.2	3755	13.9	16539	61.1	5097	18.8	27078
Bangalore	783	7.3	1148	10.6	6215	57.6	2653	24.6	10799
Chennai	418	3.8	1270	11.7	6680	61.5	2498	23.0	10866
Thi'puram	633	4.8	1189	9.1	7455	56.9	3821	29.2	13098
Dibrugarh	36	2.2	106	6.6	1015	63.4	445	27.8	1602
<b>Females</b>									
Mumbai	784	3.7	2757	13.1	14826	70.2	2752	13.0	21121
Bangalore	398	3.1	1344	10.6	8900	70.4	1994	15.8	12636
Chennai	246	2.0	1255	10.1	9236	74.4	1680	13.5	12417
Thi'puram	462	3.9	1509	12.8	7427	63.2	2347	20.0	11745
Dibrugarh	26	2.9	103	11.3	659	72.4	122	13.4	910
<b>Both Sexes</b>									
Mumbai	2471	5.4	6512	14.2	31365	68.6	7851	16.3	48199
Bangalore	1181	5.0	2492	10.6	15115	64.5	4647	19.8	23435
Chennai	664	2.9	2525	10.8	15916	68.4	4178	17.9	23283
Thi'puram	1095	4.4	2698	10.9	14882	59.9	6168	24.8	24844
Dibrugarh	62	2.5	209	8.3	1674	66.6	567	22.6	2512

**Fig 1.2 : Stack (100%) diagram showing Proportion of Cancer by Broad Age Groups - 2001-03**

**Males**



**Females**



## Age Group (15-34 Years)

### Males:

Myeloid leukaemia was the leading site in Mumbai and Chennai and the second leading site in Bangalore, Dibrugarh and Thiruvananthapuram. Brain was the leading site in Bangalore and Thiruvananthapuram. Bone was among the first three leading sites in all HBCRs except Thiruvananthapuram where it was the sixth leading site. NHL was an important site figuring within first six at all the registries.

### Females:

Breast was the leading site in Mumbai, Chennai and Dibrugarh whereas cervix uteri in Bangalore and thyroid in Thiruvananthapuram were the leading sites.

## Age Group (35-64 Years)

### Males:

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

### Females:

Breast and cervix were the leading sites in all the registries except Dibrugarh where oesophagus was the leading site followed by breast. Ovary and mouth were other important sites within first five. Oesophagus was within first five leading sites in all the registries except in Mumbai and Thiruvananthapuram. Thyroid gland was third leading site only in Thiruvananthapuram and within first ten in Bangalore and Chennai.

## Age Group (65 Years and above)

### Males:

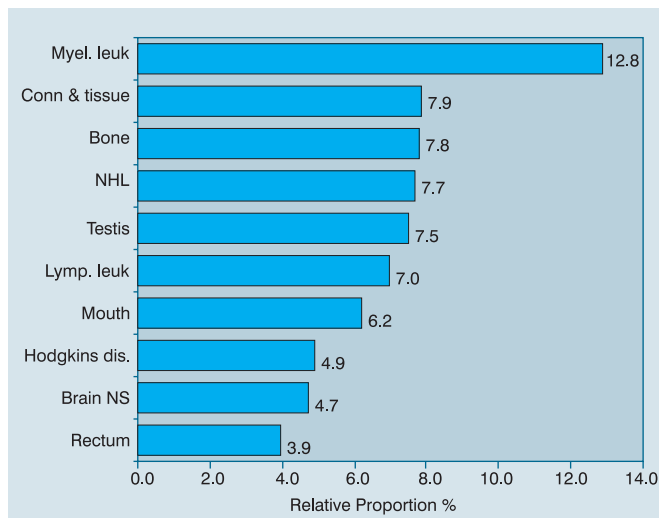
In this age group, lung was the leading site in Mumbai and Thiruvananthapuram and third in Bangalore and Chennai. Hypopharynx was the leading site in Bangalore and Dibrugarh. Mouth was the leading site in Chennai while it was among the first six sites in other registries.

### Females:

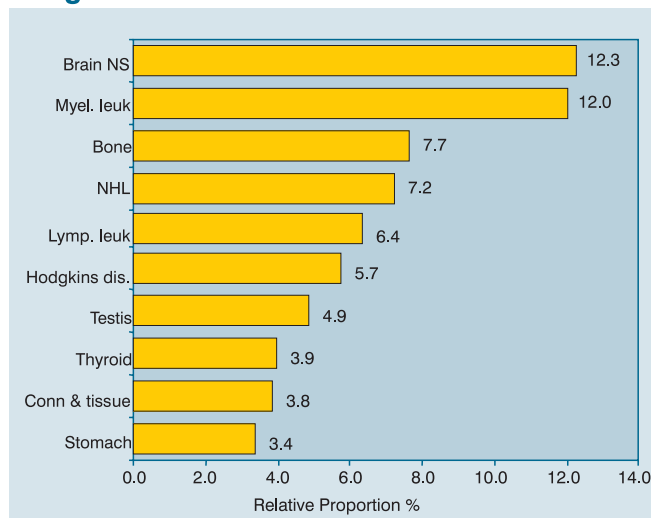
Cervix was the leading site in this age group in Bangalore and Chennai while it was the second leading site in other three registries. Breast was the leading site in Mumbai and Thiruvananthapuram while it was in the first five in Chennai and Bangalore. In Dibrugarh breast was the tenth leading site. Mouth was within the first five leading sites in all other registries.

**Fig 1.3(a) : Leading Sites in Broad Age Groups (15-34 years) – Males (2001-2003)**

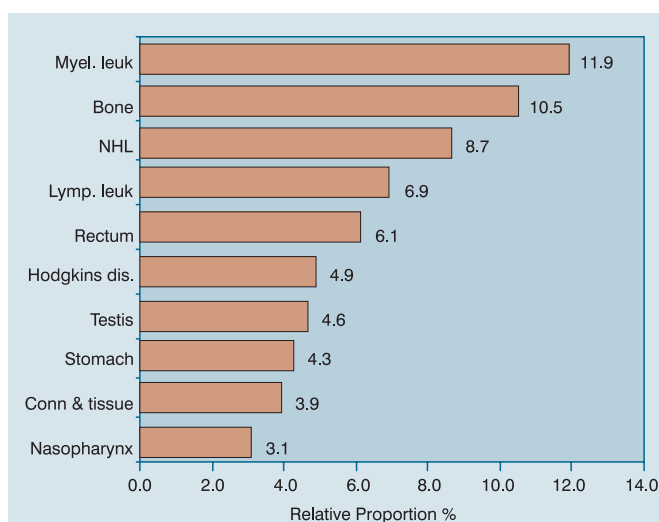
**Mumbai**



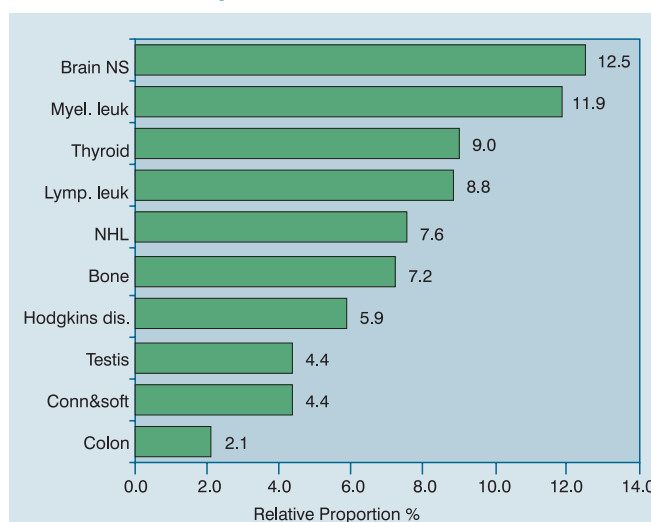
**Bangalore**



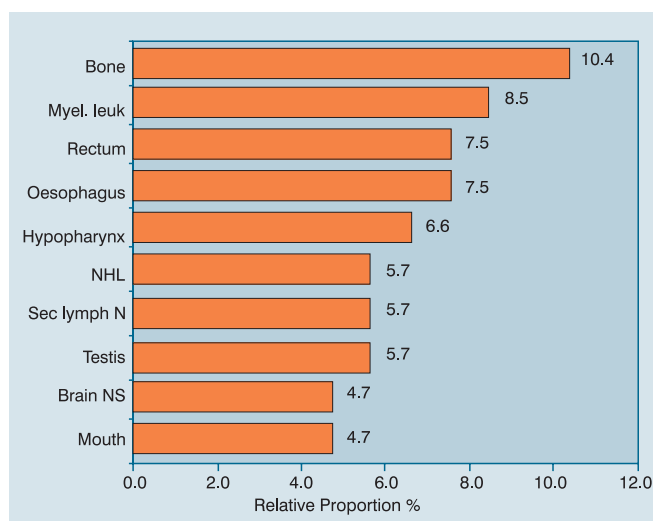
**Chennai**



**Thiruvananthapuram**

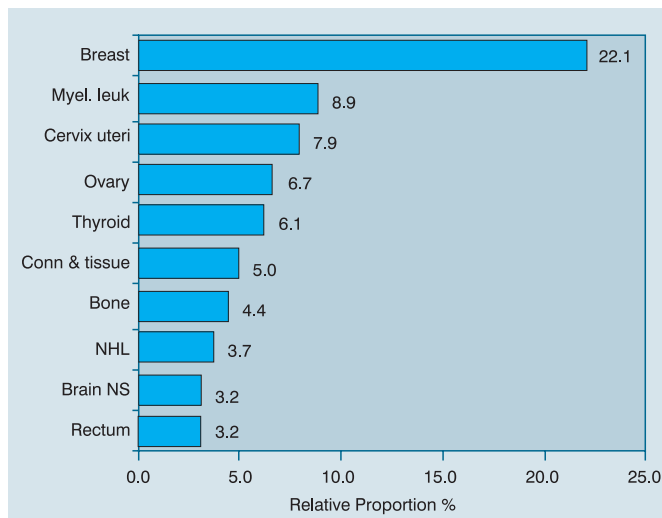


**Dibrugarh**

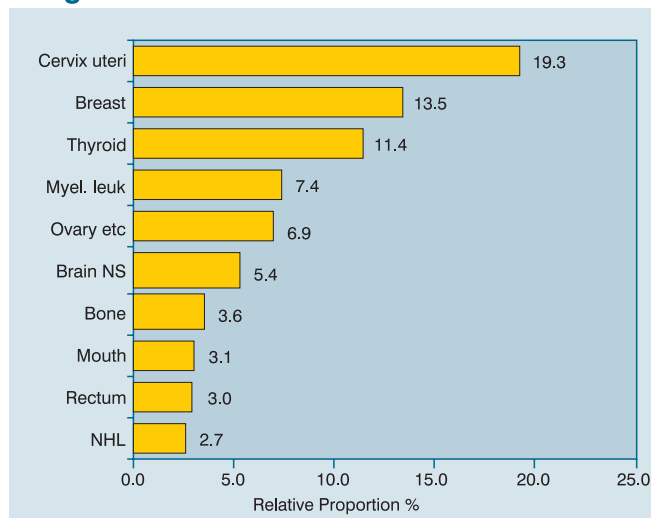


**Fig 1.3(b) : Leading Sites in Broad Age Groups (15-34 years) – Females (2001-2003)**

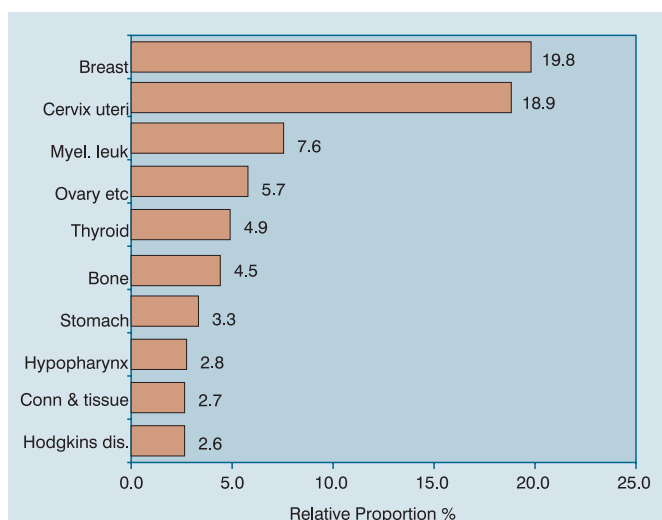
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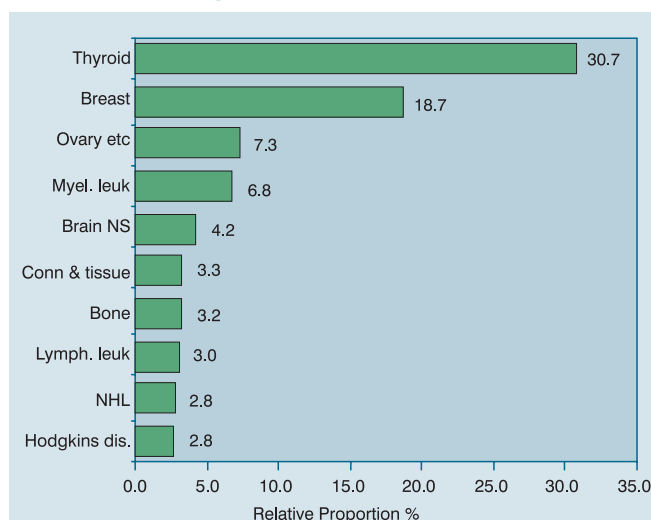
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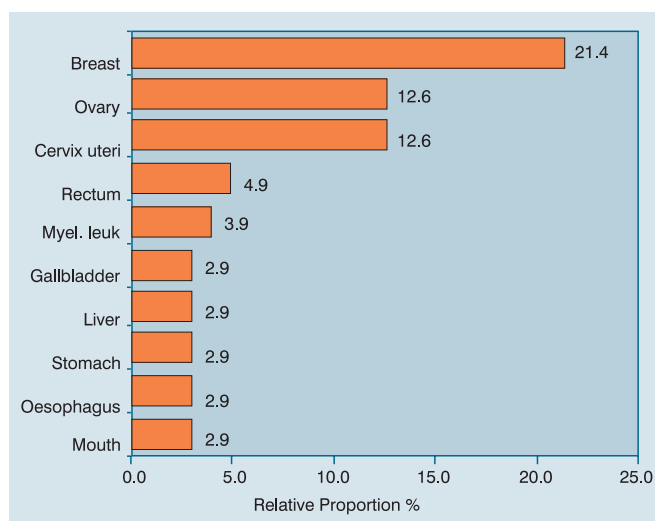
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**Thiruvananthapuram**

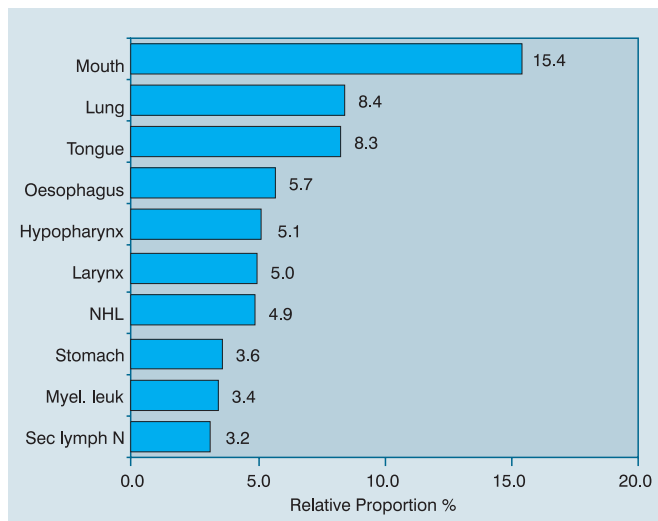


**Dibrugarh**

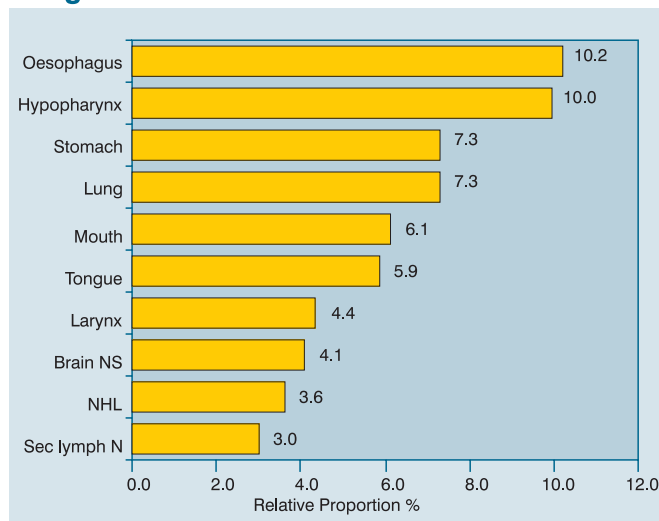


**Fig 1.4(a) : Leading Sites in Broad Age Groups (35-64 years) – Males (2001-2003)**

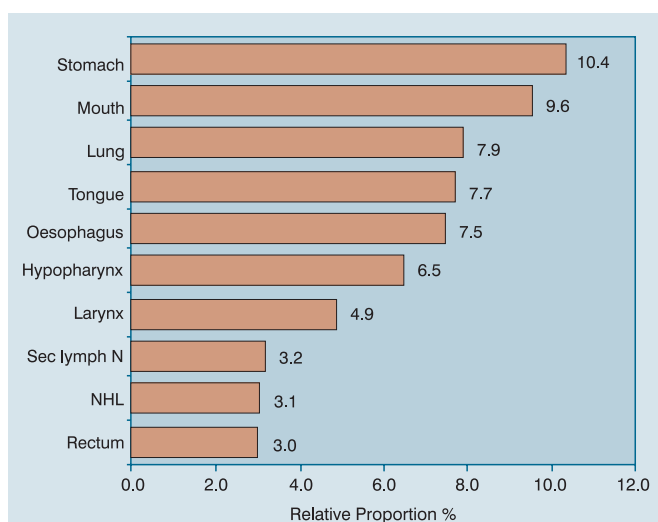
**Mumbai**



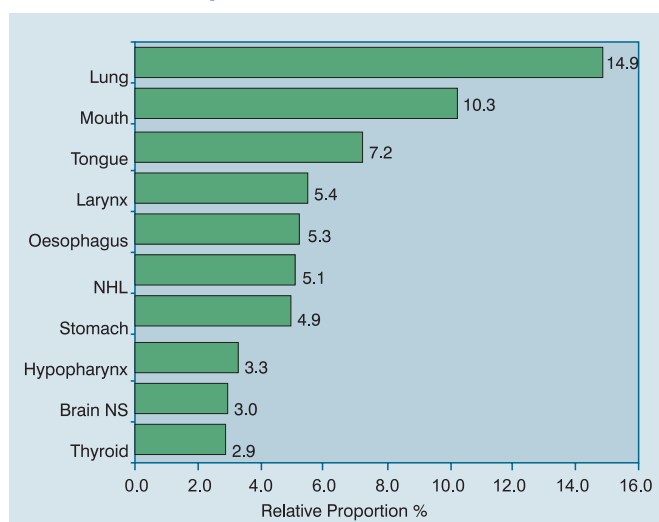
**Bangalore**



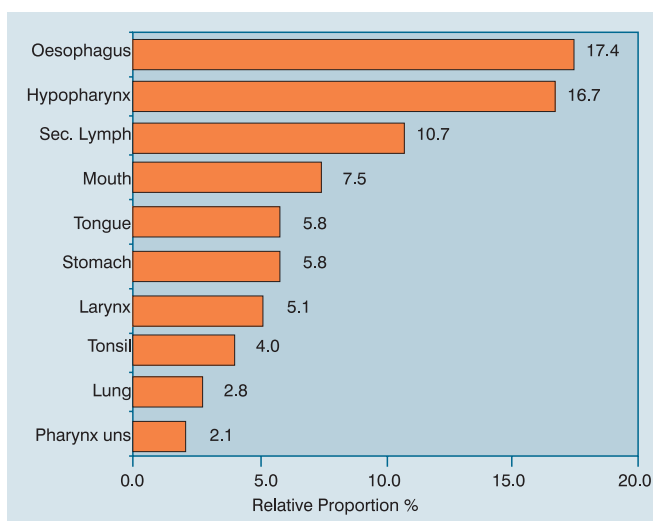
**Chennai**



**Thiruvananthapuram**

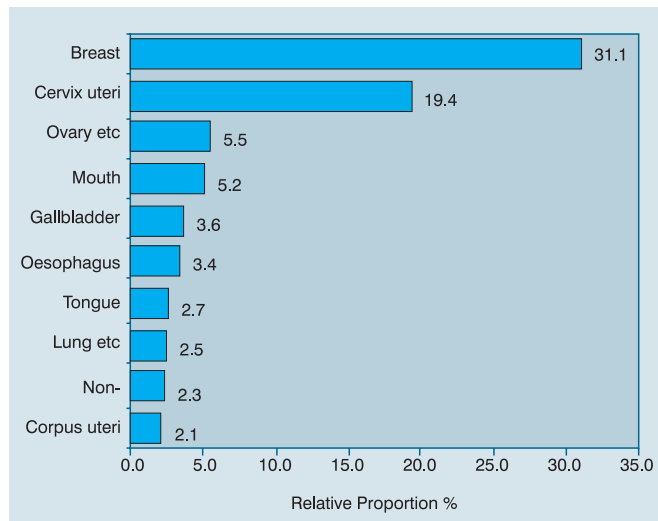


**Dibrugarh**

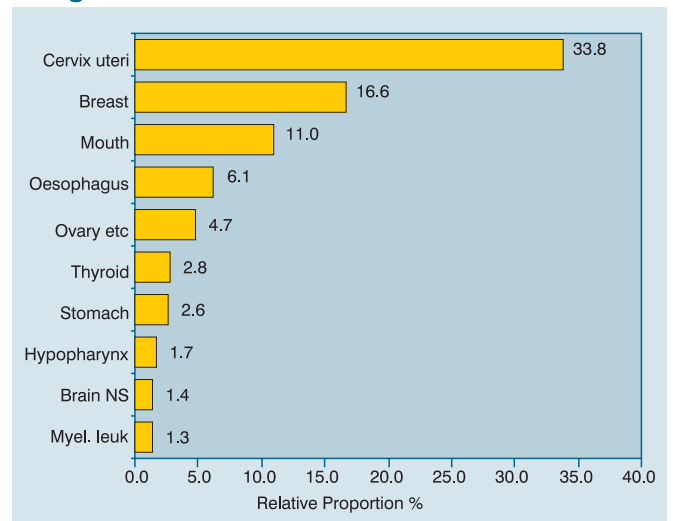


**Fig 1.4(b) : Leading Sites in Broad Age Groups (35-64 years) – Females (2001-2003)**

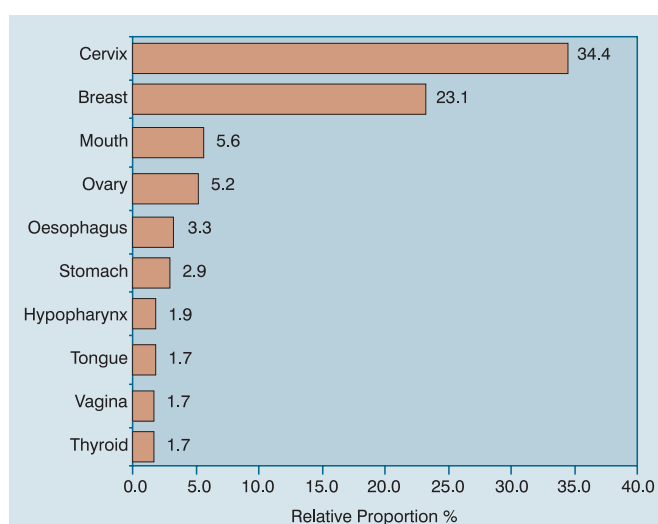
**Mumbai**



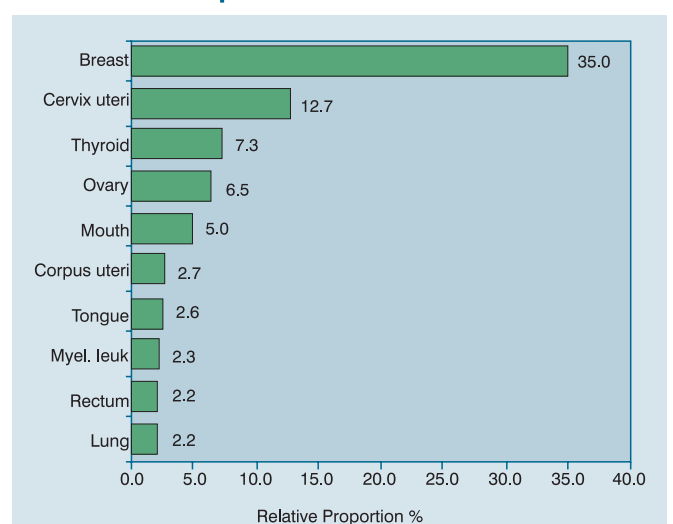
**Bangalore**



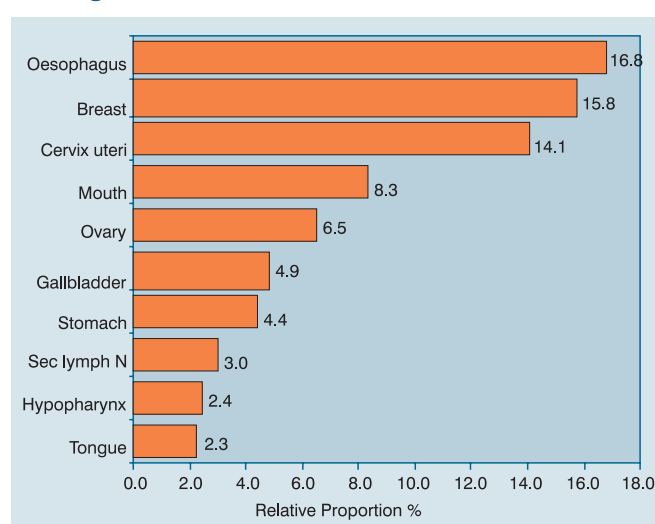
**Chennai**



**Thiruvananthapuram**

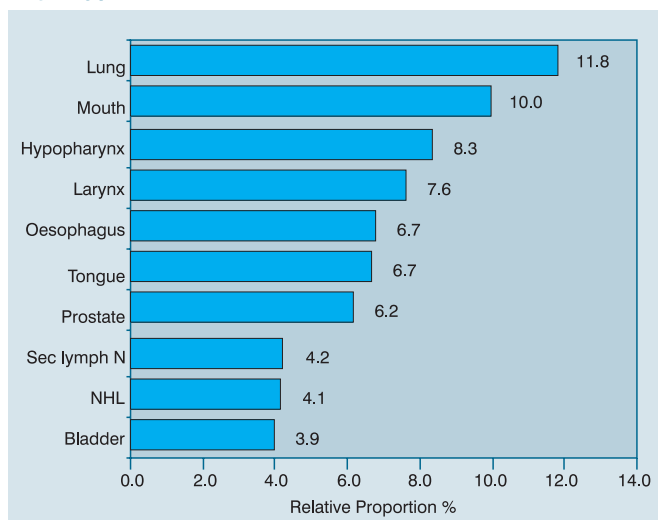


**Dibrugarh**

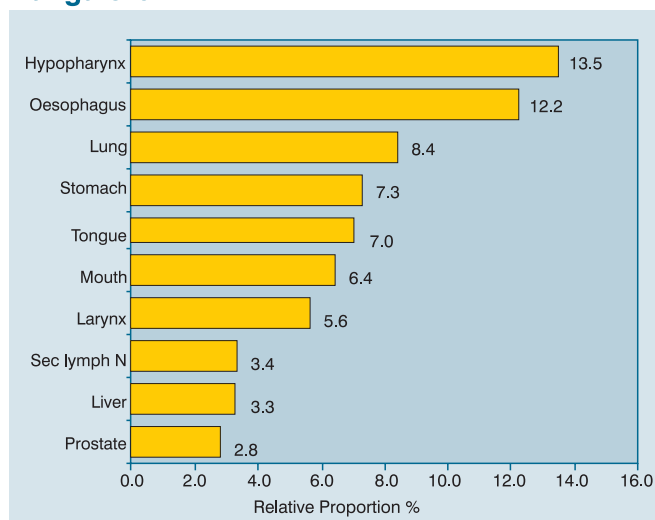


**Fig 1.5(a) : Leading Sites in Broad Age Groups (65 years and above) – Males (2001-2003)**

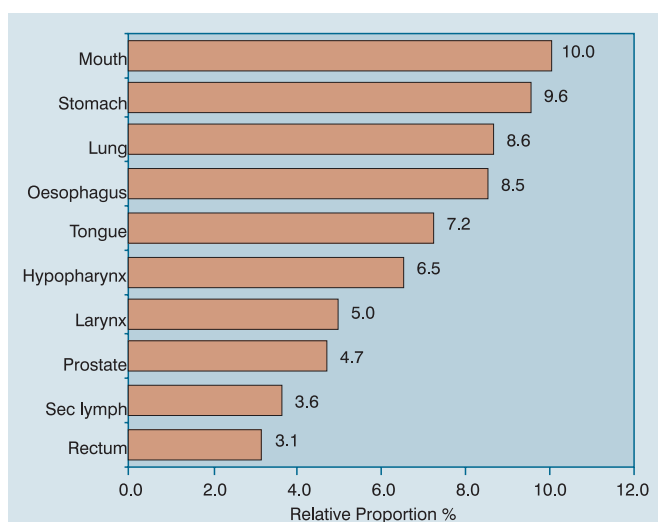
**Mumbai**



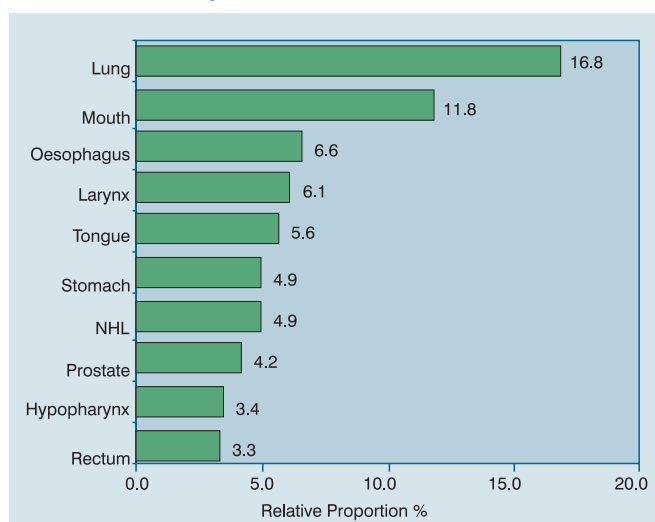
**Bangalore**



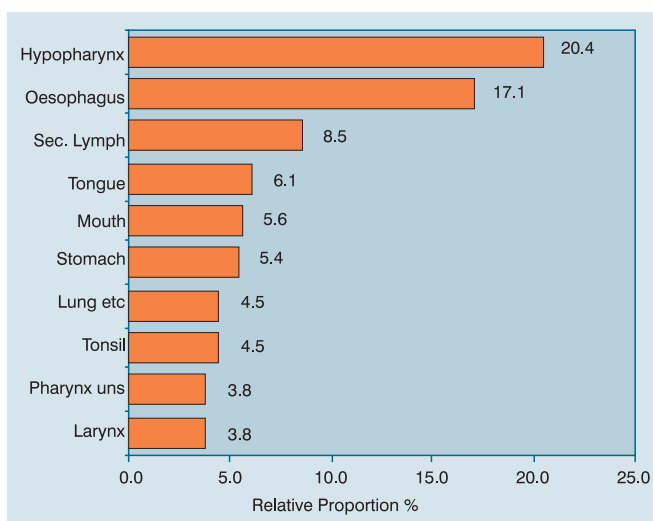
**Chennai**



**Thiruvananthapuram**



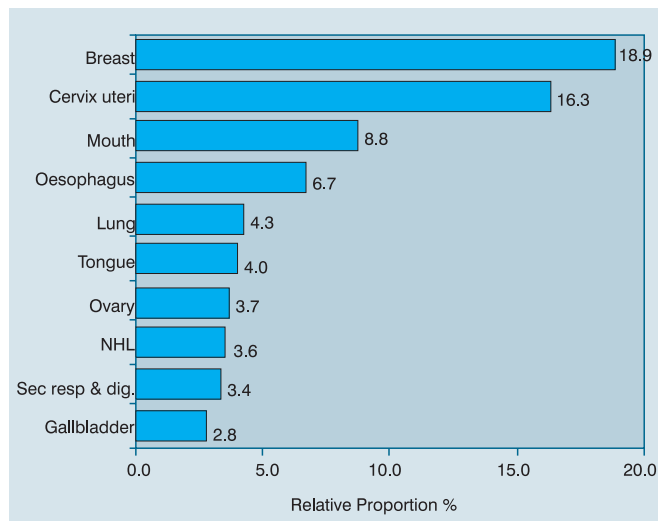
**Dibrugarh**



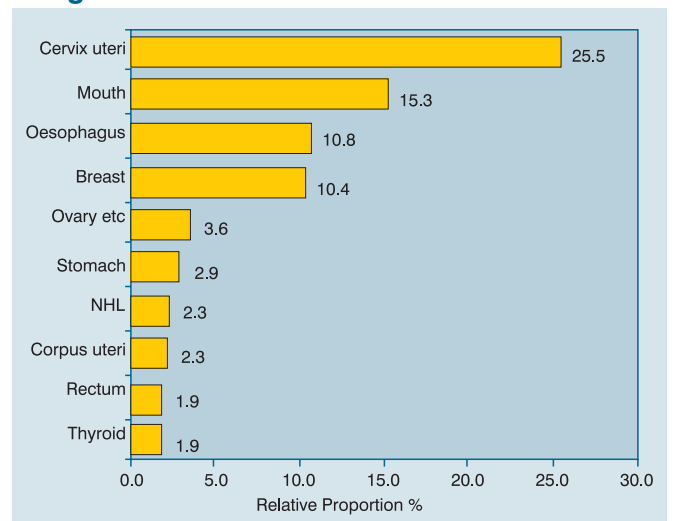


**Fig 1.5(b) : Leading Sites in Broad Age Groups (65 years and above) – Females (2001-2003)**

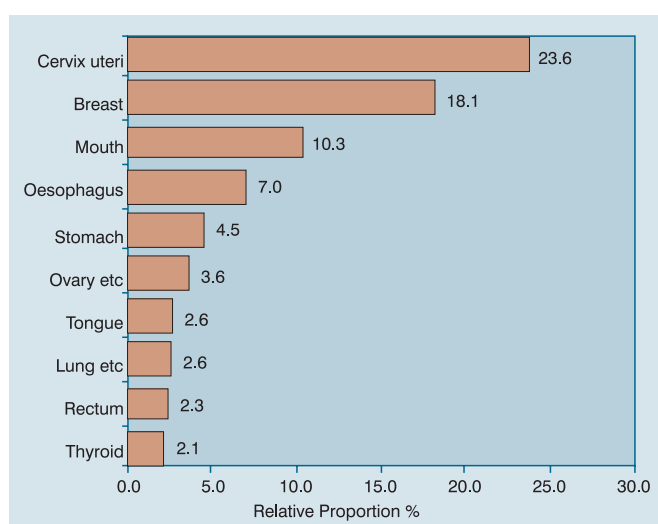
**Mumbai**



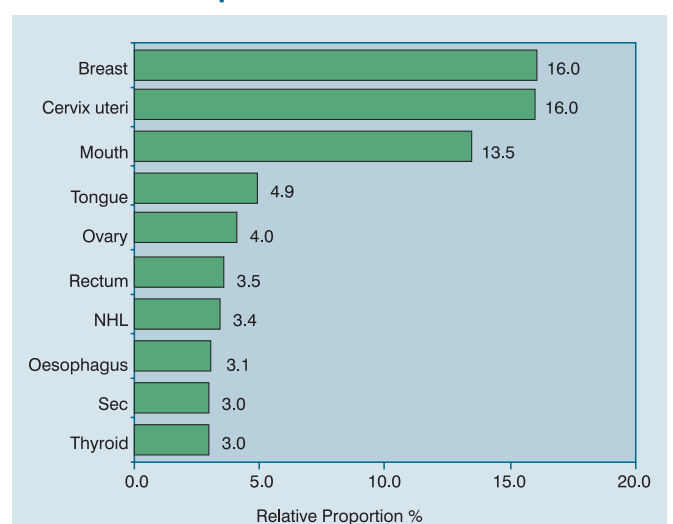
**Bangalore**



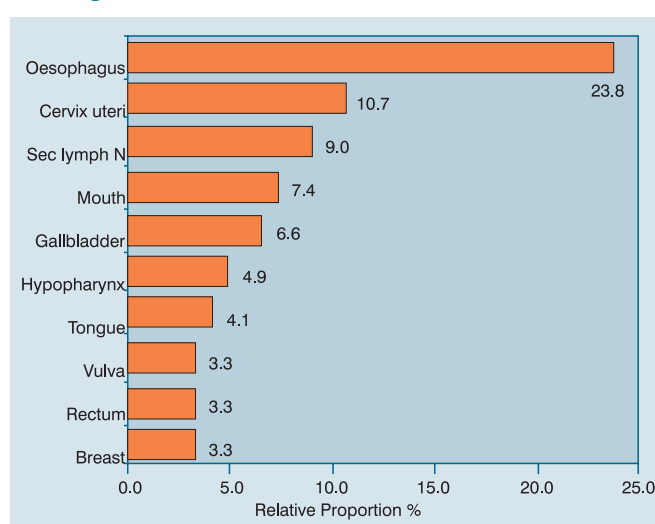
**Chennai**



**Thiruvananthapuram**



**Dibrugarh**



# Chapter 2

## CANCERS IN CHILDHOOD

In all registries, childhood cancer varied between 2.2-7.3% (Table 2.1) of all cancers. In boys, the proportion was lowest in Dibrugarh (about 2.2%) and highest in Bangalore (7.3%). In girls, it varied from 2.0% at Chennai to 3.9% 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 27.8% in boys and 30.9% in girls in Chennai to a high of 52.8% in boys in Dibrugarh and 45.7% in girls in Thiruvananthapuram. The relative proportion in the age group 5-9 years varied from 16.7% in boys in Dibrugarh to 34.9% in Bangalore. Correspondingly this percentage varied between 25.5% in Thiruvananthapuram to 35.2% in Bangalore. Similarly among age group 10-14 years, the relative percentage of boys (girls) varied between 28.9% (28.8%) in Thiruvananthapuram to 39.7% (43.1%) in Chennai.

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 (2001-03)**

Registry	Males			Females		
	All Cancers	#	%	All Cancers	#	%
Mumbai	27078	1687	6.2	21121	784	3.7
Bangalore	10799	783	7.3	12636	398	3.1
Chennai	10866	418	3.8	12417	246	2.0
Thi'puram	13099	633	4.8	11745	462	3.9
Dibrugarh	1602	36	2.2	910	26	2.9

**Table.2.2: Number (#) and Proportion (%) of Childhood Cancers by 5-year Age Group (2001-03)****Males**

Registry	Age Group (years)						All Childhood Cancers
	0-4		5-9		10-14		
	#	%	#	%	#	%	
<b>Males</b>							
<b>Mumbai</b>	494	29.3	566	33.6	627	37.2	1687
<b>Bangalore</b>	235	30.0	273	34.9	275	35.1	783
<b>Chennai</b>	116	27.8	136	32.5	166	39.7	418
<b>Thi'puram</b>	272	43.0	178	28.1	183	28.9	633
<b>Dibrugarh</b>	19	52.8	6	16.7	11	30.6	36
<b>Females</b>							
<b>Mumbai</b>	252	32.1	237	30.2	295	37.6	784
<b>Bangalore</b>	125	31.4	140	35.2	133	33.4	398
<b>Chennai</b>	76	30.9	64	26.0	106	43.1	246
<b>Thi'puram</b>	211	45.7	118	25.5	133	28.8	462
<b>Dibrugarh</b>	9	34.6	7	26.9	10	38.5	26
<b>Both Sexes</b>							
<b>Mumbai</b>	746	30.2	803	32.5	922	37.3	2471
<b>Bangalore</b>	360	30.5	413	35.0	408	34.5	1181
<b>Chennai</b>	192	28.9	200	30.1	272	41.0	664
<b>Thi'puram</b>	483	44.1	296	27.0	316	28.9	1095
<b>Dibrugarh</b>	28	45.2	13	21.0	21	33.9	62

**Table 2.3: Number (#) and relative proportion (%) of broad types of cancers in childhood (0-14 years ) (2001-03)****Males**

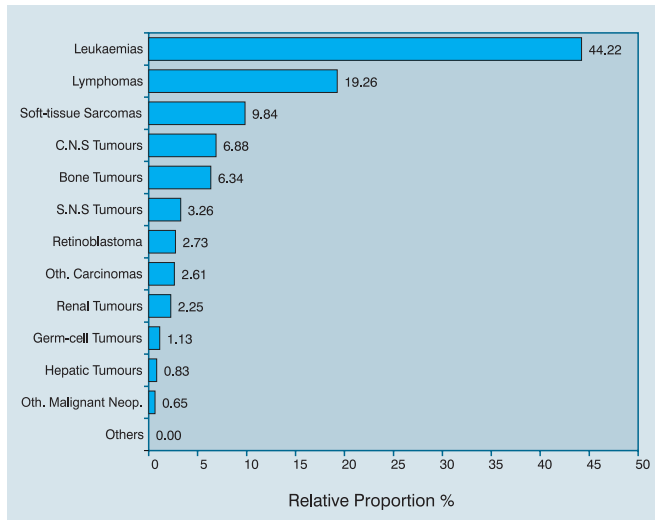
Broad Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I Leukaemias	746	44.2	351	44.8	173	41.4	285	45.0	7	19.4
II Lymphomas	325	19.3	143	18.3	89	21.3	82	13.0	4	11.1
III C.N.S Tumours	116	6.9	103	13.2	18	4.3	78	12.3	5	13.9
IV S.N.S Tumours	55	3.3	20	2.6	9	2.2	23	3.6	0	0.0
V Retinoblastoma	46	2.7	24	3.0	28	6.7	19	3.0	6	16.7
VI Renal Tumours	38	2.3	22	2.8	11	2.6	25	4.0	4	11.1
VII Hepatic Tumours	14	0.8	9	1.2	3	0.7	10	1.6	0	0.0
VIII Bone Tumours	107	6.3	39	5.0	40	9.6	38	6.0	2	5.6
IX Soft-tissue Sarcomas	166	9.8	18	2.3	24	5.7	39	6.2	5	13.9
X Germ-cell Tumours	19	1.1	8	1.0	6	1.4	5	0.8	1	2.8
XI Oth. Carcinomas	44	2.6	31	4.0	14	3.4	24	3.8	2	5.6
XII Oth. Malignant Neop.	11	0.7	15	1.9	3	0.7	5	0.8	0	0.0
XIII Others										
<b>All Types</b>	<b>1687</b>	<b>100.0</b>	<b>783</b>	<b>100.0</b>	<b>418</b>	<b>100.0</b>	<b>633</b>	<b>100.0</b>	<b>36</b>	<b>100.0</b>

**Females**

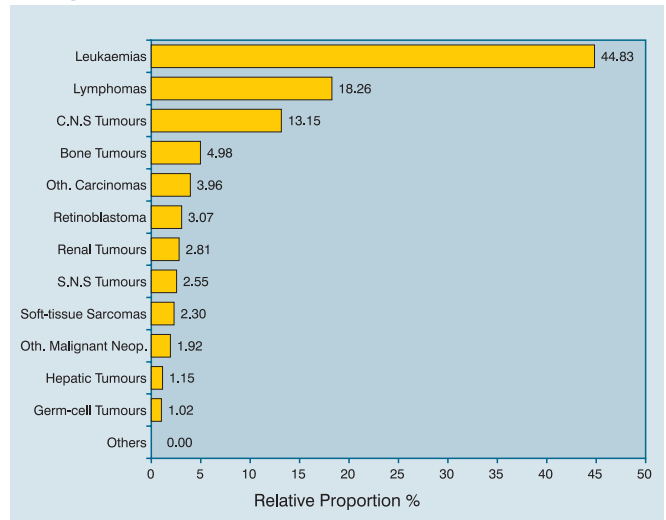
Broad Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I Leukaemias	318	40.6	159	40.0	107	43.5	210	45.5	3	11.5
II Lymphomas	70	8.9	33	8.3	20	8.1	24	5.2	0	0.0
III C.N.S Tumours	62	7.9	60	15.1	12	4.9	78	16.9	3	11.5
IV S.N.S Tumours	26	3.3	13	3.3	7	2.9	22	4.8	1	3.9
V Retinoblastoma	40	5.1	17	4.3	15	6.1	23	5.0	8	30.8
VI Renal Tumours	36	4.6	15	3.8	12	4.9	15	3.3	0	0.0
VII Hepatic Tumours	0	0.0	8	2.0	1	0.4	4	0.9	0	0.0
VIII Bone Tumours	76	9.7	27	6.8	25	10.2	24	5.2	3	11.5
IX Soft-tissue Sarcomas	93	11.9	14	3.5	16	6.5	19	4.1	3	11.5
X Germ-cell Tumours	31	4.0	20	5.0	12	4.9	17	3.7	3	11.5
XI Oth. Carcinomas	25	3.3	16	4.0	10	4.1	20	4.3	0	0.0
XII Oth. Malignant Neop.	7	0.9	16	4.0	9	3.7	6	1.3	2	7.7
XIII Others										
<b>All Types</b>	<b>784</b>	<b>100.0</b>	<b>398</b>	<b>100.0</b>	<b>246</b>	<b>100.0</b>	<b>462</b>	<b>100.0</b>	<b>26</b>	<b>100.0</b>

**Fig 2.1 (a) Proportion of Broad Types of Childhood Cancers (0-14 years) – Males (2001-2003)**

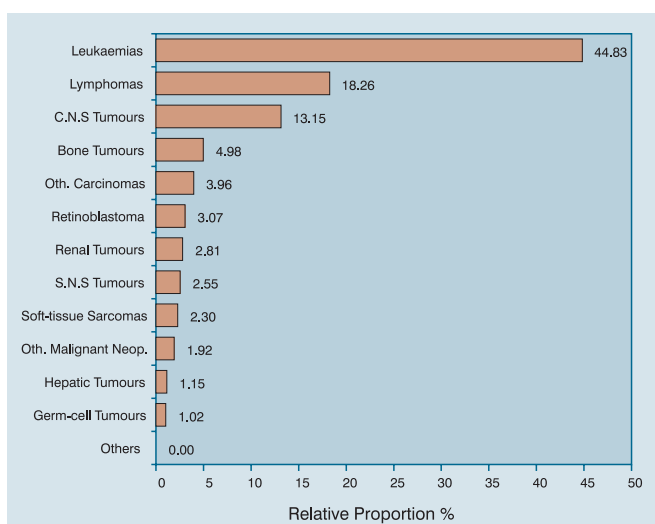
**Mumbai**



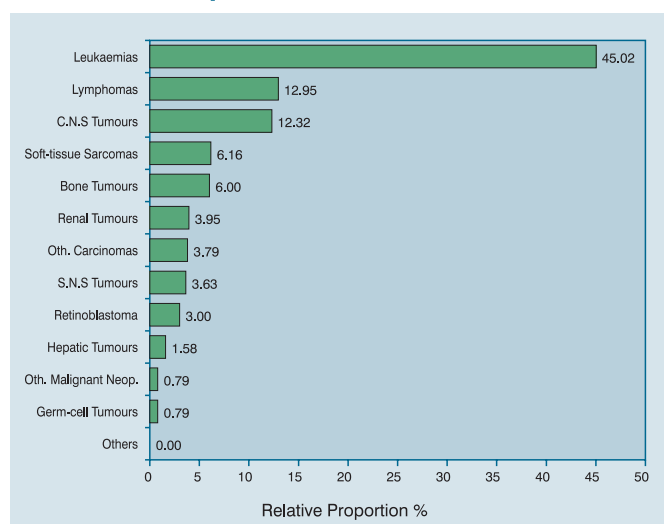
**Bangalore**



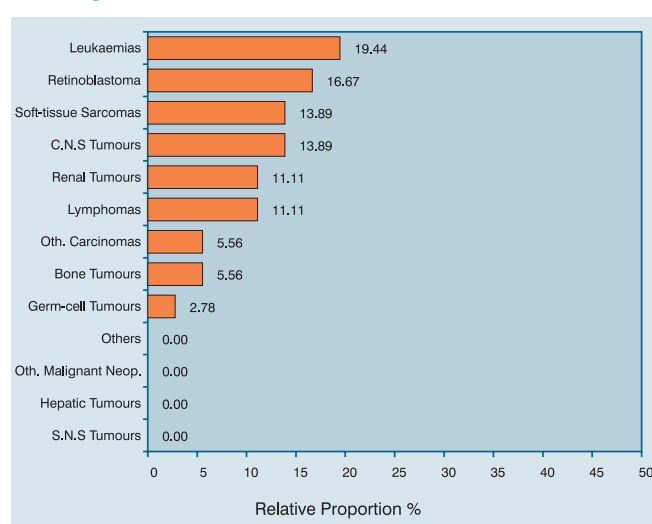
**Chennai**



**Thiruvananthapuram**

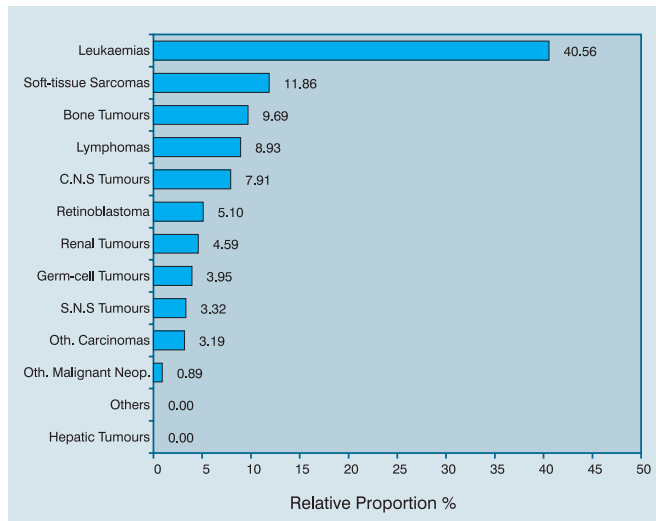


**Dibrugarh**

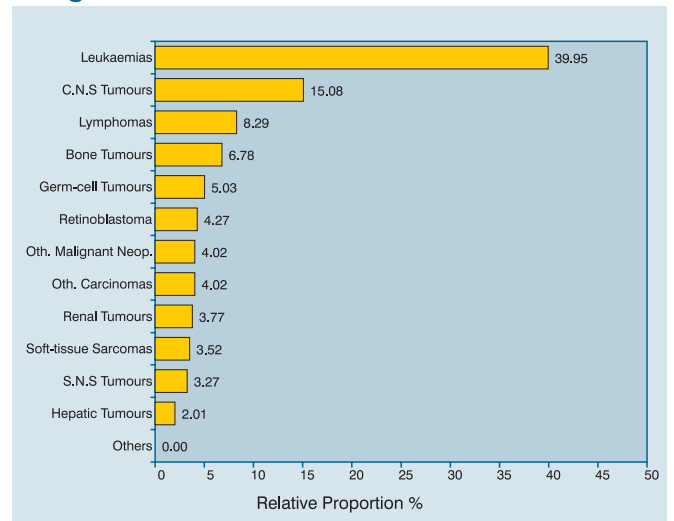


**Fig 2.1(b) : Proportion of Broad Types of Childhood Cancers (0-14 years) – Females (2001-2003)**

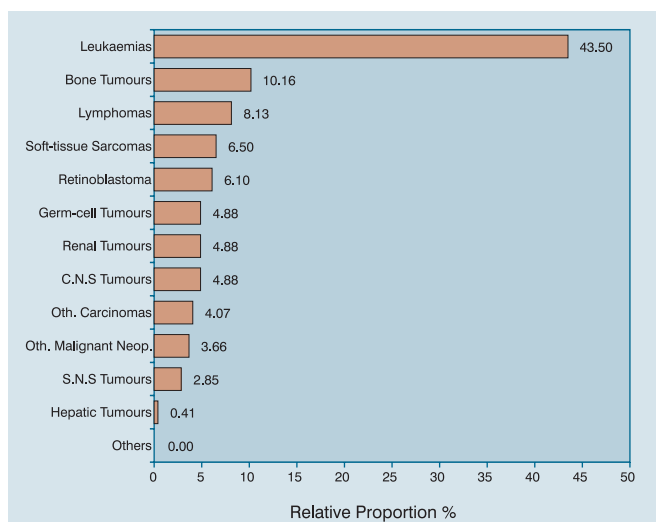
**Mumbai**



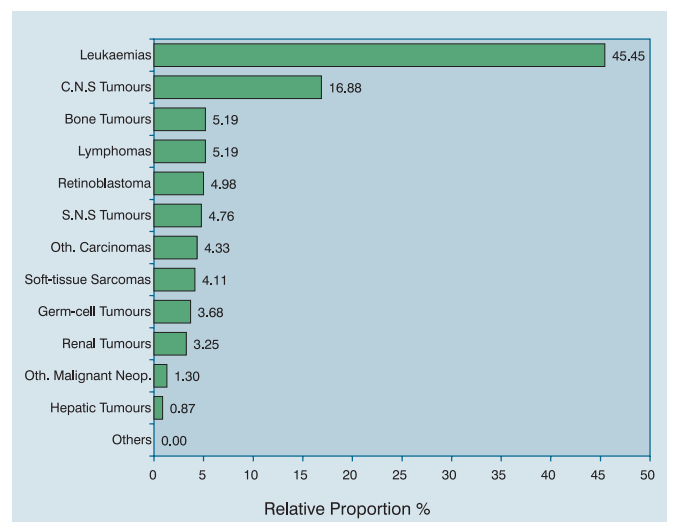
**Bangalore**



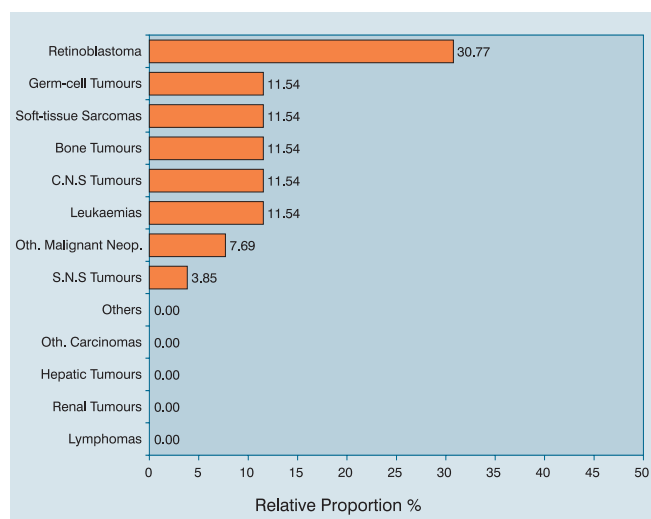
**Chennai**



**Thiruvananthapuram**



**Dibrugarh**



**Table 2.4(a) Number(#) and relative proportion(%) of specific types of cancer in childhood(0-14 years) (2001-03)****Males**

Specific Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I LEUKAEMIAS	746	44.2	351	44.8	173	41.4	285	45.0	7	19.4
(a) Lymphoid Leukaemia	461	27.3	260	33.2	121	29.0	219	34.6	5	13.9
(b) Acute non-lymphocytic leukaemia	148	8.8	75	9.6	31	7.4	46	7.3	0	0.0
(c) Chronic myeloid leukaemia	24	1.4	7	0.9	7	1.7	6	1.0	2	5.6
(d) Other specified leukaemias	1	0.1	0	0.0	1	0.2	0	0.0	0	0.0
(e) Unsp. leukaemias	112	6.6	9	1.2	13	3.1	14	2.2	0	0.0
II LYMPHOMAS & RETICULOENDOTHELIAL NEOP.	325	19.3	143	18.3	89	21.3	82	13.0	4	11.1
(a) Hodgkin's disease	178	10.6	80	10.2	51	12.2	33	5.2	0	0.0
(b) Non-Hodgkin lymphoma	113	6.7	48	6.2	33	7.9	40	6.3	4	11.1
(c) Burkitt's lymphoma	28	1.7	14	1.8	5	1.2	9	1.4	0	0.0
(d) Misc lymphoreticular neop.	6	0.4	1	0.1	0	0.0	0	0.0	0	0.0
(e) Unsp. lymphomas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
III C.N.S. & MISC. INTRACRANIAL & INTRASPINAL NEOP.	116	6.9	103	13.2	18	4.3	78	12.3	5	13.9
(a) Ependymoma	18	1.1	5	0.7	3	0.7	7	1.1	1	2.8
(b) Astrocytoma	33	2.0	27	3.5	6	1.4	21	3.3	1	2.8
(c) Primitive neuroectodermal tumors	39	2.3	21	2.7	5	1.2	20	3.2	1	2.8
(d) Other gliomas	15	0.9	14	1.8	2	0.5	3	0.5	0	0.0
(e) Other specified intracranial and intraspinal neop.	3	0.9	7	0.9	0	0.0	13	2.0	0	0.0
(f) Unsp. intracranial and intraspinal neop.	8	0.5	29	3.7	2	0.5	14	2.2	2	5.6
IV SYMPATHETIC NERVOUS SYSTEM TUMOURS	55	3.3	20	2.6	9	2.2	23	3.6	0	0.0
(a) Neuroblastoma and ganglioneuroblastoma	50	3.0	20	2.6	8	1.9	22	3.5	0	0.0
(b) Other SNS tumors	5	0.3	0	0.0	1	0.2	1	0.2	0	0.0
V RETINOBLASTOMA	46	2.7	24	3.1	28	6.7	19	3.0	6	16.7
VI RENAL TUMOURS	38	2.3	22	2.8	11	2.6	25	4.0	4	11.1
(a) Wilms's tumor, rhabdoid and clear cell sarcoma	36	2.1	17	2.2	10	2.4	23	3.6	3	8.3
(b) Renal carcinoma	2	0.1	0	0.0	1	0.2	0	0.0	0	0.0
(c) Unsp. malignant renal tumors	0	0.0	5	0.6	0	0.0	2	0.3	1	2.8
VII HEPATIC TUMOURS	14	0.8	9	1.2	3	0.7	10	1.6	0	0.0
(a) Hepatoblastoma	13	0.8	4	0.5	2	0.5	8	1.3	0	0.0
(b) Hepatic carcinoma	0	0.0	2	0.3	1	0.2	0	0.0	0	0.0
(c) Unsp. malignant hepatic tumours	1	0.1	3	0.4	0	0.0	2	0.3	0	0.0
VIII MALIGNANT BONE TUMOURS	107	6.3	39	5.0	40	9.6	38	6.0	2	5.6
(a) Osteosarcoma	74	4.4	17	2.2	26	6.2	26	4.1	1	2.8
(b) Chondrosarcoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(c) Ewing's sarcoma	33	2.0	16	2.0	13	3.1	11	1.7	0	0.0
(d) Other specified malignant bone tumours	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0
(e) Unsp. malignant bone tumours	0	0.0	6	0.8	0	0.0	1	0.2	1	2.8
IX SOFT-TISSUE(S-T) SARCOMAS(S)	166	9.8	18	2.3	24	5.7	39	6.2	5	13.9
(a) Rhabdomyosarcoma and embryonal sarcoma	57	3.4	12	1.5	17	4.1	23	3.6	3	8.3
(b) Fibros.neurofibros. and other fibromatous neop.	15	0.9	0	0.0	0	0.0	1	0.2	1	2.8
(c) Kaposi's sarcoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(d) Other specified soft tissue sarcomas	59	3.5	0	0.0	2	0.5	2	0.3	1	2.8
(e) Unsp. soft tissue sarcomas	35	2.1	6	0.8	5	1.2	13	2.0	0	0.0
X GERM-CELL TROPHOBLASTIC & OTH. GONADAL NEOP.	19	1.1	8	1.1	6	1.4	5	0.8	1	2.8
(a) Intracranial and intraspinal gc tumours	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(b) Other and unsp. non-gonadal gc tumours	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(c) Gonadal gc tumours	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(d) Gonadal carcinomas	3	0.2	2	0.3	0	0.0	0	0.0	0	0.0
(e) Other and unsp. gonadal tumours	16	1.0	6	0.8	6	1.4	5	0.8	1	2.8
XI CARCINOMA & OTH MALIGNANT EPITHELIAL NEOP.	44	2.6	31	4.0	14	3.4	24	3.8	2	5.6
(b) Adrenocortical carcinoma	11	0.7	3	0.4	2	0.5	7	1.1	0	0.0
(a) Thyroid carcinoma	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
(c) Nasopharyngeal carcinoma	13	0.8	5	0.6	8	1.9	5	0.8	0	0.0
(d) Malignant melanoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(e) Skin carcinoma	10	0.6	11	1.4	4	1.0	4	0.6	0	0.0
(f) Other and unsp. carcinomas	9	0.5	12	1.5	0	0.0	8	1.3	2	5.6
XII OTHER & UNSP. MALIGNANT NEOPLASMS	11	0.7	15	1.9	3	0.7	5	0.8	0	0.0
(a) Other specified malignant tumours	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
(b) Other unsp. malignant tumours	11	0.7	14	1.8	3	0.7	5	0.8	0	0.0
XIII. OTHERS (Not Classified)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Types</b>	<b>1687</b>	<b>100.0</b>	<b>783</b>	<b>100.0</b>	<b>418</b>	<b>100.0</b>	<b>633</b>	<b>100.0</b>	<b>36</b>	<b>100.0</b>

**Table 2.4(b) Number(#) and relative proportion(%) of specific types of cancer in childhood(0-14 years) (2001-03)****Females**

Specific Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I LEUKAEMIAS	318	40.6	159	40.0	107	43.5	210	45.5	3	11.5
(a) Lymphoid Leukaemia	193	24.6	109	27.4	72	29.3	151	32.7	1	3.9
(b) Acute non-lymphocytic leukaemia	60	7.7	40	10.0	26	10.6	39	8.4	1	3.9
(c) Chronic myeloid leukaemia	19	2.4	4	1.0	4	1.6	10	2.2	1	3.9
(d) Other specified leukaemias	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(e) Unsp. leukaemias	46	5.9	6	1.5	5	2.0	10	2.2	0	0.0
II LYMPHOMAS & RETICULOENDOTHELIAL NPLMS	70	8.9	33	8.3	20	8.1	24	5.2	0	0.0
(a) Hodgkin's disease	36	4.6	14	3.5	7	2.9	13	2.8	0	0.0
(b) Non-Hodgkin lymphoma	25	3.2	14	3.5	10	4.0	11	2.4	0	0.0
(c) Burkitt's lymphoma	6	0.8	5	1.3	3	1.2	0	0.0	0	0.0
(d) Misc lymphoreticular neop.	3	0.4	0	0.0	0	0.0	0	0.0	0	0.0
(e) Unsp. lymphomas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
III C.N.S. & MISC. INTRACRANIAL & INTRASPINAL NEOP.	62	7.9	60	15.1	12	4.9	78	16.9	3	11.5
(a) Ependymoma	6	0.8	2	0.5	0	0.0	6	1.3	0	0.0
(b) Astrocytoma	18	2.3	15	3.8	5	2.0	17	3.7	1	3.9
(c) Primitive neuroectodermal tumors	16	2.0	16	4.0	1	0.4	19	4.1	2	7.7
(d) Other gliomas	12	1.5	5	1.3	5	2.0	8	1.7	0	0.0
(e) Other specified intracranial and intraspinal neop.	4	0.5	6	1.5	0	0.0	19	4.1	0	0.0
(f) Unsp. intracranial and intraspinal neop.	6	0.8	16	4.0	1	0.4	9	2.0	0	0.0
IV SYMPATHETIC NERVOUS SYSTEM TUMOURS	26	3.3	13	3.3	7	2.9	22	4.8	1	3.9
(a) Neuroblastoma and ganglioneuroblastoma	23	2.9	13	3.3	7	2.9	19	4.1	1	3.9
(b) Other SNS tumors	3	0.4	0	0.0	0	0.0	3	0.7	0	0.0
V RETINOBLASTOMA	40	5.1	17	4.3	15	6.1	23	5.0	8	30.8
VI RENAL TUMOURS	36	4.6	15	3.7	12	4.9	15	3.3	0	0.0
(a) Wilms's tumor, rhabdoid and clear cell sarcoma	36	4.6	13	3.3	12	4.9	14	3.0	0	0.0
(b) Renal carcinoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(c) Unsp. malignant renal tumors	0	0.0	2	0.5	0	0.0	1	0.2	0	0.0
VII HEPATIC TUMOURS	0	0.0	8	2.0	1	0.4	4	0.9	0	0.0
(a) Hepatoblastoma	0	0.0	5	1.3	1	0.4	3	0.7	0	0.0
(b) Hepatic carcinoma	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0
(c) Unsp. malignant hepatic tumours	0	0.0	2	0.5	0	0.0	1	0.2	0	0.0
VIII MALIGNANT BONE TUMOURS	76	9.7	27	6.8	25	10.2	24	5.2	3	11.5
(a) Osteosarcoma	53	6.8	12	3.0	14	5.7	11	2.4	0	0.0
(b) Chondrosarcoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(c) Ewing's sarcoma	23	2.9	10	2.5	9	3.7	13	2.8	3	11.5
(d) Other specified malignant bone tumours	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0
(e) Unsp. malignant bone tumours	0	0.0	4	1.0	2	0.8	0	0.0	0	0.0
IX SOFT-TISSUE(S-T) SARCOMAS(S)	93	11.9	14	3.5	16	6.5	19	4.1	3	11.5
(a) Rhabdomyos. and embryonal sarcoma	21	2.7	5	1.3	5	2.0	6	1.3	1	3.9
(b) Fibros.neurofibros. and oth fibromatous neop.	4	0.5	1	0.3	1	0.4	0	0.0	0	0.0
(c) Kaposi's sarcoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(d) Other specified soft tissue sarcomas	42	5.4	0	0.0	2	0.8	2	0.4	1	3.9
(e) Unsp. soft tissue sarcomas	26	3.3	8	2.0	8	3.3	11	2.4	1	3.9
X GERM-CELL TROPHOBLASTIC & OTH. GONADAL NEOP.	31	4.0	20	5.0	12	4.9	17	3.7	3	11.5
(a) Intracranial and intraspinal gc tumours	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(b) Other and unsp. non-gonadal gc tumours	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(c) Gonadal gc tumours	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(d) Gonadal carcinomas	1	0.1	1	0.3	4	1.6	1	0.2	0	0.0
(e) Other and unsp. gonadal tumours	30	3.8	19	4.8	8	3.3	16	3.5	3	11.5
XI CARCINOMA & OTH MALIGNANT EPITHELIAL NEOP.	25	3.2	16	4.0	10	4.0	20	4.3	0	0.0
(b) Adrenocortical carcinoma	7	0.9	3	0.8	2	0.8	11	2.4	0	0.0
(a) Thyroid carcinoma	0	0.0	0	0.0	1	0.4	0	0.0	0	0.0
(c) Nasopharyngeal carcinoma	4	0.5	2	0.5	2	0.8	0	0.0	0	0.0
(d) Malignant melanoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
(e) Skin carcinoma	8	1.0	7	1.8	2	0.8	4	0.9	0	0.0
(f) Other and unsp. carcinomas	6	0.8	4	1.0	3	1.2	5	1.1	0	0.0
XII OTHER & UNSP. MALIGNANT NEOPLASMS	7	0.9	16	4.0	9	3.7	6	1.3	2	7.7
(a) Other specified malignant tumours	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0
(b) Other unsp. malignant tumours	7	0.9	15	3.8	9	3.7	6	1.3	2	7.7
XIII. OTHERS (Not Classified)										
<b>All Types</b>	<b>784</b>	<b>100.0</b>	<b>398</b>	<b>100.0</b>	<b>246</b>	<b>100.0</b>	<b>462</b>	<b>100.0</b>	<b>26</b>	<b>100.0</b>



# Chapter 3

## TOBACCO RELATED CANCERS

A list of sites of cancer (along with 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

**Table 3.1: Sites of cancer included in TRCs alongwith corresponding ICD codes**

Site	ICD-10 Code
Lip	C00
Tongue	C01-C02
Mouth	C03-C06
Pharynx	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. (2001-2003)**

Registry	Males			Females		
	All sites	#	%	All sites	#	%
Mumbai	27078	12165	44.9	21121	3377	16.0
Bangalore	10799	4747	44.0	12636	2774	22.0
Chennai	10866	4583	42.2	12417	1960	15.8
Thi'puram	13099	6011	45.9	11745	1634	13.9
Dibrugarh	1602	950	59.3	910	297	32.6
<b>All Registries</b>	<b>63444</b>	<b>28456</b>	<b>44.9</b>	<b>58829</b>	<b>10042</b>	<b>17.1</b>

the 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 (59.3%) and in females (32.6%). In the other registries, it varied from 42.2 to 45.9% of all cancers in males and from 13.9 to 22.0% in females.

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

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

*Mumbai:* Mouth(27.0%), lung(16.8%) and tongue (15.2%) were the main sites that contributed to overall TRCs.

*Bangalore:* Hypopharynx(21.2%), Oesophagus(20.6%) and lung(15%). were the three leading sites among TRCs

*Chennai:* Mouth(20.0%) was the leading contributor to TRCs followed by lung(16.5%) and oesophagus(16.1%).

*Thiruvananthapuram:* Cancer of lung accounted for 29.5% of TRCs followed by Mouth(20.5%) and tongue(12.9%).

*Dibrugarh:* Cancer of the hypopharynx constituted 28.1% of TRCs followed by oesophagus(27.5%) and Mouth(11.2%).

#### **Females**

*Mumbai:* Mouth(31.2%), oesophagus(20.9%) and tongue(16.3%) were the leading sites among TRCs.

*Bangalore:* Mouth(47.7%) contributed almost half of the TRCs. Another important site was oesophagus(28.1%).

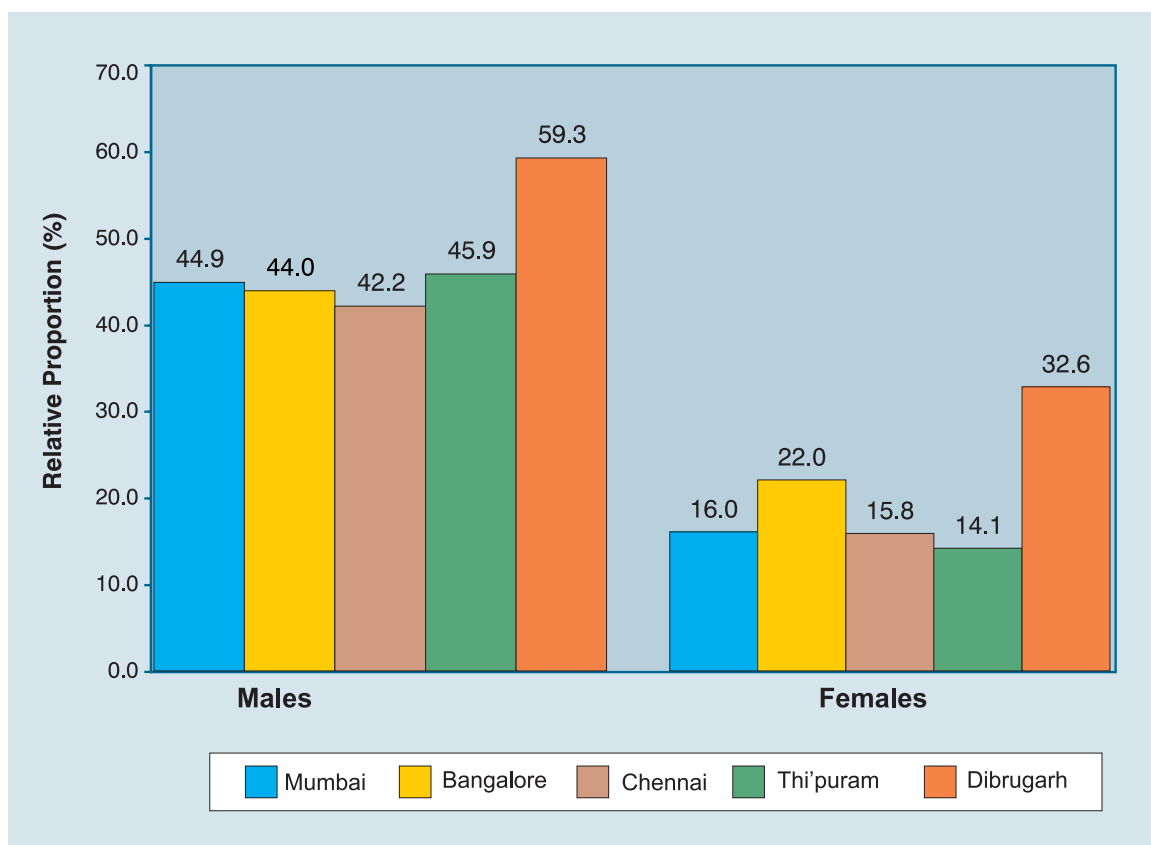
*Chennai:* Mouth(36.0%) accounted for most of TRCs followed by oesophagus(22.5%) and hypopharynx(12.6%).

*Thiruvananthapuram:* Like in Chennai, in Thiruvananthapuram also Mouth(42.6%) accounted for most of TRCs followed by tongue(19.8%) and lung(15.1%).

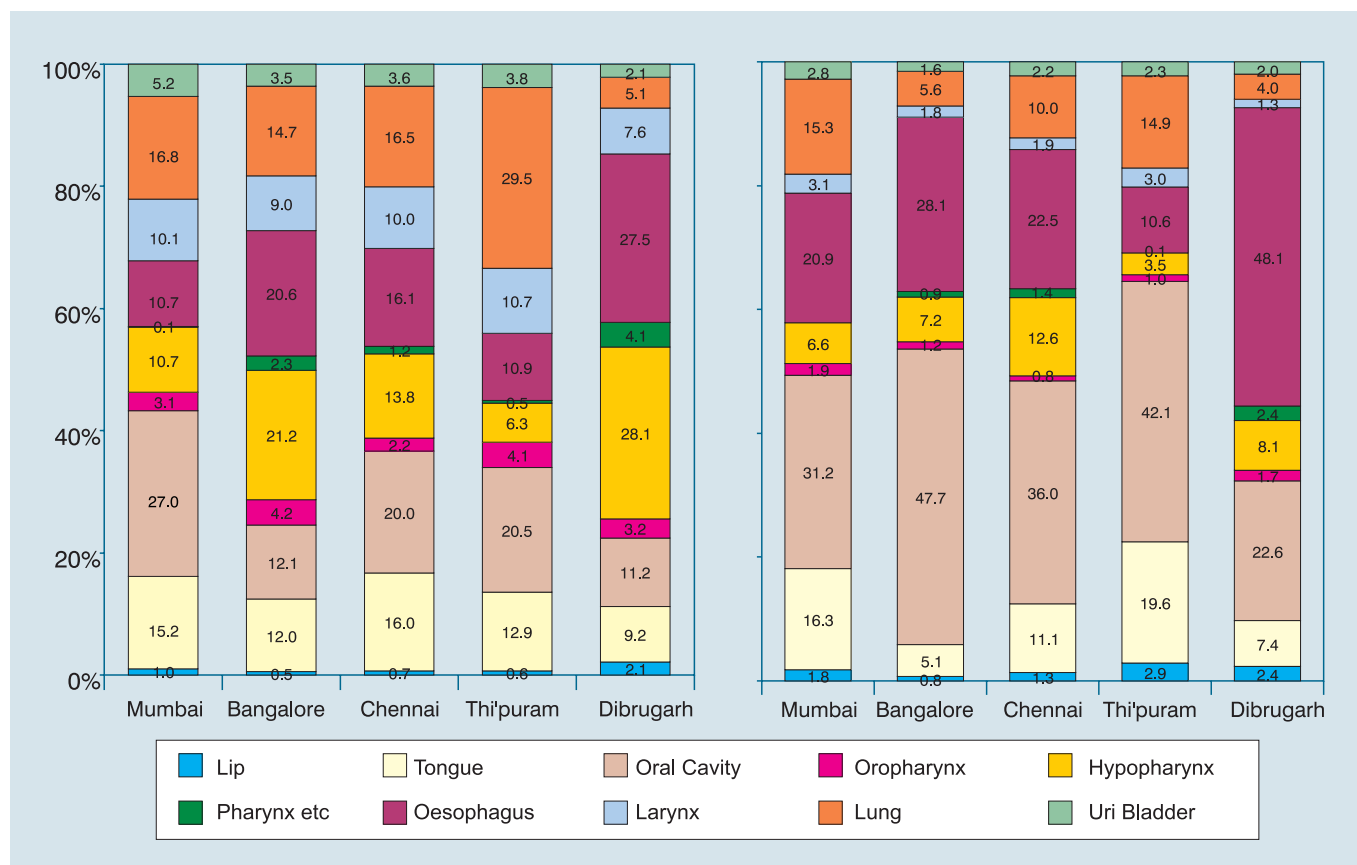
*Dibrugarh:* Oesophagus(48.1%) was the leading site in TRCs followed by Mouth(22.6%) and hypopharynx(8.1%).

Table 3.4 shows the number and proportion of the TRCs by five year age groups. Among males the higher proportion of TRCs was seen in 60-64 year age group in all registries except Mumbai where higher values were seen in 50-54 year age group. In females the higher proportion of TRCs was seen in age groups above 60 years except Dibrugarh where the age group 45-49 years had higher values.

**Fig 3.1: Proportion (%) of Tobacco Related Cancers Relative to All sites - 2001-03**



**Fig. 3.2: Stack (100%) diagram showing Proportion of Specific Tobacco Related Sites Relative to All Tobacco Related Cancers (2001-03)**



**Table 3.3: Number & Relative proportion of Specific sites of Cancer among Tobacco Related Cancers (TRC) -(2001-2003)****Males**

Sites of Cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	124	1.0	24	0.5	31	0.7	38	0.6	20	2.1
Tongue	1845	15.2	569	12.0	732	16.0	775	12.9	87	9.2
Mouth	3289	27.0	573	12.1	916	20.0	1230	20.5	106	11.2
Oropharynx	374	3.1	198	4.2	99	2.2	249	4.1	30	3.2
Hypopharynx	1301	10.7	1004	21.2	633	13.8	380	6.3	267	28.1
Pharynx	12	0.1	110	2.3	53	1.2	33	0.5	39	4.1
Oesophagus	1302	10.7	976	20.6	739	16.1	656	10.9	261	27.5
Larynx	1234	10.1	428	9.0	460	10.0	643	10.7	72	7.6
Lung etc	2048	16.8	697	14.7	755	16.5	1776	29.5	48	5.1
Uri.Bladder	636	5.2	168	3.5	165	3.6	231	3.8	20	2.1
<b>TRC</b>	<b>12165</b>	<b>100.0</b>	<b>4747</b>	<b>100.0</b>	<b>4583</b>	<b>100.0</b>	<b>6011</b>	<b>100.0</b>	<b>950</b>	<b>100.0</b>

**Females**

Sites of Cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	62	1.8	21	0.8	26	1.3	48	2.9	7	2.4
Tongue	550	16.3	142	5.1	218	11.1	324	19.8	22	7.4
Mouth	1054	31.2	1323	47.7	706	36.0	696	42.6	67	22.6
Oropharynx	65	1.9	34	1.2	16	0.8	17	1.0	5	1.7
Hypopharynx	222	6.6	201	7.2	247	12.6	58	3.5	24	8.1
Pharynx	0	0.0	25	0.9	28	1.4	1	0.1	7	2.4
Oesophagus	707	20.9	779	28.1	441	22.5	176	10.8	143	48.1
Larynx	105	3.1	51	1.8	38	1.9	30	1.8	4	1.3
Lung etc	518	15.3	155	5.6	196	10.0	246	15.1	12	4.0
Uri.Bladder	94	2.8	43	1.6	44	2.2	38	2.3	6	2.0
<b>TRC</b>	<b>3377</b>	<b>100.0</b>	<b>2774</b>	<b>100.0</b>	<b>1960</b>	<b>100.0</b>	<b>1634</b>	<b>100.0</b>	<b>297</b>	<b>100.0</b>

Among males the mean ( $\pm$ SD) age of TRCs varied between  $55.1 \pm 11.93$  in Mumbai to  $59.7 \pm 10.85$  in Thiruvananthapuram. Similarly in females mean ( $\pm$ SD) age of TRCs varied between  $53.2 \pm 11.86$  in Dibrugarh to  $59.7 \pm 12.65$  in Thiruvananthapuram.

**Table 3.4 : Number & Relative Proportion of Tobacco Related Cancer by five-year age groups with Standard Deviation (SD) (2001-2003)****Males**

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
00-14	12	0.1	10	0.2	0	0.0	4	0.1	1	0.1
15-19	12	0.1	4	0.1	4	0.1	4	0.1	0	0.0
20-24	43	0.4	10	0.2	16	0.3	7	0.1	0	0.0
25-29	139	1.1	35	0.7	43	0.9	21	0.3	8	0.8
30-34	341	2.8	69	1.5	97	2.1	50	0.8	18	1.9
35-39	672	5.5	139	2.9	172	3.8	130	2.2	40	4.2
40-44	1142	9.4	240	5.1	309	6.7	282	4.7	59	6.2
45-49	1501	12.3	454	9.6	494	10.8	580	9.6	105	11.1
50-54	1884	15.5	653	13.8	664	14.5	809	13.5	122	12.8
55-59	1776	14.6	744	15.7	745	16.3	942	15.7	149	15.7
60-64	1708	14.0	811	17.1	768	16.8	1021	17.0	150	15.8
65-69	1521	12.5	720	15.2	579	12.6	973	16.2	127	13.4
70-74	863	7.1	495	10.4	412	9.0	659	11.0	97	10.2
75+	551	4.5	363	7.6	280	6.1	529	8.8	74	7.8
<b>All Ages</b>	<b>12165</b>	<b>100.0</b>	<b>4747</b>	<b>100.0</b>	<b>4583</b>	<b>100.0</b>	<b>6011</b>	<b>100.0</b>	<b>950</b>	<b>100.0</b>

<b>Mean</b>	55.1	58.7	57.1	59.7	57.9
<b>SD</b>	11.93	11.48	11.55	10.85	11.74

**Females**

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
00-14	6	0.2	3	0.1	1	0.1	5	0.3	0	0.0
15-19	7	0.2	3	0.1	3	0.2	6	0.4	0	0.0
20-24	23	0.7	11	0.4	11	0.6	11	0.7	2	0.7
25-29	49	1.5	34	1.2	40	2.0	14	0.9	4	1.3
30-34	104	3.1	55	2.0	57	2.9	23	1.4	10	3.4
35-39	216	6.4	150	5.4	105	5.4	51	3.1	25	8.4
40-44	317	9.4	214	7.7	152	7.8	74	4.5	28	9.4
45-49	476	14.1	368	13.3	235	12.0	147	9.0	49	16.5
50-54	473	14.0	451	16.3	317	16.2	162	9.9	43	14.5
55-59	435	12.9	375	13.5	264	13.5	237	14.5	40	13.5
60-64	479	14.2	453	16.3	323	16.5	244	14.9	41	13.8
65-69	396	11.7	287	10.3	231	11.8	281	17.2	28	9.4
70-74	235	7.0	215	7.8	137	7.0	175	10.7	18	6.1
75+	161	4.8	155	5.6	84	4.3	204	12.5	9	3.0
<b>All Ages</b>	<b>3377</b>	<b>100.0</b>	<b>2774</b>	<b>100.0</b>	<b>1960</b>	<b>100.0</b>	<b>1634</b>	<b>100.0</b>	<b>297</b>	<b>100.0</b>

<b>Mean</b>	54.5	55.7	55.0	59.7	53.2
<b>SD</b>	12.50	11.89	12.12	12.65	11.86

# 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(II) diagrams in Figure 4.1. The proportion of microscopic confirmation was about 90% and above in both sexes except in Chennai where it was 82.2% in males and 88.9% in females. Correspondingly, the proportion of cases based on clinical diagnosis were 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. The percentage of diagnoses based on cytology was highest in Bangalore with 23.7% in males and 14.7% in females respectively. Dibrugarh (14.9%) males had the highest proportion of cases based on secondary histology.

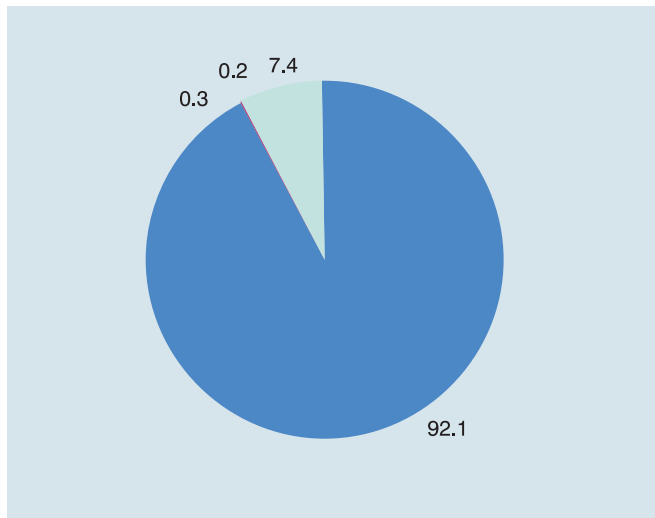
**Table 4.1 : Number(#) & Relative Proportion(%) of cancers based on different Methods of Diagnosis**

Registry	Microscopic		All imaging techniques		Clinical		Others		Total	
	#	%	#	%	#	%	#	%	#	%
<b>Males</b>										
Mumbai	24941	92.1	77	0.3	46	0.2	2014	7.4	27078	100.0
Bangalore	10246	94.9	152	1.4	251	2.3	150	1.4	10799	100.0
Chennai	8933	82.2	799	7.4	1013	9.3	121	1.1	10866	100.0
Thi'puram	12256	93.6	573	4.4	183	1.4	87	0.7	13099	100.0
Dibrugarh	1496	93.4	65	4.1	17	1.1	24	1.5	1602	100.0
<b>Females</b>										
Mumbai	19314	91.4	37	0.2	29	0.1	1741	8.2	21121	100.0
Bangalore	12109	95.8	96	0.8	283	2.2	148	1.2	12636	100.0
Chennai	11036	88.9	360	2.9	961	7.7	60	0.5	12417	100.0
Thi'puram	11354	96.7	188	1.6	173	1.5	30	0.3	11745	100.0
Dibrugarh	816	89.7	70	7.7	6	0.7	18	2.0	910	100.0

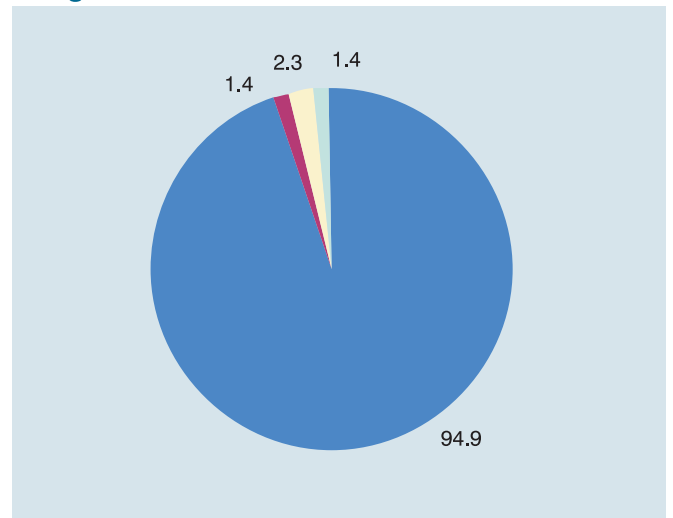
**Fig.4.1(a):Pie diagram showing Proportion(%) of Patients according to Method of Diagnosis (2001-2003)**

**Males**

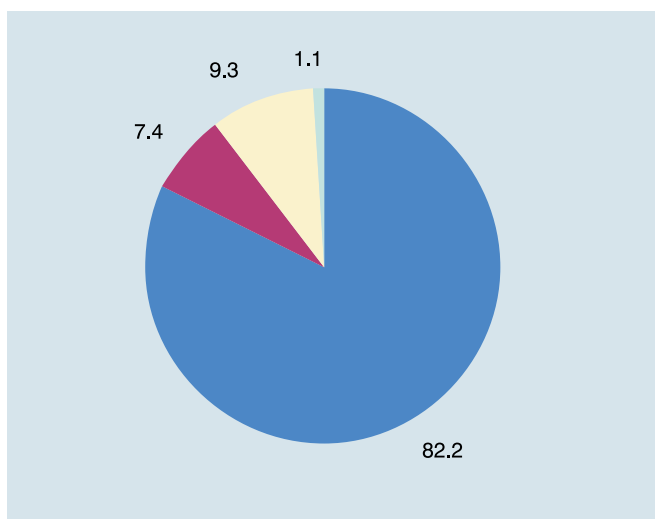
**Mumbai**



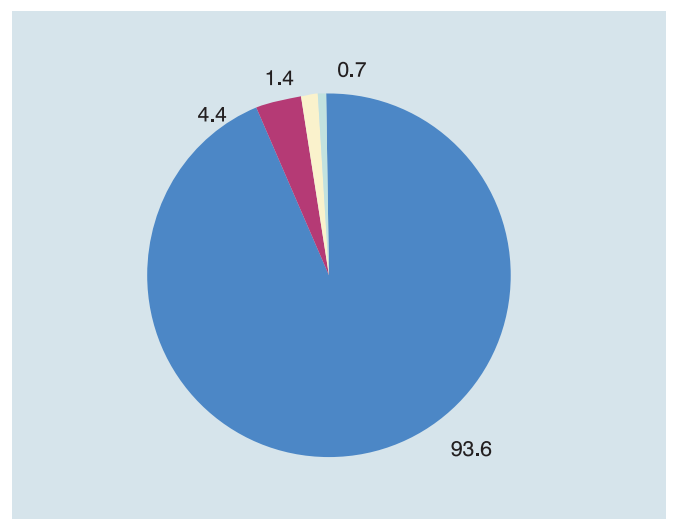
**Bangalore**



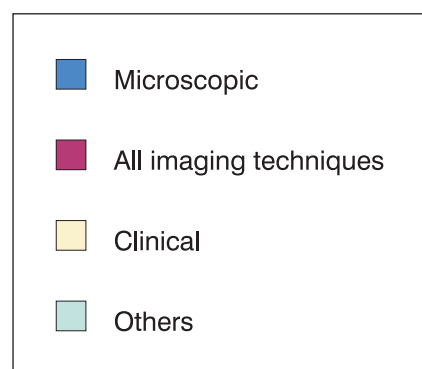
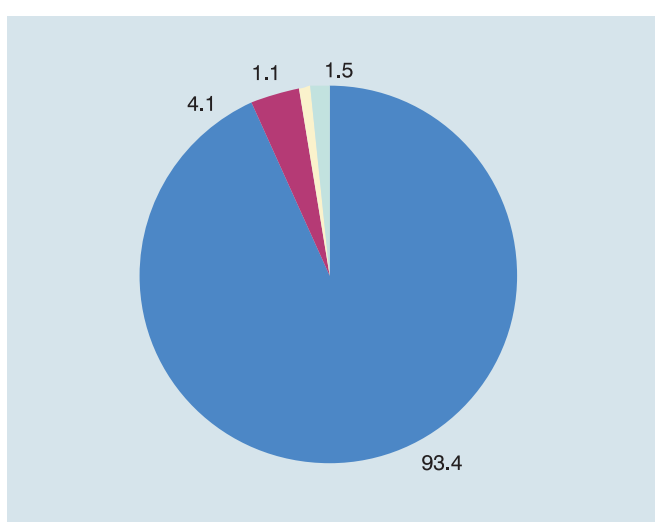
**Chennai**



**Thiruvananthapuram**



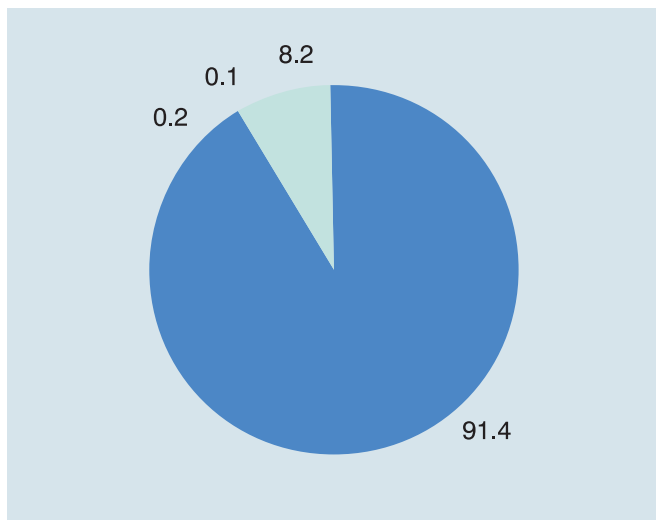
**Dibrugarh**



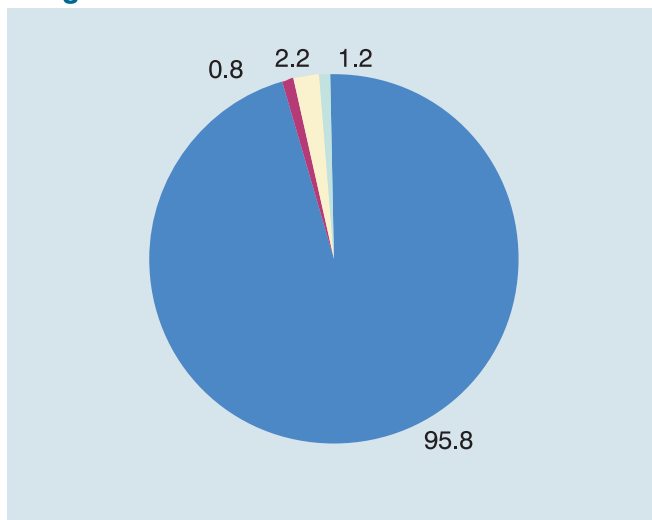
**Fig.4.1(b):Pie diagram showing Proportion(%) of Patients according to Method of Diagnosis (2001-2003)**

**Females**

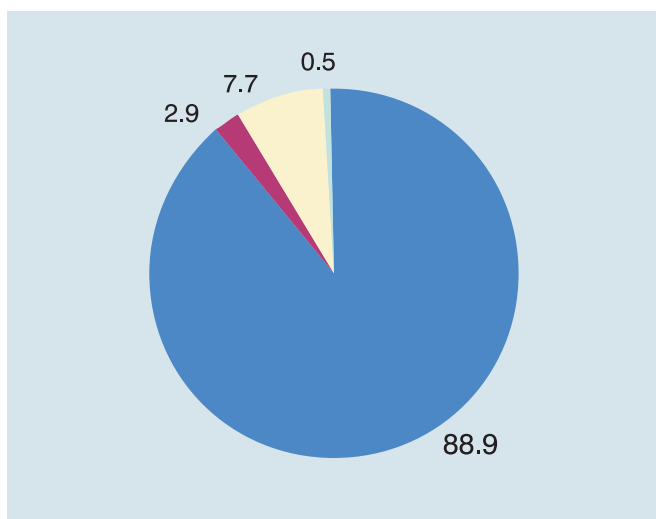
**Mumbai**



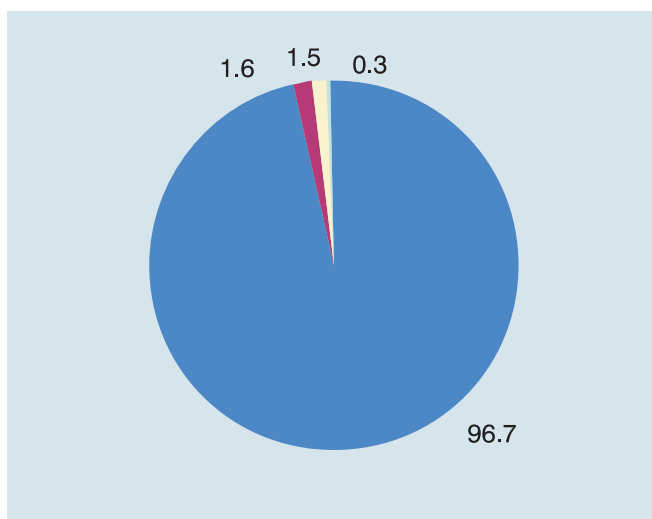
**Bangalore**



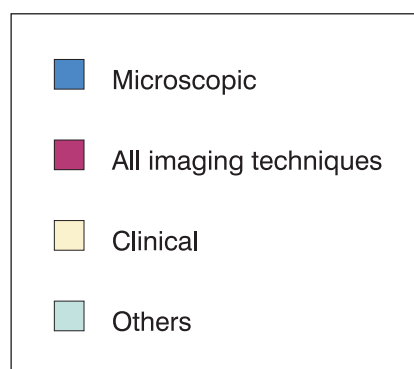
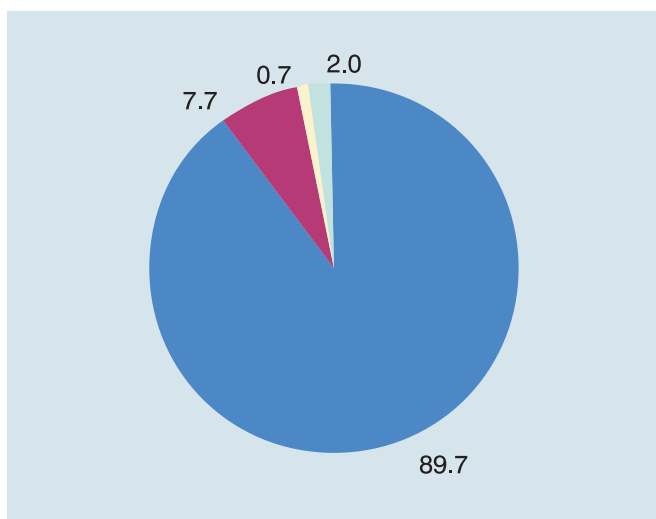
**Chennai**



**Thiruvananthapuram**



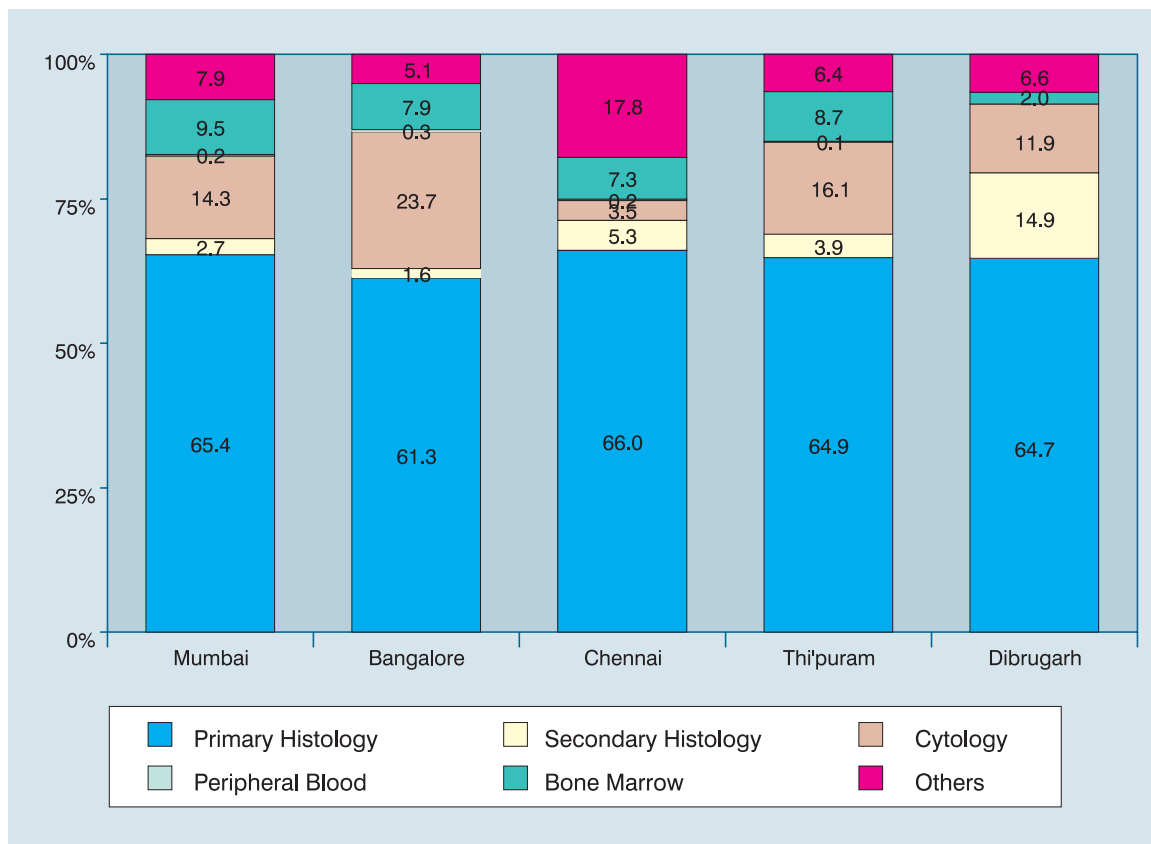
**Dibrugarh**



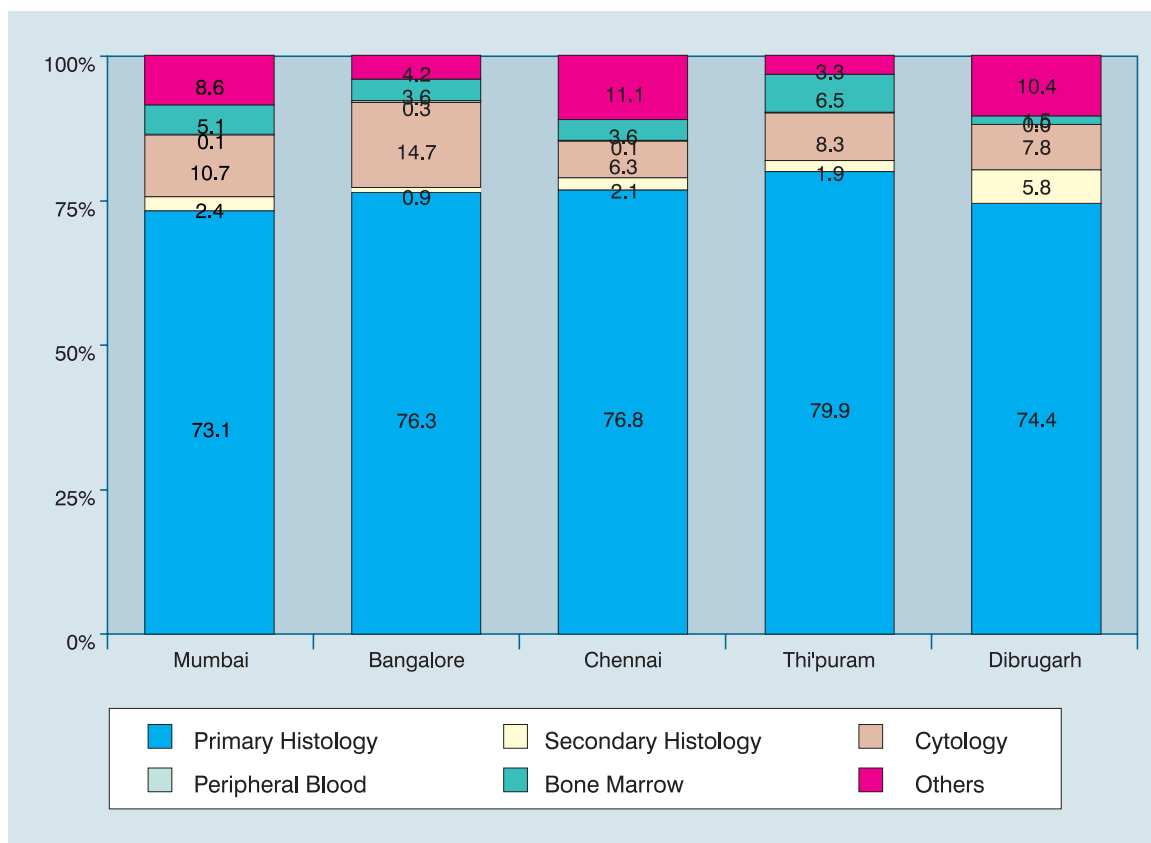


**Fig.4.2(a): Stack (100%) diagram showing Proportion (%) of Microscopically diagnosed Patients according to specific microscopic diagnosis - 2001-03**

**Males**



**Females**



**Table.4.2: Number (#) and Relative Proportion (%) of Cancers based on different types of Microscopic diagnosis (2001-03)**

Type of Microscopic Diagnosis	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Males</b>										
Primary Histology	17702	65.4	6615	61.3	7173	66.0	8496	64.9	1036	64.7
Secondary Histology	744	2.7	175	1.6	571	5.3	516	3.9	238	14.9
Cytology	3879	14.3	2561	23.7	375	3.5	2103	16.1	190	11.9
Peripheral Blood	45	0.2	37	0.3	20	0.2	7	0.1	0	0.0
Bone Marrow	2571	9.5	858	7.9	794	7.3	1134	8.7	32	2.0
Others	2137	7.9	553	5.1	1933	17.8	843	6.4	106	6.6
<b>All microscopic</b>	<b>27078</b>	<b>100.0</b>	<b>10799</b>	<b>100.0</b>	<b>10866</b>	<b>100.0</b>	<b>13099</b>	<b>100.0</b>	<b>1602</b>	<b>100.0</b>
<b>Females</b>										
Primary Histology	15450	73.1	9647	76.3	9533	76.8	9390	79.9	677	74.4
Secondary Histology	503	2.4	108	0.9	259	2.1	222	1.9	53	5.8
Cytology	2269	10.7	1858	14.7	785	6.3	970	8.3	71	7.8
Peripheral Blood	20	0.1	35	0.3	10	0.1	4	0.0	0	0.0
Bone Marrow	1072	5.1	461	3.6	449	3.6	768	6.5	14	1.5
Others	1807	8.6	527	4.2	1381	11.1	391	3.3	95	10.4
<b>All microscopic</b>	<b>21121</b>	<b>100.0</b>	<b>12636</b>	<b>100.0</b>	<b>12417</b>	<b>100.0</b>	<b>11745</b>	<b>100.0</b>	<b>910</b>	<b>100.0</b>

Table 4.3 presents the proportion of microscopic diagnosis from 1994-2003. The proportion has been stable in both sexes in all the registries except in Chennai where it varied from 72.3% to 82.3% in males while in females it varied between 81.4% to 89.3%.

Table 4.4 further gives the proportion of microscopic diagnosis for the four time periods of publication of HBCR reports. The proportion seems to be stable in the four time periods except notable variation seen in Chennai.

The relative proportion of cytological diagnosis during the four periods has been presented in Table 4.5. The proportion has shown an increasing trend in Dibrugarh and Thiruvananthapuram among males. In females all registries have shown a rising proportion.

**Table 4.3 : Number (#) and Relative Proportion (%) of microscopic diagnosis across different years of diagnosis**

Year of Diagnosis	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
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	75.0	3625	93.4	518	93.4
2001	8375	92.1	3397	95.4	2781	82.1	4149	94.0	474	95.8
2002	8288	91.8	3285	94.8	2724	80.4	4108	93.7	470	94.8
2003	8278	92.5	3608	94.3	2989	82.3	3843	93.2	552	90.3
<b>1994-2003</b>	<b>79761</b>	<b>90.9</b>	<b>31065</b>	<b>94.4</b>	<b>23515</b>	<b>77.9</b>	<b>36374</b>	<b>91.4</b>	<b>4919</b>	<b>93.8</b>
<b>FEMALES</b>										
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
2001	6454	91.4	4013	95.5	3549	89.1	3742	96.8	224	93.0
2002	6415	90.8	4020	96.5	3366	87.1	3897	96.6	260	90.3
2003	6445	92.1	4144	95.2	3606	89.3	3582	96.3	332	87.1
<b>1994-2003</b>	<b>61955</b>	<b>90.4</b>	<b>37151</b>	<b>95.5</b>	<b>29599</b>	<b>84.9</b>	<b>33856</b>	<b>95.2</b>	<b>2662</b>	<b>90.6</b>

**Table 4.4: Proportion(%) of Microscopic Diagnosis during the four periods 1984-93, 1994-98, 1999-2000 and 2001-03**

Registry	Males				Females			
	1984-93	1994-98	1999-00	2001-03	1984-93	1994-98	1999-00	2001-03
<b>Mumbai</b>	91.3	90.1	91.1	92.1	91.5	89.6	90.9	91.4
<b>Bangalore</b>	91.1	94.2	94.2	94.9	94.8	95.7	94.8	95.8
<b>Chennai</b>	69.5	76.6	75.7	82.2	71.5	83.4	83.1	88.9
<b>Thi'puram</b>	86.0	89.4	92.8	93.6	90.3	94.2	95.9	96.5
<b>Dibrugarh</b>	88.3	93.9	94.2	93.4	88.3	91.4	89.0	89.7

**Table 4.5: Proportion(%) of Cytological Diagnosis during the four periods 1984-93, 1994-98, 1999-2000 and 2001-03**

Registry	Males				Females			
	1984-93	1994-98	1999-00	2001-03	1984-93	1994-98	1999-00	2001-03
<b>Mumbai</b>	13.3	13.2	13.6	14.3	8.2	9.9	9.7	10.7
<b>Bangalore</b>	23.2	23.6	23.2	23.7	8.5	10.7	13.5	14.7
<b>Chennai</b>	4.0	4.7	7.0	3.5	4.2	4.7	9.1	6.3
<b>Thi'puram</b>	9.6	12.8	16.0	15.5	5.6	7.3	8.4	8.0
<b>Dibrugarh</b>	2.6	8.1	9.7	11.9	3.6	7.6	8.4	7.8

# 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 2001-03. The proportion of patients belonging to Prior Tmt. Only varied from less than one percent in either sex in Dibrugarh to 17% in both sexes at Chennai. 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 12.5% in Thiruvananthapuram in males and 6.3% in Dibrugarh to 28.6% 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 (#) and Relative Proportion (%) of Cancer patients according to Broad Groups of Treatment (Tmt) at Reporting Institution (RI) and/or elsewhere (2001-03)****MALES**

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	3667	13.5	787	7.3	1885	17.3	884	6.7	5	0.3
Prior & Tmt. at RI	2135	7.9	595	5.5	393	3.6	1634	12.5	48	3.0
Tmt. Only at RI	7680	28.4	4127	38.2	3055	28.1	7902	60.3	1381	86.2
No CDT*	13596	50.2	5290	49.0	5533	50.9	2679	20.5	168	10.5
<b>Total Patients</b>	<b>27078</b>	<b>100.0</b>	<b>10799</b>	<b>100.0</b>	<b>10866</b>	<b>100.0</b>	<b>13099</b>	<b>100.0</b>	<b>1602</b>	<b>100.0</b>

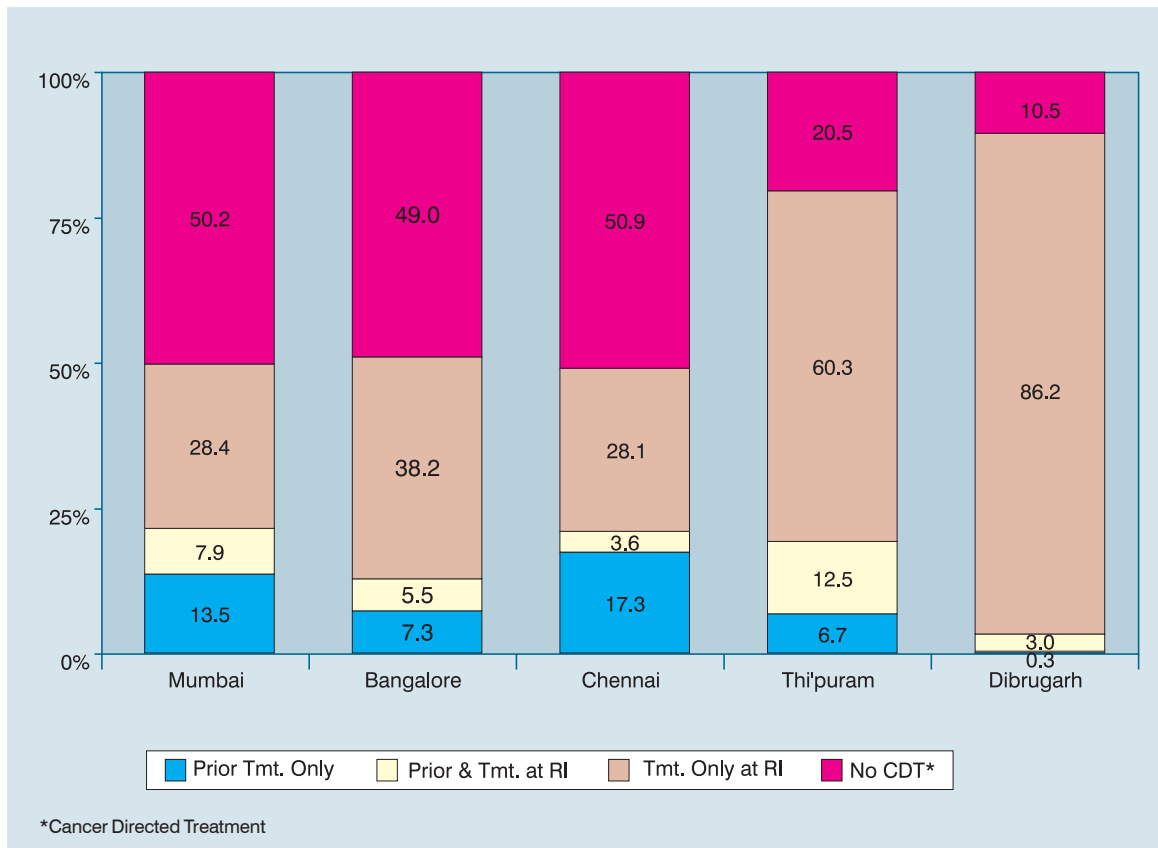
**FEMALES**

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	3154	14.9	990	7.8	1893	15.2	1351	11.5	3	0.3
Prior & Tmt. at RI	3143	14.9	1135	9.0	930	7.5	3358	28.6	57	6.3
Tmt. Only at RI	6018	28.5	5582	44.2	4717	38.0	5612	47.8	721	79.2
No CDT*	8806	41.7	4929	39.0	4877	39.3	1424	12.1	129	14.2
<b>Total Patients</b>	<b>21121</b>	<b>100.0</b>	<b>12636</b>	<b>100.0</b>	<b>12417</b>	<b>100.0</b>	<b>11745</b>	<b>100.0</b>	<b>910</b>	<b>100.0</b>

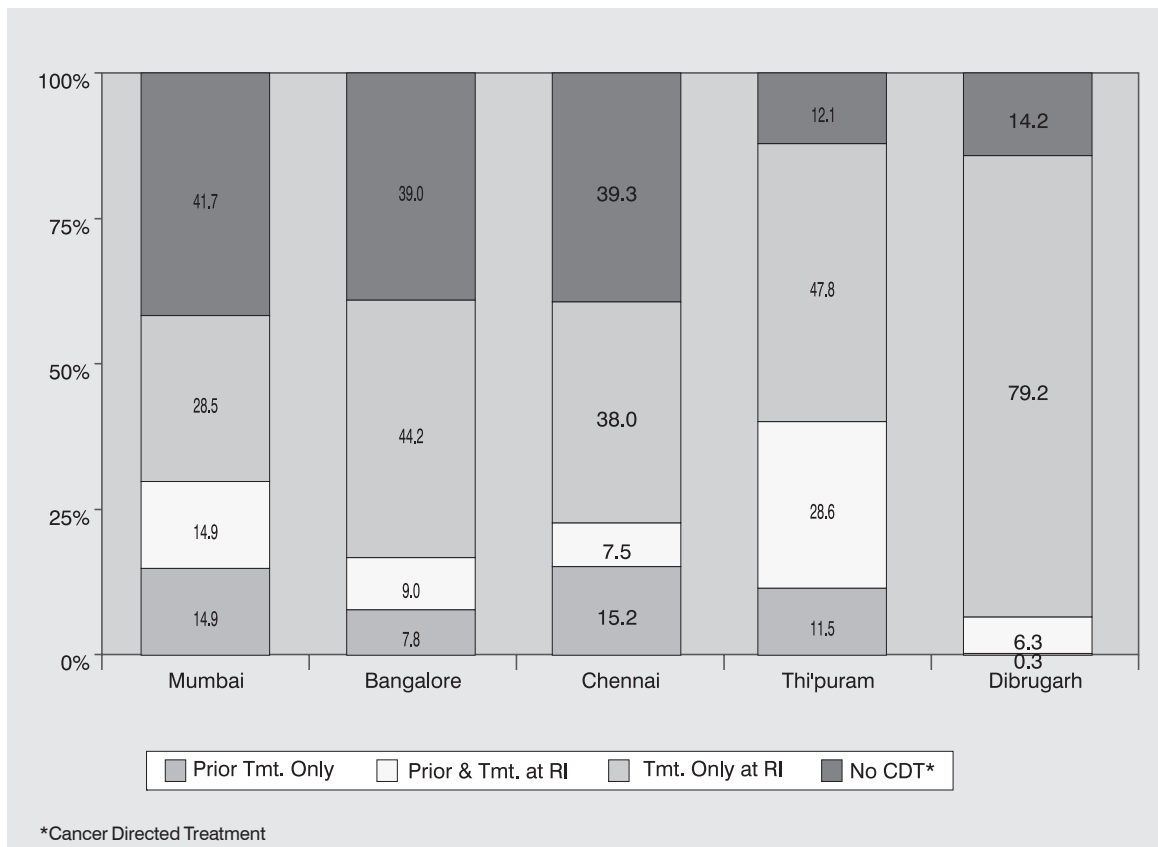
\*CDT=Cancer Directed Treatment

**Fig. 5.1: Stack (100%) diagram showing Proportion (%) according to Broad Groups of Treatment (tmt) - (2001-03)**

**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 years 2001-03. The proportion of the patients with localised disease varied from 5.4% in males at Bangalore to 26.8% in Mumbai. The proportion of the patients with distant or advanced cancer was 4.9% in Dibrugarh and 12-15.5% in other four registries among males. In females, the proportion was lower 10.1% in Dibrugarh to 14% in Mumbai. The proportion under the category 'Others' mainly refers to Lymphomas and Leukaemias, which are generally not staged according to the above system.

In order to overcome the difficulties in abstracting and standardising items of information on clinical extent of disease, NCRP has commenced patterns of care and survival studies on specific sites of cancer. This gives a more comprehensive account on clinical stage for each site including the kind of investigations carried out in order to stipulate the precise stage of cancer in a given patient.

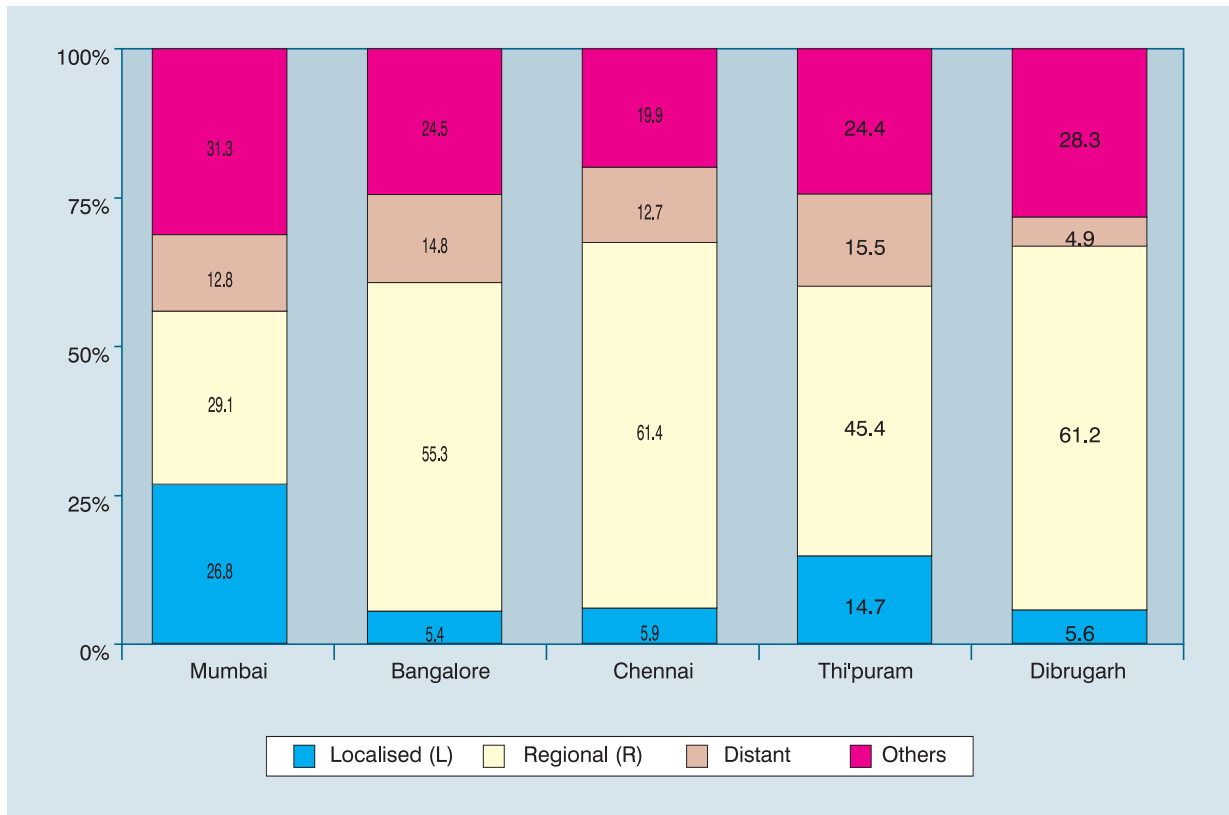
**Table 6.1: Number (#) and Relative Proportion (%) of patients according to Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03)**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
<b>Males</b>												
Mumbai	5693	26.8	6196	29.1	11889	55.9	2732	12.8	3619	17.0	21276	100
Bangalore	513	5.4	5207	55.3	5720	60.7	1393	14.8	1498	15.9	9417	100
Chennai	510	5.9	5276	61.4	5786	67.4	1089	12.7	1115	13.0	8588	100
Thi'puram	1554	14.7	4799	45.4	6353	60.0	1645	15.5	1852	17.5	10581	100
Dibrugarh	86	5.6	948	61.2	1034	66.8	76	4.9	282	18.2	1549	100
<b>Females</b>												
Mumbai	4476	30.2	4672	31.5	9148	61.7	2068	14.0	1494	10.1	14824	100
Bangalore	537	5.1	7503	71.4	8040	76.5	1103	10.5	748	7.1	10511	100
Chennai	752	7.8	6991	72.9	7743	80.7	1018	10.6	579	6.0	9594	100
Thi'puram	943	13.4	3810	54.2	4753	67.6	824	11.7	1075	15.3	7036	100
Dibrugarh	34	4.0	538	63.3	572	67.3	86	10.1	156	18.4	850	100

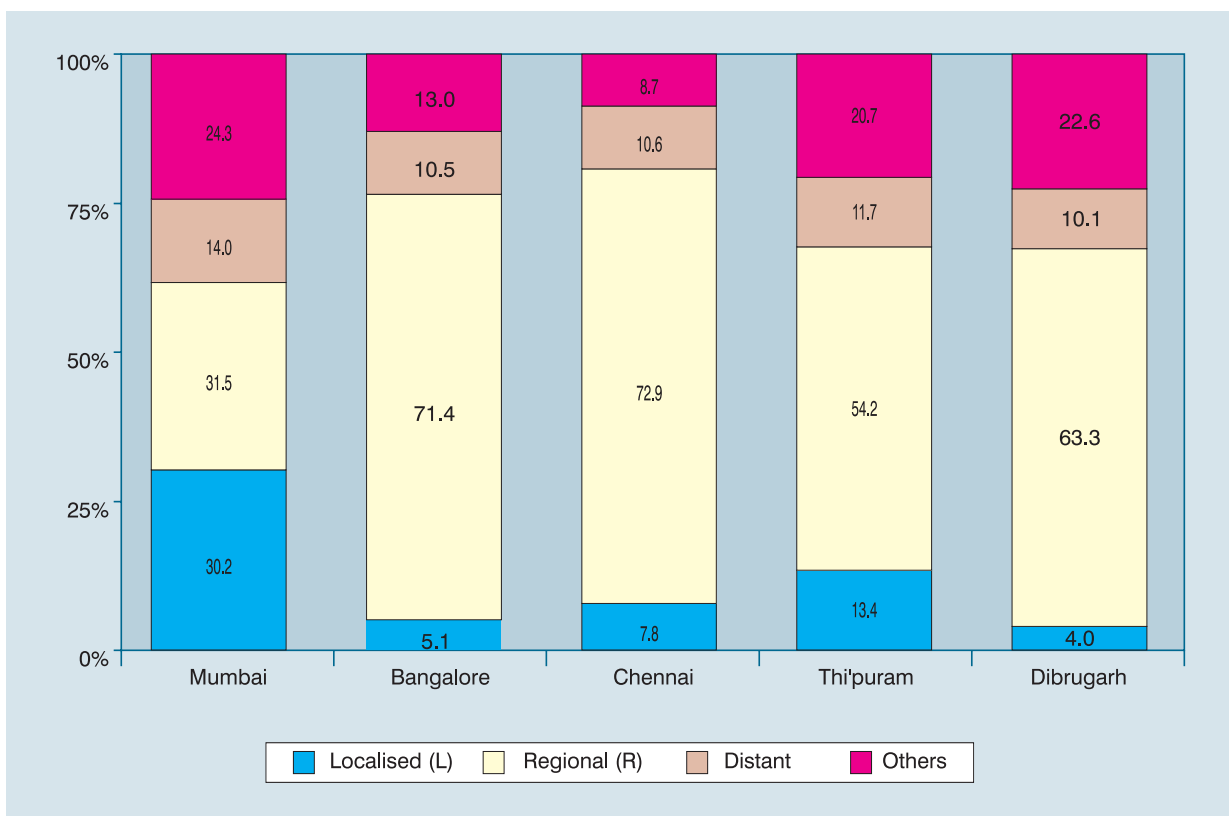


**Fig. 6.1 : Stack (100%) diagram showing proportion(%) of patients according to Clinical Extent of Disease (2001-2003)**

**Males**



**Females**



# Chapter 7

## TREATMENT ONLY AT REPORTING INSTITUTION

This is the most important category of 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

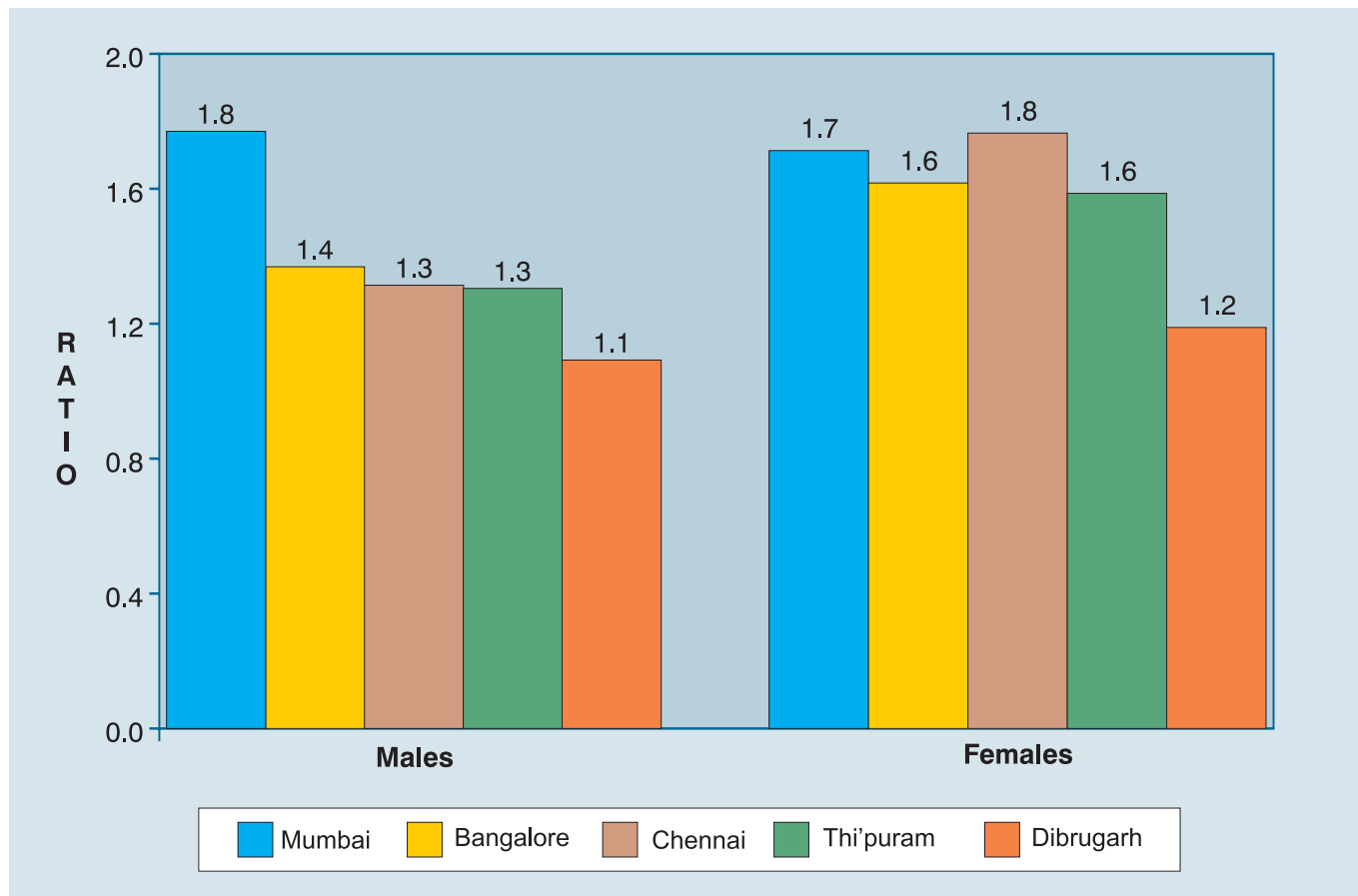
Table 7.2 and corresponding figures (Figures 7.2 and 7.3) give the numbers and relative proportions according to type of specific treatment given, whether only one type of treatment has been given (Single Modality Therapy) or more than one type of therapy (Combination Therapy) has been given. It also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

Single modality of therapy ranged between 58.3% in Mumbai to 91.2% in Dibrugarh in males. In females, the lowest and highest percentages were observed in Bangalore(49.9%) and Dibrugarh(82.0%) respectively.

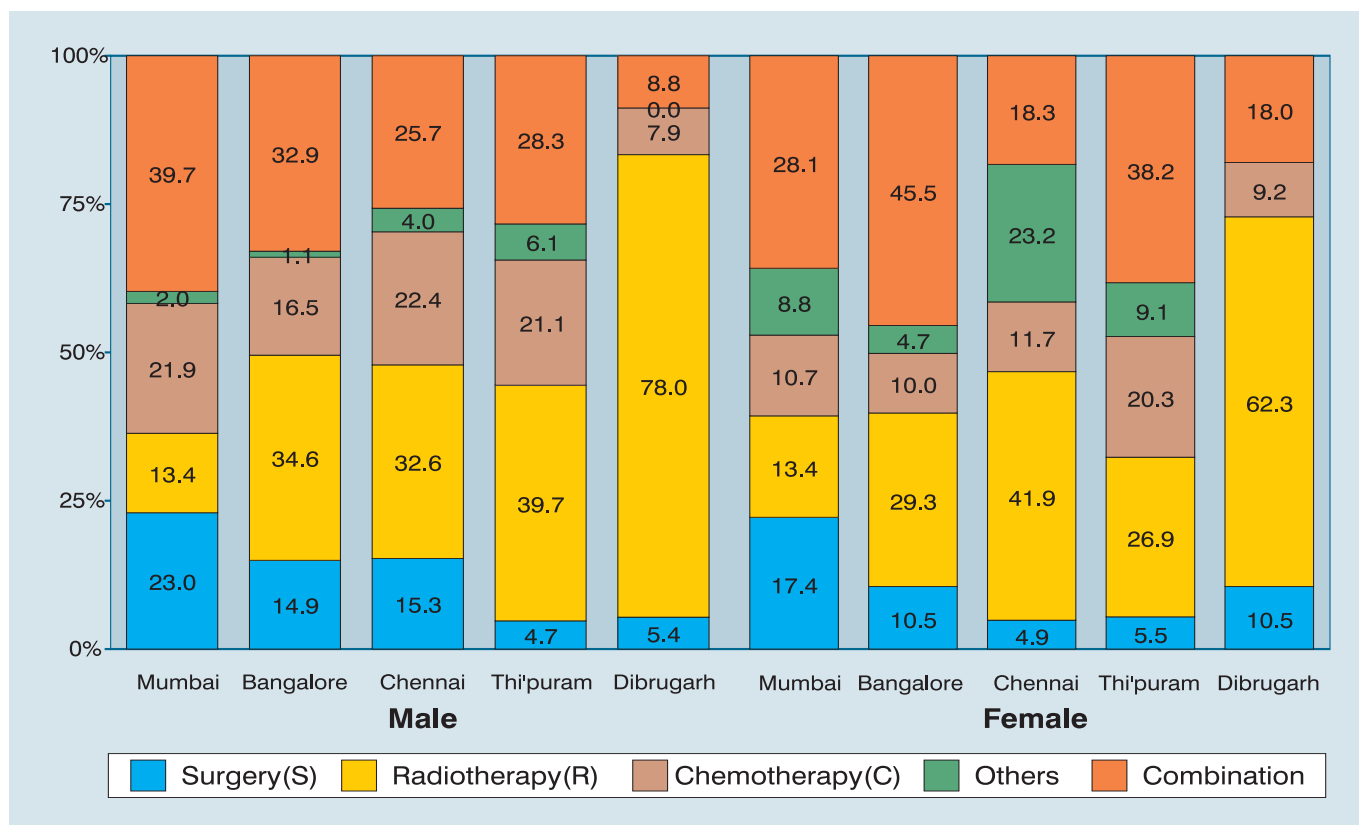
**Table 7.1: Total number of cancer patients (Pts) treated, total number of treatment procedures (Proc) performed and procedures/patient ratio (2001-03)**

Registry	Males			Females		
	Total Pts.	Total Proc.	Ratio	Total Pts.	Total Proc.	Ratio
Mumbai	7680	13596	1.8	6018	10298	1.7
Bangalore	4127	5650	1.4	5582	9024	1.6
Chennai	3055	4015	1.3	4717	8317	1.8
Thi'puram	7902	10313	1.3	5612	8894	1.6
Dibrugarh	1381	1508	1.1	721	856	1.2

**Fig. 7.1: Procedure - Patient Ratio (Patients treated only at reporting Institution) - 2001-03**



**Fig. 7.2: Stack (100%) diagram showing proportion of different types of treatment (patients treated only at Reporting Institution) - 2001-03**



**Table 7.2: Number (#) & Relative Proportion (%) of patients according to Type of Treatment given (2001-03)****Males**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>7680</b>	<b>100.0</b>	<b>4127</b>	<b>100.0</b>	<b>3055</b>	<b>100.0</b>	<b>7902</b>	<b>100.0</b>	<b>1381</b>	<b>100.0</b>
<b>Specific treatments</b>										
Surgery (S)	1765	23.0	616	14.9	467	15.3	373	4.7	74	5.4
Radiotherapy (R)	1029	13.4	1429	34.6	997	32.6	3139	39.7	1077	78.0
Chemotherapy (C)	1681	21.9	680	16.5	685	22.4	1667	21.1	109	7.9
S+R	1284	16.7	412	10.0	285	9.3	442	5.6	51	3.7
S+C	346	4.5	121	2.9	95	3.1	101	1.3	45	3.3
R+C	1192	15.5	723	17.5	333	10.9	1557	19.7	19	1.4
S+R+C	230	3.0	102	2.5	71	2.3	138	1.8	6	0.4
Others	153	2.0	44	1.1	122	4.0	485	6.1	0	0.0
<b>Modality of therapy*</b>										
Single	4475	58.3	2725	66.0	2149	70.3	5179	65.5	1260	91.2
Combination	3052	39.7	1358	32.9	784	25.7	2238	28.3	121	8.8

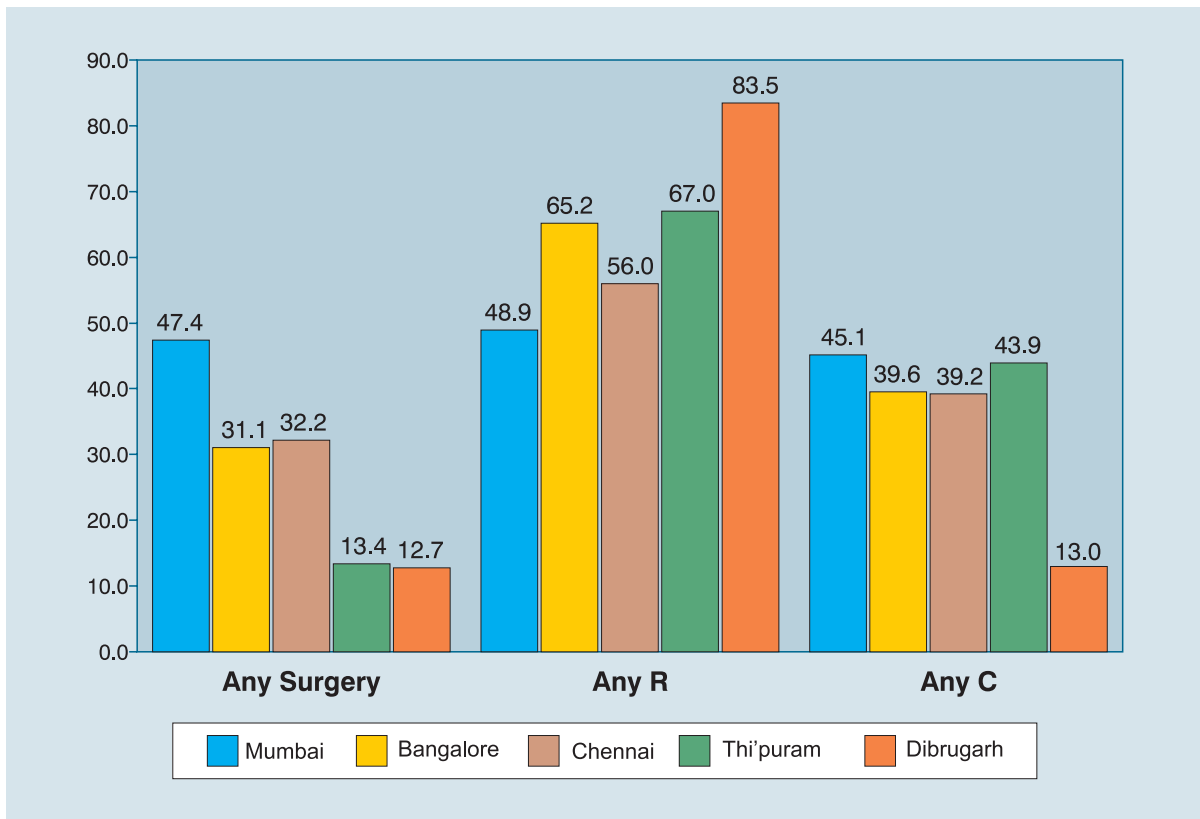
**Females**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>6018</b>	<b>100.0</b>	<b>5582</b>	<b>100.0</b>	<b>4717</b>	<b>100.0</b>	<b>5612</b>	<b>100.0</b>	<b>721</b>	<b>100.0</b>
<b>Specific treatments</b>										
Surgery (S)	1336	22.2	587	10.5	230	4.9	306	5.5	76	10.5
Radiotherapy (R)	1029	17.1	1636	29.3	1976	41.9	1509	26.9	449	62.2
Chemotherapy (C)	820	13.6	560	10.0	554	11.7	1140	20.3	66	9.2
S+R	566	9.4	608	10.9	345	7.3	411	7.3	46	6.4
S+C	444	7.4	307	5.5	126	2.7	353	6.3	69	9.6
R+C	667	11.1	1258	22.5	313	6.6	978	17.4	10	1.6
S+R+C	478	7.9	366	6.6	81	1.7	404	7.2	5	0.7
Others	678	11.3	260	4.7	1092	23.2	511	9.1	0	0.0
<b>Modality of therapy*</b>										
Single	3185	52.9	2783	49.9	2760	58.5	2955	52.7	591	82.0
Combination	2155	35.8	2539	45.5	865	18.3	2146	38.2	130	18.0

\*Excludes specific treatment classified as 'Others'

**Fig. 7.3: Proportion of Type of Treatment  
(Patients treated only at Reporting Institution) - 2001-03**

**Males**



**Females**

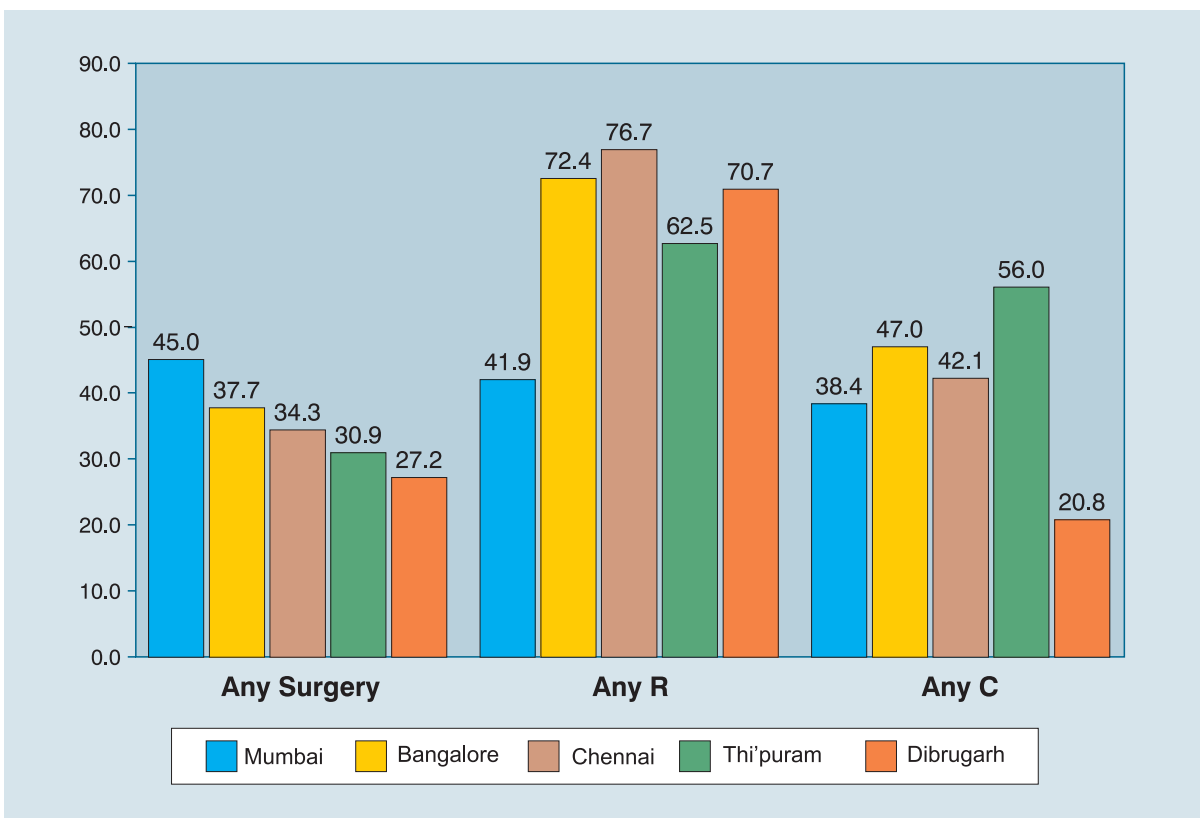


Table 7.3 and Fig. 7.3 presents the total treatment procedures according to specific treatment. Except in Mumbai, radiotherapy was the predominant form of the modalities ranging from 34.1% to 76.5% among both sexes in all registries. In Mumbai, around 33% of the treatment procedures were surgery in both 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 7.3: Number(#) & Relative proportion (%) of Cancer patients according to Any Specific Treatment at Reporting Institution relative to all Treatment procedures (2001-2003)**

Registry	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>MALES</b>									
Mumbai	3641	33.1	3755	34.1	3464	31.5	153	1.4	11013
Bangalore	1282	22.7	2691	47.6	1633	28.9	44	0.8	5650
Chennai	984	24.5	1711	42.6	1198	29.8	122	3.0	4015
Thi'puram	1059	10.3	5298	51.4	3471	33.7	485	4.7	10313
Dibrugarh	176	11.7	1153	76.5	179	11.9	0	0.0	1508
<b>FEMALES</b>									
Mumbai	3453	33.5	3221	31.3	2946	28.6	678	6.6	10298
Bangalore	2104	23.3	4039	44.8	2621	29.0	260	2.9	9024
Chennai	1620	19.5	3618	43.5	1987	23.9	1092	13.1	8317
Thi'puram	1735	19.5	3508	39.4	3140	35.3	511	5.8	8894
Dibrugarh	196	22.9	510	59.6	150	17.5	0	0.0	856

**Table 7.4(a): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease - Males (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	1066	49.2	106	37.2	60	14.8	125	10.6	14	16.9
Radiotherapy ( R )	227	10.5	92	32.3	258	63.6	630	53.5	59	71.0
Chemotherapy ( C )	91	4.2	8	2.8	0	0.0	90	7.6	0	0.0
S+R	276	12.7	29	10.2	73	18.0	67	5.7	7	8.4
S+C	205	9.5	9	3.2	0	0.0	34	2.9	2	2.4
R+C	151	7.0	24	8.4	11	2.7	169	14.4	0	0.0
S+R+C	100	4.6	7	2.5	2	0.5	17	1.4	1	1.2
Others	53	2.5	10	3.5	2	0.5	45	3.8	0	0.0
<b>All Treatments</b>	<b>2169</b>	<b>100.0</b>	<b>285</b>	<b>100.0</b>	<b>406</b>	<b>100.0</b>	<b>1177</b>	<b>100.0</b>	<b>83</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	594	20.4	464	17.5	388	22.3	230	6.3	47	5.3
Radiotherapy ( R )	549	18.8	1086	40.9	662	38.0	1655	45.2	742	83.8
Chemotherapy ( C )	176	6.0	160	6.0	110	6.3	321	8.8	21	2.4
S+R	941	32.3	347	13.0	201	11.6	351	9.6	35	4.0
S+C	93	3.2	95	3.6	82	4.7	55	1.5	32	3.6
R+C	433	14.9	391	14.7	157	9.0	825	22.5	7	0.8
S+R+C	110	3.8	89	3.4	67	3.9	112	3.0	2	0.2
Others	19	0.7	24	0.9	73	4.2	113	3.0	0	0.0
<b>All Treatments</b>	<b>2915</b>	<b>100.0</b>	<b>2656</b>	<b>100.0</b>	<b>1740</b>	<b>100.0</b>	<b>3662</b>	<b>100.0</b>	<b>886</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	34	4.5	28	9.5	12	7.8	11	1.0	4	6.8
Radiotherapy ( R )	160	21.0	153	51.9	17	11.1	560	50.5	26	44.1
Chemotherapy ( C )	311	40.8	40	13.6	47	30.7	169	15.3	19	32.2
S+R	13	1.7	20	6.8	2	1.3	8	0.7	1	1.7
S+C	37	4.9	7	2.4	10	6.5	8	0.7	6	10.2
R+C	134	17.6	40	13.6	17	11.1	154	13.9	3	5.0
S+R+C	9	1.2	3	1.0	1	0.7	7	0.6	0	0.0
Others	65	8.5	4	1.4	47	30.7	191	17.2	0	0.0
<b>All Treatments</b>	<b>763</b>	<b>100.0</b>	<b>295</b>	<b>100.0</b>	<b>153</b>	<b>100.0</b>	<b>1108</b>	<b>100.0</b>	<b>59</b>	<b>100.0</b>
<b>Others</b>										
Surgery ( S )	71	3.9	18	2.0	7	0.9	7	0.4	9	2.6
Radiotherapy ( R )	93	5.0	98	11.0	60	7.9	294	15.0	249	70.7
Chemotherapy ( C )	1103	60.2	472	53.0	528	69.8	1087	55.6	69	19.6
S+R	54	3.0	16	1.8	9	1.2	16	0.8	8	2.3
S+C	11	0.6	10	1.2	3	0.4	4	0.2	5	1.4
R+C	474	25.9	268	30.0	148	19.6	409	20.9	9	2.6
S+R+C	11	0.6	3	0.4	1	0.1	2	0.1	3	0.9
Others	16	0.9	6	0.7	0	0.0	136	7.0	0	0.0
<b>All Treatments</b>	<b>1833</b>	<b>100.0</b>	<b>891</b>	<b>100.0</b>	<b>756</b>	<b>100.0</b>	<b>1955</b>	<b>100.0</b>	<b>352</b>	<b>100.0</b>

**Table 7.4(b): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease - Females (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	905	47.2	93	25.6	27	4.7	133	17.1	5	15.6
Radiotherapy ( R )	136	7.1	57	15.7	215	37.0	248	31.8	23	71.9
Chemotherapy ( C )	52	2.7	10	2.8	12	2.1	30	3.9	0	0.0
S+R	205	10.7	61	16.8	127	21.9	103	13.2	2	6.3
S+C	147	7.7	24	6.6	7	1.2	58	7.5	2	6.3
R+C	87	4.5	45	12.4	19	3.3	79	10.1	0	0.0
S+R+C	182	9.5	28	7.7	9	1.6	58	7.5	0	0.0
Others	204	10.6	46	12.6	165	28.4	70	9.0	0	0.0
<b>All Treatments</b>	<b>1918</b>	<b>100.0</b>	<b>364</b>	<b>100.0</b>	<b>581</b>	<b>100.0</b>	<b>779</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	322	12.3	450	10.1	191	5.6	166	5.2	62	12.3
Radiotherapy ( R )	723	27.6	1426	31.8	1718	50.2	1029	32.5	322	63.6
Chemotherapy ( C )	96	3.7	251	5.6	172	5.0	222	7.0	12	2.4
S+R	331	12.6	522	11.7	214	6.3	299	9.4	41	8.1
S+C	132	5.0	226	5.1	102	3.0	235	7.4	58	11.5
R+C	355	13.5	1083	24.2	200	5.8	624	19.7	6	1.2
S+R+C	260	9.9	322	7.2	69	2.0	327	10.3	5	1.0
Others	404	15.4	198	4.4	759	22.2	268	8.5	0	0.0
<b>All Treatments</b>	<b>2623</b>	<b>100.0</b>	<b>4478</b>	<b>100.0</b>	<b>3425</b>	<b>100.0</b>	<b>3170</b>	<b>100.0</b>	<b>506</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	29	4.2	30	9.2	12	3.2	3	0.5	5	9.6
Radiotherapy ( R )	113	16.4	109	33.2	28	7.5	133	21.8	15	28.9
Chemotherapy ( C )	230	33.3	72	22.0	123	33.1	197	32.2	22	42.3
S+R	13	1.9	19	5.8	1	0.3	8	1.3	0	0.0
S+C	149	21.6	52	15.9	17	4.6	54	8.8	8	15.4
R+C	68	9.9	23	7.0	22	5.9	79	12.9	2	3.9
S+R+C	25	3.6	12	3.7	3	0.8	19	3.1	0	0.0
Others	63	9.1	11	3.4	166	44.6	118	19.3	0	0.0
<b>All Treatments</b>	<b>690</b>	<b>100.0</b>	<b>328</b>	<b>100.0</b>	<b>372</b>	<b>100.0</b>	<b>611</b>	<b>100.0</b>	<b>52</b>	<b>100.0</b>
<b>Others</b>										
Surgery ( S )	80	10.2	14	3.4	0	0.0	4	0.4	4	3.1
Radiotherapy ( R )	57	7.2	44	10.7	15	4.4	99	9.4	89	67.9
Chemotherapy ( C )	442	56.2	227	55.1	247	72.9	691	65.7	32	24.4
S+R	17	2.2	6	1.5	3	0.9	1	0.1	3	2.3
S+C	16	2.0	5	1.2	0	0.0	6	0.6	1	0.8
R+C	157	20.0	107	26.0	72	21.2	196	18.6	2	1.5
S+R+C	11	1.4	4	1.0	0	0.0	0	0.0	0	0.0
Others	7	0.9	5	1.2	2	0.6	55	5.2	0	0.0
<b>All Treatments</b>	<b>787</b>	<b>100.0</b>	<b>412</b>	<b>100.0</b>	<b>339</b>	<b>100.0</b>	<b>1052</b>	<b>100.0</b>	<b>131</b>	<b>100.0</b>



**Table 7.5(a): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Males (2001-2003)**

Registry	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	1647	77.0	754	35.3	547	25.6	53	2.5	2139
Bangalore	151	53.0	152	53.3	48	16.8	10	3.5	285
Chennai	135	33.3	344	84.7	13	3.2	2	0.5	406
Thi'puram	243	20.7	883	75.0	310	26.3	45	3.8	1177
Dibrugarh	24	28.9	67	80.7	3	3.6	0	0.0	83
<b>REGIONAL</b>									
Mumbai	1738	59.6	2033	69.7	812	27.9	19	0.7	2915
Bangalore	995	37.5	1913	72.0	735	27.7	24	0.9	2656
Chennai	738	42.4	1087	62.5	416	23.9	73	4.2	1740
Thi'puram	748	20.4	2943	80.4	1313	35.9	113	3.1	3662
Dibrugarh	116	13.1	786	88.7	62	7.0	0	0.0	886
<b>DISTANT</b>									
Mumbai	93	12.2	316	41.4	491	64.4	65	8.5	763
Bangalore	58	19.7	216	73.2	90	30.5	4	1.4	295
Chennai	25	16.3	37	24.2	75	49.0	47	30.7	153
Thi'puram	34	3.1	739	66.7	338	30.5	191	17.2	1108
Dibrugarh	14	23.7	30	50.9	28	47.5	0	0.0	59
<b>OTHERS</b>									
Mumbai	147	8.0	632	34.5	1599	87.3	16	0.9	1833
Bangalore	47	5.3	385	43.2	753	84.5	6	0.7	891
Chennai	20	2.7	218	28.8	680	90.0	0	0.0	756
Thi'puram	29	1.5	721	36.9	1502	76.8	136	7.0	1955
Dibrugarh	25	7.1	269	76.4	86	24.4	0	0.0	352

**Table 7.5(b): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Females (2001-2003)**

Registry	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	1439	75.0	610	31.8	468	24.4	204	10.6	1918
Bangalore	206	56.6	191	52.5	107	29.4	46	12.6	364
Chennai	170	29.3	370	63.7	47	8.1	165	28.4	581
Thi'puram	352	45.2	488	62.6	225	28.9	70	9.0	779
Dibrugarh	9	28.1	25	78.1	2	6.3	0	0.0	32
<b>REGIONAL</b>									
Mumbai	1045	39.8	1669	63.6	843	32.1	404	15.4	2623
Bangalore	1520	33.9	3353	74.9	1882	42.0	198	4.4	4478
Chennai	576	16.8	2201	64.3	543	15.9	759	22.2	3425
Thi'puram	1027	32.4	2279	71.9	1408	44.4	268	8.5	3170
Dibrugarh	166	32.8	374	73.9	81	16.0	0	0.0	506
<b>DISTANT</b>									
Mumbai	216	31.3	219	31.7	472	68.4	63	9.1	690
Bangalore	113	34.5	163	49.7	159	48.5	11	3.4	328
Chennai	33	8.9	54	14.5	165	44.4	166	44.6	372
Thi'puram	84	13.8	239	39.1	349	57.1	118	19.3	611
Dibrugarh	13	25.0	17	32.7	32	61.5	0	0.0	52
<b>OTHERS</b>									
Mumbai	124	15.8	242	30.8	626	79.5	7	0.9	787
Bangalore	29	7.0	261	63.4	343	83.3	5	1.2	412
Chennai	3	0.9	90	26.6	319	94.1	2	0.6	339
Thi'puram	11	1.1	296	28.1	893	84.9	55	5.2	1052
Dibrugarh	8	6.1	94	71.8	35	26.7	0	0.0	131

# Chapter 8

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

The total number, relative proportion and rank of the cancer of mouth in respective registries among males and females for the years 2001 to 2003 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 mouth. 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. Among males all registries showed higher proportion of soft palate cancers as compared to hard palate cancers while in females the proportion of hard palate cancers were markedly higher. The only exception was that the soft palate cancers were higher in females in Dibrugarh.

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 2003. An increasing trend in actual number was observed in Mumbai (in males & females).

Table 8.2 and Figure 8.2 give the distribution of mouth cancers by five year age group. The maximum number of mouth cancers were seen in the age group (45-49 years) in Mumbai and Dibrugarh in both males and females while in other registries the maximum number of cases occurred after the age of 50 years.

**Table 8.1(a) : Number(#), Relative Proportion(%) and Rank(R) of cancers of the mouth (2001-03)**

Registry	Males				Females			
	Total	#	%	R	Total	#	%	R
Mumbai	27078	3289	12.1	1	21121	1054	5.0	4
Bangalore	10799	573	5.3	5	12636	1323	10.5	3
Chennai	10866	916	8.4	2	12417	706	5.7	3
Thi'puram	13099	1230	9.4	2	11745	696	5.9	5
Dibrugarh	1602	106	6.6	3	910	67	7.4	4

**Table 8.1(b): Cancers of Mouth - Number(#) and Relative Proportion(%) according to sub-site (2001-2003)**

	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Gums	767	23.3	102	17.8	162	17.7	236	19.2	21	19.8
Floor of mouth	141	4.3	84	14.7	107	11.7	177	14.4	9	8.5
Palate	299	9.1	110	19.2	155	16.9	161	13.1	23	21.7
Other & Uns.	2082	63.3	277	48.3	492	53.7	656	53.3	53	50.0
<b>Total</b>	<b>3289</b>	<b>100.0</b>	<b>573</b>	<b>100.0</b>	<b>916</b>	<b>100.0</b>	<b>1230</b>	<b>100.0</b>	<b>106</b>	<b>100.0</b>
<b>FEMALES</b>										
Gums	295	28.0	201	15.2	169	23.9	175	25.2	19	28.4
Floor of mouth	25	2.4	14	1.1	7	1.0	16	2.3	6	9.0
Palate	68	6.5	56	4.2	36	5.1	47	6.8	4	6.0
Other & Uns.	666	63.2	1052	79.5	494	70.0	458	65.8	38	56.7
<b>Total</b>	<b>1054</b>	<b>100.0</b>	<b>1323</b>	<b>100.0</b>	<b>706</b>	<b>100.0</b>	<b>696</b>	<b>100.0</b>	<b>67</b>	<b>100.0</b>

**Table 8.1(c): Cancer of Gum - Number(#) and Relative Proportion(%) according to sub-site (2001-2003)**

	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Upper gum	75	9.8	15	14.7	31	19.1	33	14.0	3	14.3
Lower gum	580	75.6	34	33.3	129	79.6	193	81.8	14	66.7
Other & Uns.	112	14.6	53	52.0	2	1.2	10	4.2	4	19.1
<b>Total</b>	<b>767</b>	<b>100.0</b>	<b>102</b>	<b>100.0</b>	<b>162</b>	<b>100.0</b>	<b>236</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>
<b>FEMALES</b>										
Upper gum	54	18.3	18	9.0	29	17.2	23	13.1	3	15.8
Lower gum	205	69.5	58	28.9	138	81.7	145	82.9	12	63.2
Other & Uns.	36	12.2	125	62.2	2	1.2	7	4.0	4	21.0
<b>Total</b>	<b>295</b>	<b>100.0</b>	<b>201</b>	<b>100.0</b>	<b>169</b>	<b>100.0</b>	<b>175</b>	<b>100.0</b>	<b>19</b>	<b>100.0</b>

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. The proportion of mouth cancers with localized and regional extent were above 88% in all registries.

**Table 8.1(d): Cancer of Palate - Number(#) and Relative Proportion(%) according to sub-site (2001-2003)**

	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Hard palate	127	42.5	31	28.2	37	23.9	54	33.5	2	8.7
Soft palate	154	51.5	56	50.9	57	36.8	77	47.8	13	56.5
Other & Uns.	18	6.0	23	20.9	61	39.4	30	18.6	8	34.8
<b>Total</b>	<b>299</b>	<b>100.0</b>	<b>110</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>	<b>161</b>	<b>100.0</b>	<b>23</b>	<b>100.0</b>
<b>FEMALES</b>										
Hard palate	45	66.2	18	32.1	14	38.9	35	74.5	1	25.0
Soft palate	18	26.5	11	19.6	5	13.9	4	8.5	3	75.0
Other & Uns.	5	7.4	27	48.2	17	47.2	8	17.0	0	0.0
<b>Total</b>	<b>68</b>	<b>100.0</b>	<b>56</b>	<b>100.0</b>	<b>36</b>	<b>100.0</b>	<b>47</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>

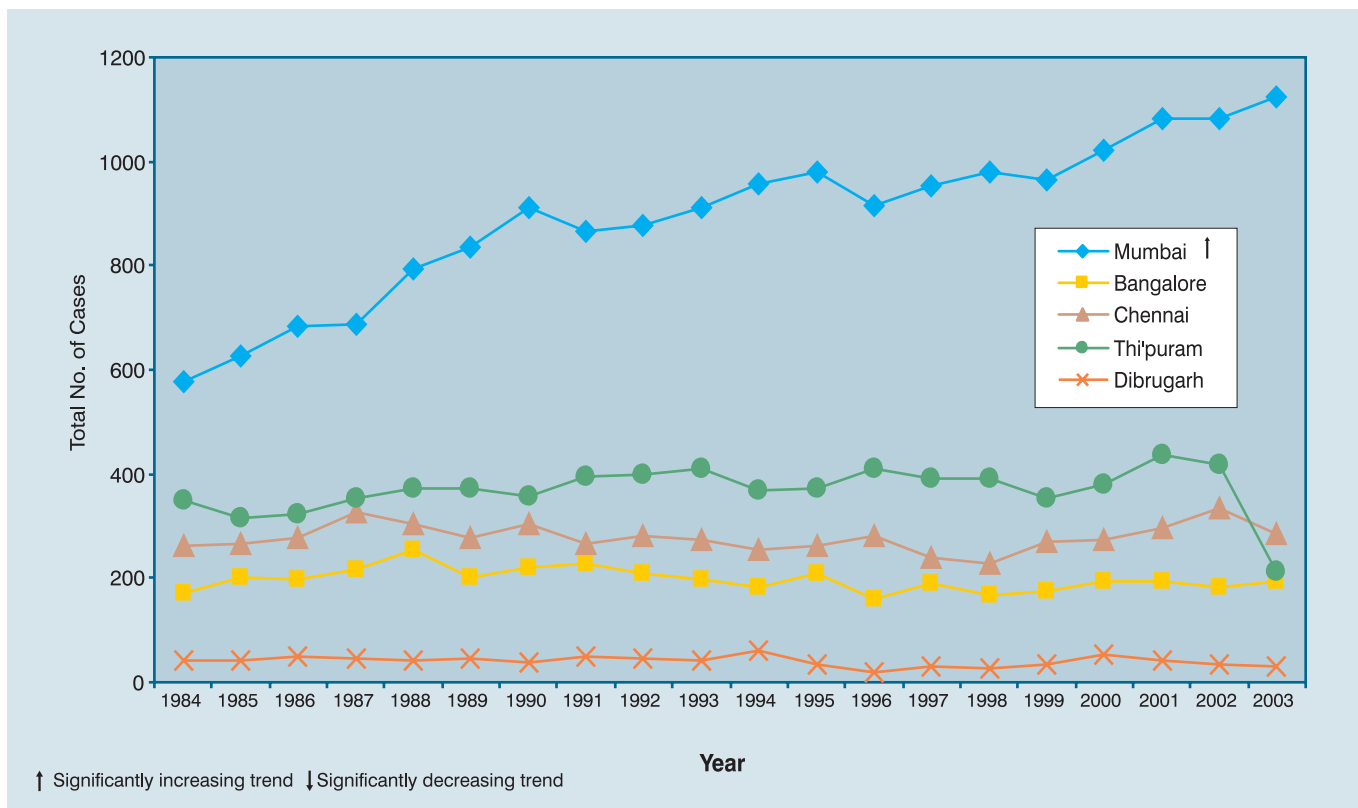
**Table 8.1(e): Cancer of other and Unspecified parts of mouth - Number(#) and Relative Proportion (%) according to sub-site (2001-2003)**

	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Cheek mucosa	1536	73.8	172	62.1	422	85.8	582	88.7	37	69.8
Vestibule of Mouth	305	14.7	25	9.0	5	1.0	1	0.2	3	5.7
Retromolar area	237	11.4	63	22.7	51	10.4	68	10.4	7	13.2
Other & UNS	4	0.2	17	6.1	14	2.9	5	0.8	6	11.3
<b>Total</b>	<b>2082</b>	<b>100.0</b>	<b>277</b>	<b>100.0</b>	<b>492</b>	<b>100.0</b>	<b>656</b>	<b>100.0</b>	<b>53</b>	<b>100.0</b>
<b>Females</b>										
Cheek mucosa	523	78.5	721	68.5	463	93.7	430	93.9	24	63.2
Vestibule of Mouth	91	13.7	114	10.8	8	1.6	3	0.7	3	7.9
Retromolar area	52	7.8	102	9.7	13	2.6	21	4.6	5	13.2
Other & UNS	0	0.0	115	10.9	10	2.0	4	0.9	6	15.8
<b>Total</b>	<b>666</b>	<b>100.0</b>	<b>1052</b>	<b>100.0</b>	<b>494</b>	<b>100.0</b>	<b>458</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>

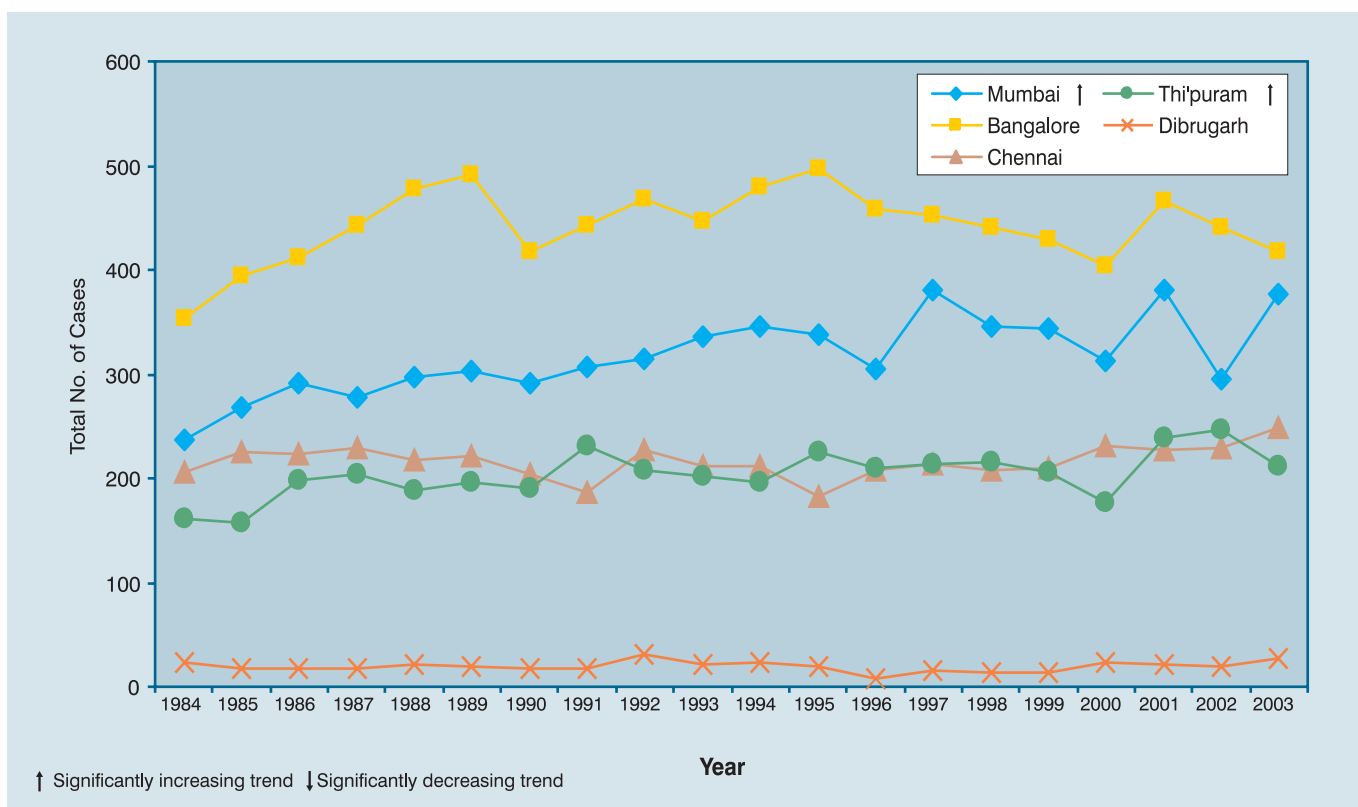
Table 8.5 gives the number and relative proportion according to the broad groups of treatment and Tables 8.6, 8.7 & 8.8 give an idea of the type of treatment instituted by these registries.

**Fig 8.1 : Trends in Actual Numbers - Mouth Cancers**

**Males**



**Females**



**Table 8.2: Number(#) and Relative Proportion(%) of mouth cancers according to five year age group (2001-03)****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	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15-19	3	0.1	2	0.3	1	0.1	0	0.0	0	0.0
20-24	16	0.5	0	0.0	0	0.0	2	0.2	0	0.0
25-29	58	1.7	5	0.9	6	0.7	3	0.2	4	3.8
30-34	156	4.7	15	2.6	20	2.2	9	0.7	1	0.9
35-39	282	8.5	34	5.9	37	4.0	32	2.6	10	9.4
40-44	453	13.6	39	6.8	58	6.3	54	4.4	11	10.4
45-49	508	15.2	63	11.0	105	11.4	130	10.6	18	17.0
50-54	503	15.1	82	14.3	121	13.2	157	12.8	6	5.7
55-59	420	12.6	71	12.4	154	16.8	195	15.9	15	14.1
60-64	381	11.4	92	16.1	163	17.8	197	16.0	16	15.1
65-69	300	9.0	77	13.4	119	13.0	173	14.1	9	8.5
70-74	127	3.8	54	9.4	73	7.9	151	12.3	7	6.6
75+	81	2.4	39	6.8	59	6.4	127	10.3	9	8.5
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>3289</b>	<b>100.0</b>	<b>573</b>	<b>100.0</b>	<b>916</b>	<b>100.0</b>	<b>1230</b>	<b>100.0</b>	<b>106</b>	<b>100.0</b>

<b>Mean</b>	51.5	56.8	57.3	59.9	54.5
<b>SD</b>	11.78	12.22	11.29	11.01	13.20

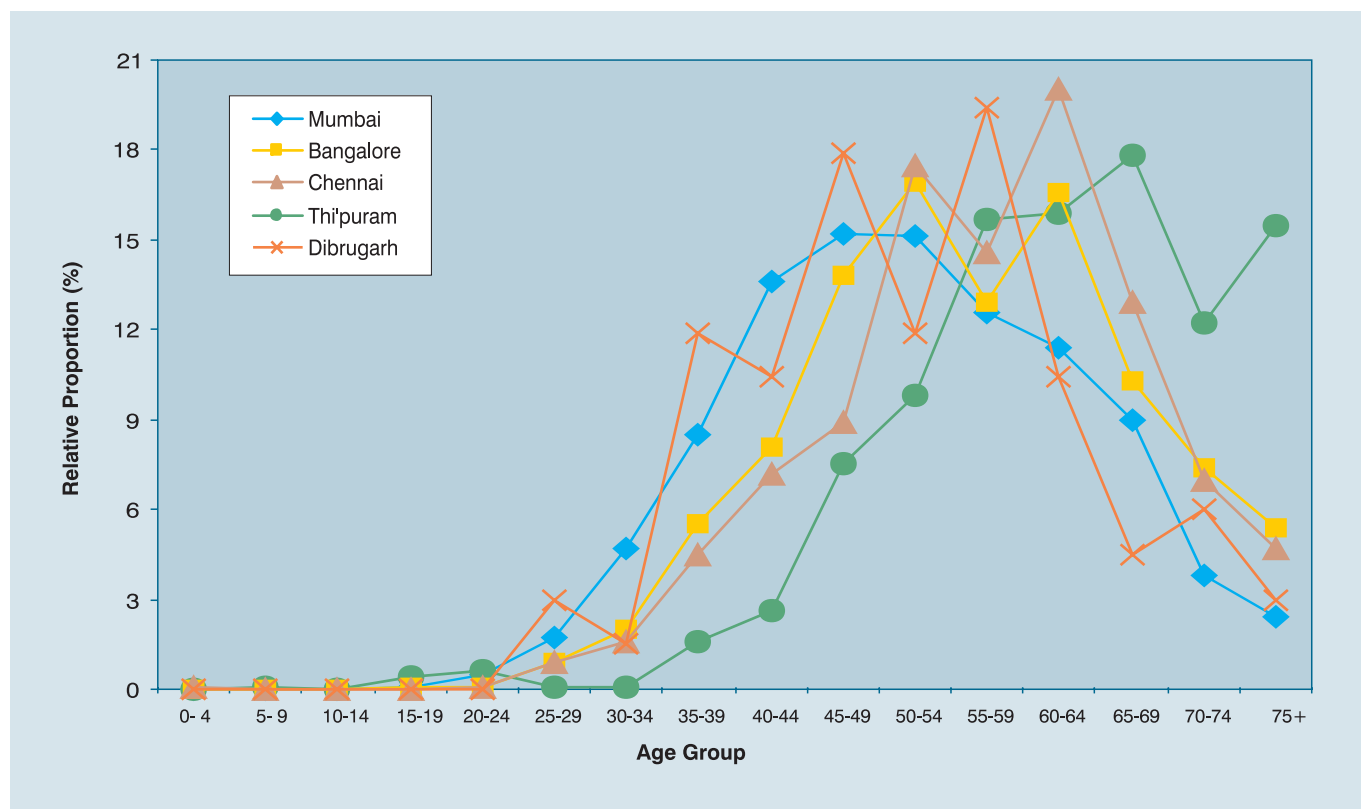
**Females**

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
0-4	0	0.0	0	0.0	1	0.1	0	0.0	0	0.0
5-9	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
10-14	2	0.2	0	0.0	0	0.0	0	0.0	0	0.0
15-19	2	0.2	1	0.1	0	0.0	3	0.4	0	0.0
20-24	5	0.5	1	0.1	1	0.1	4	0.6	0	0.0
25-29	9	0.9	12	0.9	7	0.9	1	0.1	2	3.0
30-34	30	2.9	27	2.0	11	1.6	1	0.1	1	1.5
35-39	70	6.6	73	5.5	32	4.5	11	1.6	8	11.9
40-44	93	8.8	107	8.1	51	7.2	18	2.6	7	10.4
45-49	160	15.2	182	13.8	63	8.9	52	7.5	12	17.9
50-54	136	12.9	224	16.9	123	17.5	68	9.8	8	11.9
55-59	147	14.0	171	12.9	103	14.6	109	15.7	13	19.4
60-64	159	15.1	220	16.6	141	20	111	15.9	7	10.4
65-69	124	11.8	136	10.3	91	12.9	124	17.8	3	4.5
70-74	73	6.9	98	7.4	49	7.0	85	12.2	4	6.0
75+	44	4.2	71	5.4	33	4.7	108	15.5	2	3.0
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>1054</b>	<b>100.0</b>	<b>1323</b>	<b>100.0</b>	<b>706</b>	<b>100.0</b>	<b>696</b>	<b>100.0</b>	<b>67</b>	<b>100.0</b>

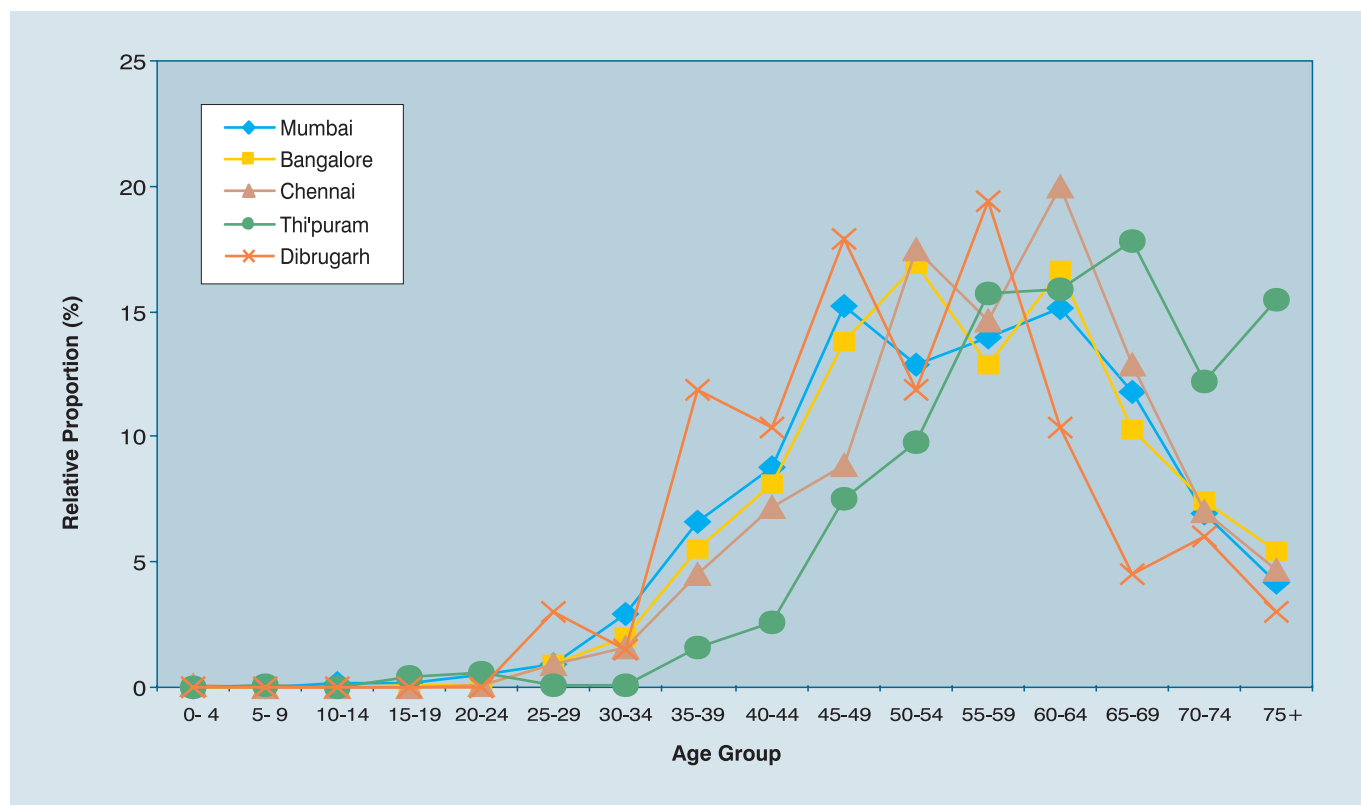
<b>Mean</b>	54.7	55.7	56.7	62.1	51.9
<b>SD</b>	12.06	11.49	11.16	11.30	11.59

**Fig 8.2 : Five Year Age Group Distribution - Mouth Cancers (2001-2003)**

**Males**



**Females**





**Table 8.3: Number(#) and Relative Proportion(%) of mouth cancers based on different Methods of Diagnosis (2001-03)**

Registry	Microscopic		Clinical		All imaging Techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
<b>Males</b>										
Mumbai	3144	95.6	2	0.1	1	0.0	142	4.3	3289	100.0
Bangalore	542	94.6	20	3.5	1	0.2	10	1.7	573	100.0
Chennai	641	70.0	275	30.0	0	0.0	0	0.0	916	100.0
Thi'puram	1162	94.5	68	5.5	0	0.0	0	0.0	1230	100.0
Dibrugarh	104	98.1	1	0.9	0	0.0	1	0.9	106	100.0
<b>Females</b>										
Mumbai	1025	97.2	0	0.0	0	0.0	29	2.8	1054	100.0
Bangalore	1278	96.6	43	3.3	0	0.0	2	0.2	1323	100.0
Chennai	469	66.4	236	33.4	1	0.1	0	0.0	706	100.0
Thi'puram	651	93.5	44	6.3	0	0.0	1	0.1	696	100.0
Dibrugarh	67	100	0	0.0	0	0.0	0	0.0	67	100.0

**Table 8.4: Number(#) and Relative Proportion(%) of mouth cancer patients according to the Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03)**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
<b>Males</b>												
Mumbai	750	26.5	1756	62.1	2506	88.6	98	3.5	223	7.9	2827	100.0
Bangalore	42	7.9	432	81.5	474	89.4	43	8.1	13	2.5	530	100.0
Chennai	137	18.3	608	81.1	745	99.3	5	0.7	0	0.0	750	100.0
Thi'puram	156	13.9	959	85.4	1115	99.3	8	0.7	0	0.0	1123	100.0
Dibrugarh	12	12.0	87	87.0	99	99.0	0	0.0	1	1.0	100	100.0
<b>Females</b>												
Mumbai	239	25.4	593	63.1	832	88.5	33	3.5	75	3.0	940	100.0
Bangalore	77	6.1	1065	84.4	1142	90.5	102	8.1	18	1.4	1262	100.0
Chennai	69	11.6	522	88.0	591	99.7	2	0.3	0	0.0	593	100.0
Thi'puram	90	13.9	550	84.9	640	98.7	8	1.2	0	0.0	648	100.0
Dibrugarh	5	8.1	57	91.9	62	100	0	0.0	0	0.0	62	100.0

**Table 8.5: Number(#) and Relative Proportion(%) of mouth cancer patients according to Broad Groups of Treatment(Tmt) (2001-03)**

	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Prior Tmt. Only	308	9.4	26	4.5	160	17.5	35	2.8	0	0.0
Prior & Tmt. at RI	154	4.7	17	3.0	6	0.7	72	5.9	6	5.7
Tmt. Only at RI	1265	38.5	278	48.5	348	38.0	914	74.3	96	90.6
No Treatment	1562	47.5	252	44.0	402	43.9	209	17.0	4	3.8
<b>Total Patients</b>	<b>3289</b>	<b>100.0</b>	<b>573</b>	<b>100.0</b>	<b>916</b>	<b>100.0</b>	<b>1230</b>	<b>100.0</b>	<b>1062</b>	<b>100.0</b>
<b>Females</b>										
Prior Tmt. Only	71	6.7	38	2.9	109	15.4	15	2.2	0	0.0
Prior & Tmt. at RI	43	4.1	23	1.7	4	0.6	33	4.7	5	7.5
Tmt. Only at RI	437	41.5	662	50.0	267	37.8	539	77.4	57	85.1
No Treatment	503	47.7	600	45.4	326	46.2	109	15.7	5	7.5
<b>Total Patients</b>	<b>1054</b>	<b>100.0</b>	<b>1323</b>	<b>100.0</b>	<b>7.6</b>	<b>100.0</b>	<b>696</b>	<b>100.0</b>	<b>67</b>	<b>100.0</b>

**Table 8.6: Number(#) and Relative Proportion(%) of Mouth Cancer patients according to Type of Treatment given(Patients treated only at Reporting Institution) (2001-03)****Males**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>1265</b>	<b>100.0</b>	<b>278</b>	<b>100.0</b>	<b>348</b>	<b>100.0</b>	<b>914</b>	<b>100.0</b>	<b>96</b>	<b>100.0</b>
<b>Specific treatments</b>										
Surgery(S)	467	36.9	29	10.4	17	4.9	49	5.4	5	5.2
Radiotherapy(R)	90	7.1	122	43.9	263	75.6	492	53.8	80	83.3
Chemotherapy(C)	40	3.2	31	11.2	2	0.6	27	3.0	1	1.0
S + R	588	46.5	41	14.7	38	10.9	161	17.6	8	8.3
S + C	5	0.4	4	1.4	0	0.0	4	0.4	1	1.0
R + C	41	3.2	40	14.4	24	6.9	153	16.7	1	1.0
S + R + C	34	2.7	11	4.0	4	1.1	27	3.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
<b>Modality of therapy</b>										
Single	597	47.2	182	65.5	282	81.0	568	62.1	86	89.6
Combination	668	52.8	96	34.5	66	19.0	345	37.7	10	10.4
<b>Type of Any Treatment</b>										
Any Surgery	1094	86.5	85	30.6	59	17.0	241	26.4	14	14.6
Any R	753	59.5	214	77.0	329	94.5	833	91.1	89	92.7
Any C	120	9.5	86	30.9	30	8.6	211	23.1	3	3.1

**Females**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>437</b>	<b>100.0</b>	<b>662</b>	<b>100.0</b>	<b>267</b>	<b>100.0</b>	<b>539</b>	<b>100.0</b>	<b>57</b>	<b>100.0</b>
<b>Specific treatments</b>										
Surgery(S)	156	35.7	71	10.7	9	3.4	37	6.9	1	1.8
Radiotherapy(R)	28	6.4	217	32.8	211	79.0	327	60.7	52	91.2
Chemotherapy(C)	16	3.7	113	17.1	0	0.0	7	1.3	1	1.8
S + R	223	51.0	156	23.6	41	15.4	93	17.3	3	5.3
S + C	3	0.7	12	1.8	0	0.0	2	0.4	0	0.0
R + C	7	1.6	60	9.1	6	2.2	60	11.1	0	0.0
S + R + C	4	0.9	33	5.0	0	0.0	8	1.5	0	0.0
Others	0	0.0	0	0.0	0	0.0	5	0.9	0	0.0
<b>Modality of therapy</b>										
Single	200	45.8	401	60.6	220	82.4	371	68.8	54	94.7
Combination	237	54.2	261	39.4	47	17.6	163	30.2	3	5.3
<b>Type of Any Treatment</b>										
Any Surgery	386	88.3	272	41.1	50	18.7	140	26.0	4	7.0
Any R	262	60.0	466	70.4	258	96.6	488	90.5	55	96.5
Any C	30	6.9	218	32.9	6	2.2	77	14.3	1	1.8

**Table 8.7(a): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease -Mouth Males (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	203	68.8	9	36.0	10	8.9	14	10.8	2	16.7
Radiotherapy ( R )	19	6.4	12	48.0	83	74.1	82	63.1	10	83.3
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	6	4.6	0	0.0
S+R	67	22.7	3	12.0	13	11.6	18	13.8	0	0.0
S+C	0	0.0	0	0.0	0	0.0	1	0.8	0	0.0
R+C	1	0.3	0	0.0	5	4.5	7	5.4	0	0.0
S+R+C	5	1.7	1	4.0	1	0.9	2	1.5	0	0.0
Others	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Treatments</b>	<b>295</b>	<b>100.0</b>	<b>25</b>	<b>100.0</b>	<b>112</b>	<b>100.0</b>	<b>130</b>	<b>100.0</b>	<b>12</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	250	26.6	19	8.1	7	3.0	35	4.5	3	3.6
Radiotherapy ( R )	64	6.8	98	41.9	178	76.1	408	52.5	70	84.3
Chemotherapy ( C )	34	3.6	30	12.8	2	0.9	19	2.4	0	0.0
S+R	517	55.1	37	15.8	25	10.7	142	18.3	8	9.6
S+C	5	0.5	3	1.3	0	0.0	3	0.4	1	1.2
R+C	40	4.3	37	15.8	19	8.1	144	18.5	1	1.2
S+R+C	29	3.1	10	4.3	3	1.3	25	3.2	0	0.0
Others	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Treatments</b>	<b>939</b>	<b>100.0</b>	<b>234</b>	<b>100.0</b>	<b>234</b>	<b>100.0</b>	<b>777</b>	<b>100.0</b>	<b>83</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	2	11.8	1	5.9	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	7	41.2	11	64.7	2	100.0	2	28.6	0	0.0
Chemotherapy ( C )	6	35.3	1	5.9	0	0.0	2	28.6	0	0.0
S+R	2	11.8	1	5.9	0	0.0	1	14.3	0	0.0
S+C	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
R+C	0	0.0	3	17.6	0	0.0	2	28.6	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
<b>All Treatments</b>	<b>17</b>	<b>100.0</b>	<b>17</b>	<b>100.0</b>	<b>2</b>	<b>100.0</b>	<b>7</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
<b>Others</b>										
Surgery ( S )	12	85.7	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	1	50.0	0	0.0	0	0.0	0	0.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0
S+R	2	14.3	0	0.0	0	0.0	0	0.0	0	0.0
S+C	0	0.0	1	50.0	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	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
<b>All Treatments</b>	<b>14</b>	<b>100.0</b>	<b>2</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>1</b>	<b>100.0</b>

**Table 8.7(b): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease - Mouth Females (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	56	60.9	23	42.6	5	8.8	11	15.1	1	25.0
Radiotherapy ( R )	3	3.3	11	20.4	42	73.7	49	67.1	3	75.0
Chemotherapy ( C )	1	1.1	2	3.7	0	0.0	0	0.0	0	0.0
S+R	31	33.7	16	29.6	9	15.8	11	15.1	0	0.0
S+C	0	0.0	1	1.9	0	0.0	0	0.0	0	0.0
R+C	1	1.1	0	0.0	1	1.8	1	1.4	0	0.0
S+R+C	0	0.0	1	1.9	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
<b>All Treatments</b>	<b>92</b>	<b>100.0</b>	<b>54</b>	<b>100.0</b>	<b>57</b>	<b>100.0</b>	<b>73</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	89	27.0	48	8.3	4	1.9	26	5.7	0	0.0
Radiotherapy ( R )	24	7.3	189	32.7	169	80.5	275	60.0	49	92.5
Chemotherapy ( C )	13	3.9	104	18.0	0	0.0	5	1.1	1	1.9
S+R	191	57.9	140	24.2	32	15.2	82	17.9	3	5.7
S+C	3	0.9	11	1.9	0	0.0	2	0.4	0	0.0
R+C	6	1.8	57	9.9	5	2.4	57	12.5	0	0.0
S+R+C	4	1.2	29	5.0	0	0.0	8	1.8	0	0.0
Others	0	0.0	0	0.0	0	0.0	3	0.7	0	0.0
<b>All Treatments</b>	<b>330</b>	<b>100.0</b>	<b>578</b>	<b>100.0</b>	<b>210</b>	<b>100.0</b>	<b>458</b>	<b>100.0</b>	<b>53</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	1	20.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	1	20.0	17	56.7	0	0.0	3	37.5	0	0.0
Chemotherapy ( C )	2	40.0	7	23.3	0	0.0	2	25.0	0	0.0
S+R	1	20.0	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	0	0.0	3	10.0	0	0.0	2	25.0	0	0.0
S+R+C	0	0.0	3	10.0	0	0.0	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	1	12.5	0	0.0
<b>All Treatments</b>	<b>5</b>	<b>100.0</b>	<b>30</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>8</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
<b>Others</b>										
Surgery ( S )	10	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	0	0.0	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	0	0.0	0	0.0	0	0.0	0	0.0	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
<b>All Treatments</b>	<b>10</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>

**Table 8.8(a): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Mouth Males (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	275	93.2	92	31.2	6	2.0	0	0.0	295
Bangalore	13	52.0	16	5.4	1	0.3	0	0.0	25
Chennai	24	21.4	102	34.6	6	2.0	0	0.0	112
Thi'puram	35	26.9	109	36.9	16	5.4	0	0.0	130
Dibrugarh	2	16.7	10	3.4	0	0.0	0	0.0	12
<b>REGIONAL</b>									
Mumbai	801	85.3	850	288.1	108	36.6	0	0.0	939
Bangalore	69	29.5	182	61.7	80	27.1	0	0.0	234
Chennai	35	15.0	225	76.3	24	8.1	0	0.0	234
Thi'puram	205	26.4	719	243.7	191	64.7	1	0.3	777
Dibrugarh	12	14.5	79	26.8	2	0.7	0	0.0	83
<b>DISTANT</b>									
Mumbai	4	23.5	9	3.1	6	2.0	0	0.0	17
Bangalore	2	11.8	15	5.1	4	1.4	0	0.0	17
Chennai	0	0.0	2	0.7	0	0.0	0	0.0	2
Thi'puram	1	14.3	5	1.7	4	1.4	0	0.0	7
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>OTHERS</b>									
Mumbai	14	100.0	2	0.7	0	0.0	0	0.0	14
Bangalore	1	50.0	1	0.3	1	0.3	0	0.0	2
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	0	0.0	1	0.3	0	0.0	1

**Table 8.8(b): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Mouth Females (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	87	94.6	35	38.0	2	2.2	0	0.0	92
Bangalore	41	75.9	28	51.9	4	7.4	0	0.0	54
Chennai	14	24.6	52	91.2	1	1.8	0	0.0	57
Thi'puram	22	30.1	61	83.6	1	1.4	1	1.4	73
Dibrugarh	1	25.0	3	75.0	0	0.0	0	0.0	4
<b>REGIONAL</b>									
Mumbai	287	87.0	225	68.2	26	7.9	0	0.0	330
Bangalore	228	39.4	415	71.8	201	34.8	0	0.0	578
Chennai	36	17.1	206	98.1	5	2.4	0	0.0	210
Thi'puram	118	25.8	422	92.1	72	15.7	3	0.7	458
Dibrugarh	3	5.7	52	98.1	1	1.9	0	0.0	53
<b>DISTANT</b>									
Mumbai	2	40.0	2	40.0	2	40.0	0	0.0	5
Bangalore	3	10.0	23	76.7	13	43.3	0	0.0	30
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	5	62.5	4	50.0	1	12.5	8
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>OTHERS</b>									
Mumbai	10	100.0	0	0.0	0	0.0	0	0.0	10
Bangalore	0	0.0	0	0.0	0	0.0	0	0.0	0
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0

## 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 2001 to 2003 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 showed almost equal percentage of cases with cancer at the base of tongue. Bangalore(62.7%) and Dibrugarh(82.7%) had a higher proportion of base tongue cancer, whereas Thiruvananthapuram(15.9%) had relatively lower proportion.

Figure 9.1 gives the trends in actual number of tongue cancers from 1984 to 2003. A decrease in numbers is seen in Mumbai while a slight increase in numbers is seen in Bangalore.

Table 9.2 and Figure 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).

Table 9.4 gives the distribution of tongue cancer according to the clinical extent of disease. The regional spread of the disease varied from 56.3% in Mumbai to 84.9% in Dibrugarh.

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 (2001-03)**

Registry	Males				Females			
	Total	#	%	R	Total	#	%	R
Mumbai	27078	1845	6.8	3	21121	550	2.6	9
Bangalore	10799	569	5.3	6	12636	142	1.1	>10
Chennai	10866	732	6.7	5	12417	218	1.76	10
Thi'puram	13099	775	5.9	3	11745	324	2.8	7
Dibrugarh	1602	87	5.4	4	910	22	2.4	9

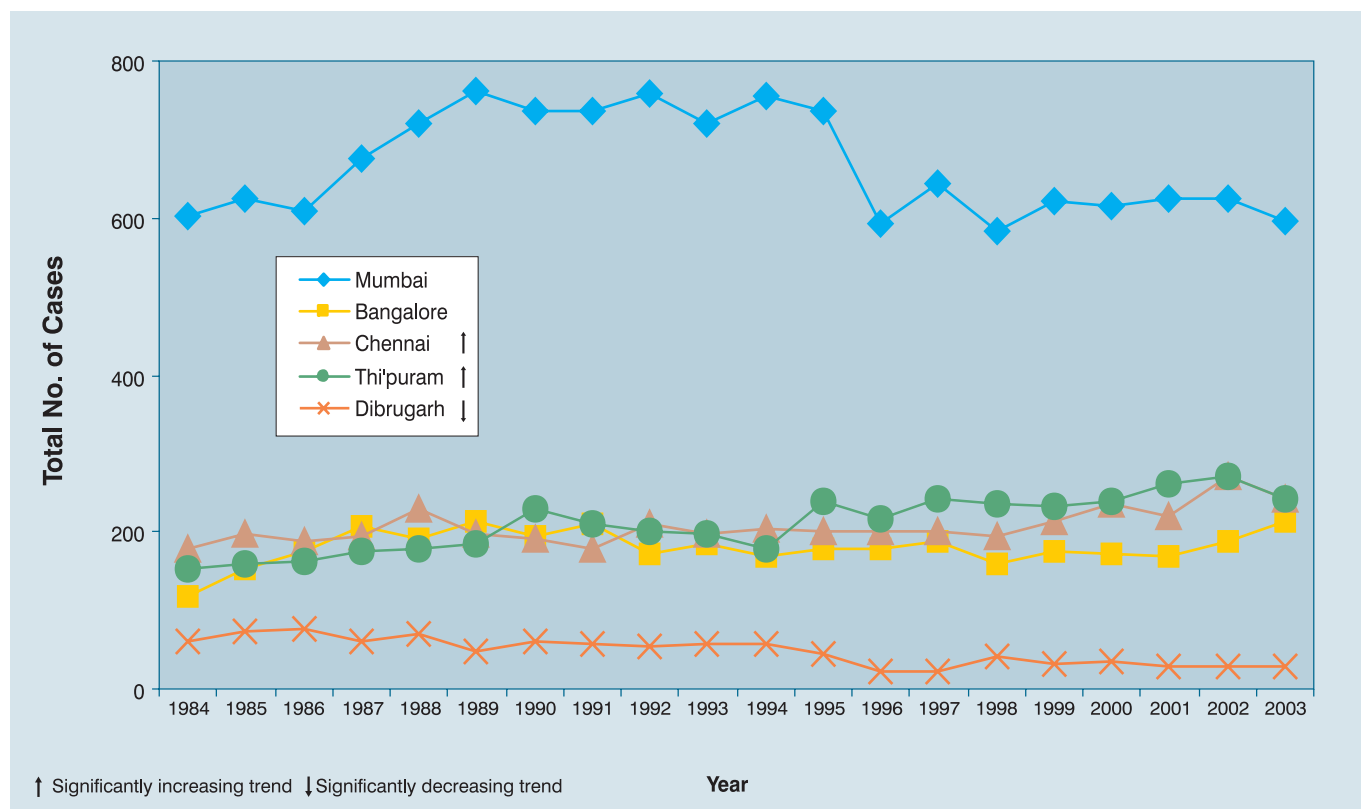
**Table 9.1(b): Number(#) and Relative Proportion(%) of Tongue Cancer patients according to sub-site (2001-2003)**

Sub-Site	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Base of tongue	616	33.4	357	62.7	248	33.9	123	15.9	72	82.8
Rest of tongue	919	49.8	52	9.1	434	59.3	277	35.7	15	17.2
NOS*	310	16.8	160	28.1	50	6.8	375	48.4	0	0.0
<b>Total Tongue</b>	<b>1845</b>	<b>100.0</b>	<b>569</b>	<b>100.0</b>	<b>732</b>	<b>100.0</b>	<b>775</b>	<b>100.0</b>	<b>87</b>	<b>100.0</b>
<b>FEMALES</b>										
Base of tongue	85	15.5	36	25.4	19	8.7	4	1.2	14	63.6
Rest of tongue	368	66.9	29	20.4	180	82.6	131	40.4	7	31.8
NOS*	97	17.6	77	54.2	19	8.7	189	58.3	1	4.6
<b>Total Tongue</b>	<b>550</b>	<b>100.0</b>	<b>142</b>	<b>100.0</b>	<b>218</b>	<b>100.0</b>	<b>324</b>	<b>100.0</b>	<b>22</b>	<b>100.0</b>

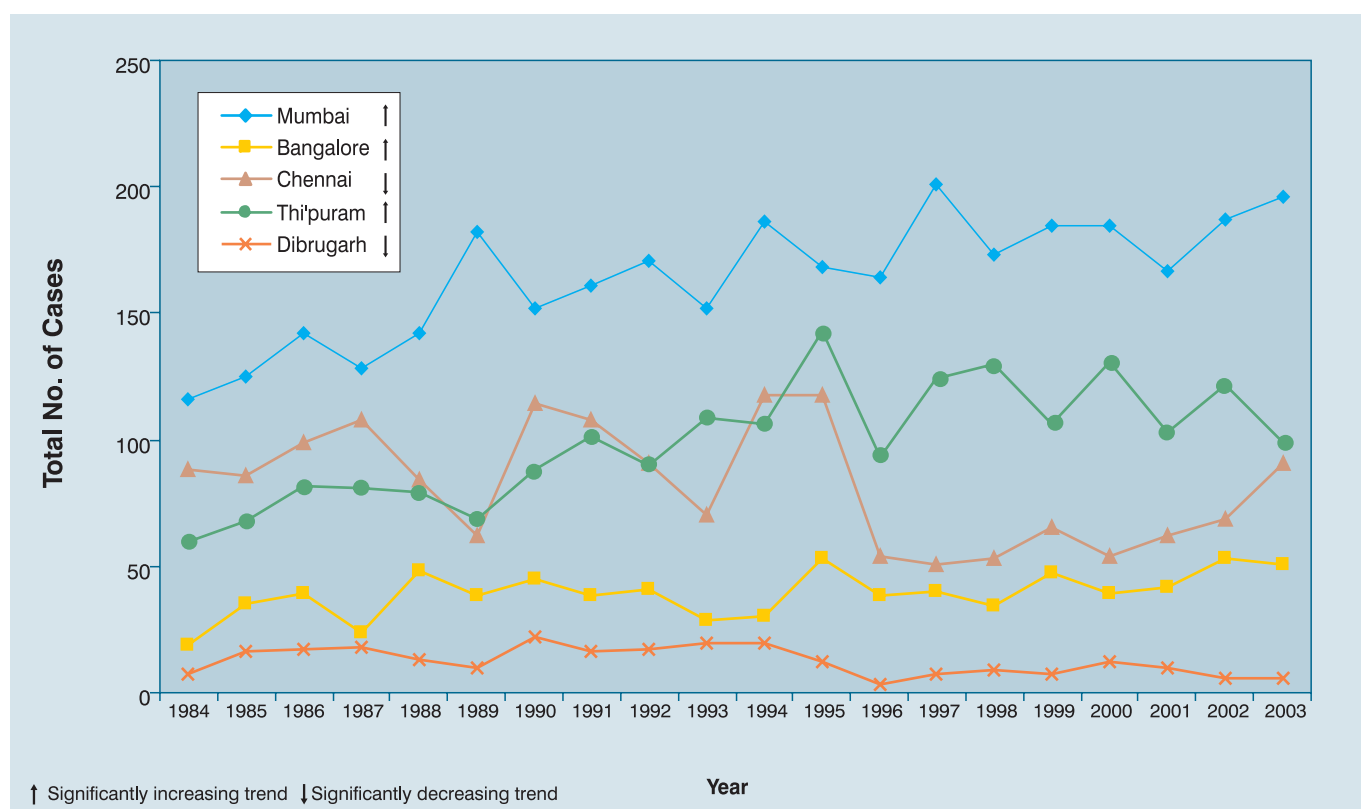
\*NOS = Not Otherwise Specified

**Fig. 9.1: Trends in Actual Numbers - Tongue Cancer**

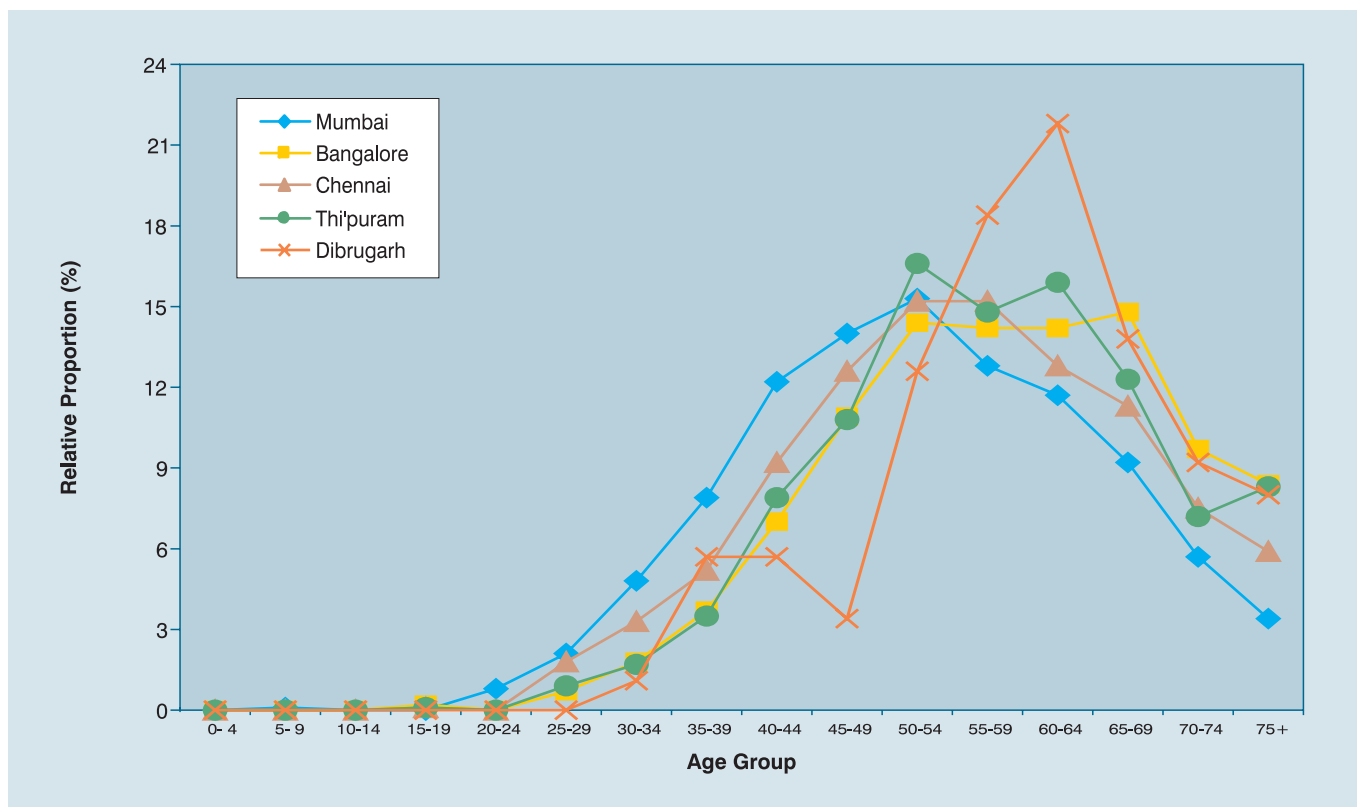
**Males**



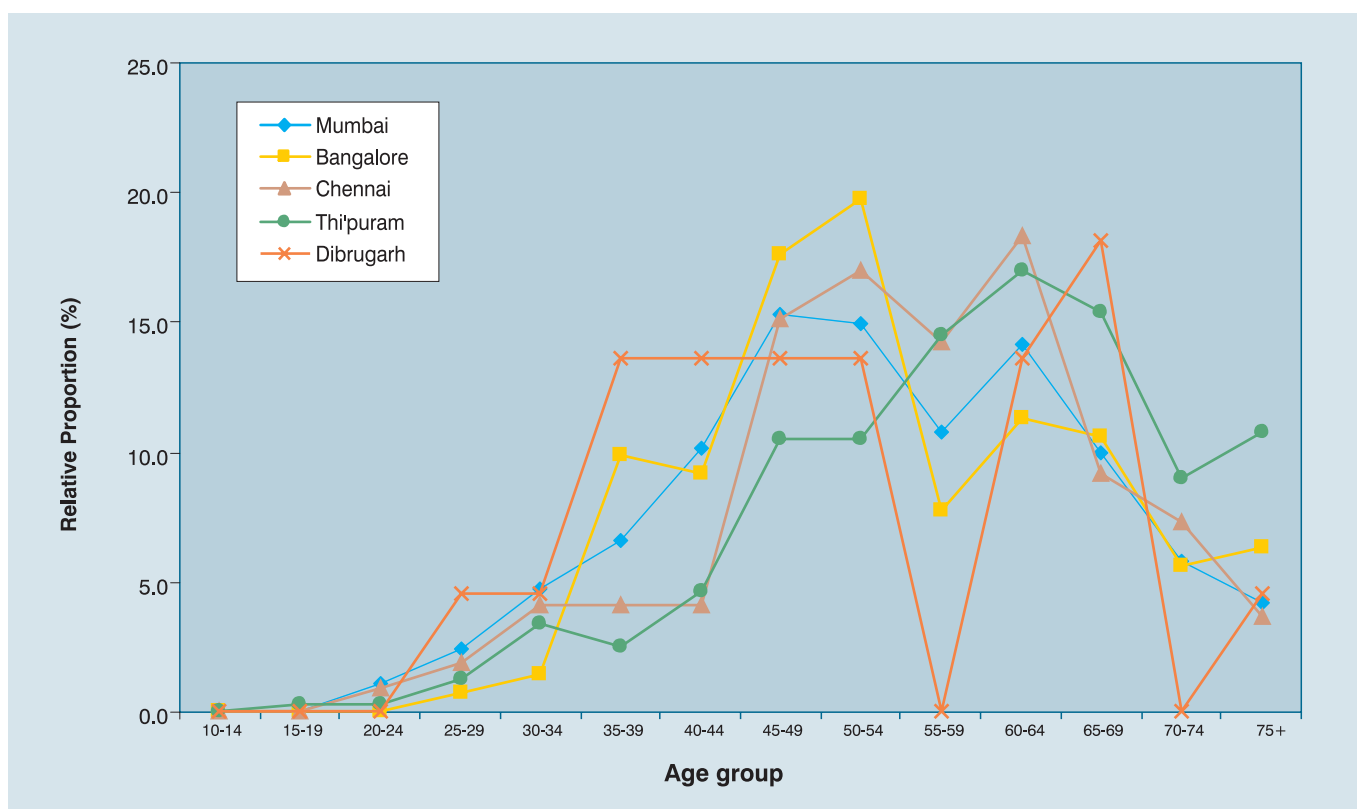
**Females**



**Fig 9.2(a) : Five Year Age Group Distribution - Tongue Cancer - Males (2001-2003)**



**Fig 9.2(b) : Five Year Age Group Distribution - Tongue Cancer - Females (2001-2003)**



**Table 9.2(a): Number(#) and Relative Proportion(%) of tongue cancers according to five year age group (2001-03)****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	1	0.1	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	1	0.1	1	0.1	0	0.0
20-24	14	0.8	0	0.0	0	0.0	0	0.0	0	0.0
25-29	38	2.1	4	0.7	13	1.8	7	0.9	0	0.0
30-34	88	4.8	10	1.8	24	3.3	13	1.7	1	1.1
35-39	146	7.9	21	3.7	38	5.2	27	3.5	5	5.7
40-44	226	12.2	40	7.0	67	9.2	61	7.9	5	5.7
45-49	259	14.0	62	10.9	92	12.6	84	10.8	3	3.4
50-54	282	15.3	82	14.4	111	15.2	129	16.6	11	12.6
55-59	236	12.8	81	14.2	111	15.2	115	14.8	16	18.4
60-64	216	11.7	81	14.2	94	12.8	123	15.9	19	21.8
65-69	170	9.2	84	14.8	83	11.3	95	12.3	12	13.8
70-74	106	5.7	55	9.7	55	7.5	56	7.2	8	9.2
75+	63	3.4	48	8.4	43	5.9	64	8.3	7	8.0
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>1845</b>	<b>100.0</b>	<b>569</b>	<b>100.0</b>	<b>732</b>	<b>100.0</b>	<b>775</b>	<b>100.0</b>	<b>87</b>	<b>100.0</b>
Mean		52.4		58.0		55.2		57.2		59.2
SD		12.38		11.75		12.18		11.52		10.82

**Table 9.2(b): Number(#) and Relative Proportion(%) of tongue cancers according to five year age group (2001-03)****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	1	0.3	0	0.0
20-24	6	1.1	0	0.0	2	0.9	1	0.3	0	0.0
25-29	13	2.4	1	0.7	4	1.8	4	1.2	1	4.5
30-34	26	4.7	2	1.4	9	4.1	11	3.4	1	4.5
35-39	36	6.5	14	9.9	9	4.1	8	2.5	3	13.6
40-44	56	10.2	13	9.2	9	4.1	15	4.6	3	13.6
45-49	84	15.3	25	17.6	33	15.1	34	10.5	3	13.6
50-54	82	14.9	28	19.7	37	17.0	34	10.5	3	13.6
55-59	59	10.7	11	7.7	31	14.2	47	14.5	0	0.0
60-64	78	14.2	16	11.3	40	18.3	55	17.0	3	13.6
65-69	55	10.0	15	10.6	20	9.2	50	15.4	4	18.2
70-74	32	5.8	8	5.6	16	7.3	29	9.0	0	0.0
75+	23	4.2	9	6.3	8	3.7	35	10.8	1	4.5
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>550</b>	<b>100.0</b>	<b>142</b>	<b>100.0</b>	<b>218</b>	<b>100.0</b>	<b>324</b>	<b>100.0</b>	<b>22</b>	<b>100.0</b>
Mean		53.0		54.1		55.0		58.7		51.1
S.D		12.64		11.85		11.81		12.43		13.28

**Table 9.3 : Number(#) and Relative Proportion(%) of tongue cancers based on different Methods of Diagnosis (2001-03)**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
<b>Males</b>										
Mumbai	1724	93.4	6	0.3	0	0.0	115	6.2	1845	100.0
Bangalore	556	97.7	8	1.4	1	0.2	4	0.7	569	100.0
Chennai	535	73.1	196	26.8	1	0.1	0	0.0	732	100.0
Thi'puram	759	97.9	16	2.1	0	0.0	0	0.0	775	100.0
Dibrugarh	86	98.9	1	1.1	0	0.0	0	0.0	87	100.0
<b>Females</b>										
Mumbai	516	93.8	1	0.2	0	0.0	33	6.0	550	100.0
Bangalore	138	97.2	3	2.1	0	0.0	1	0.7	142	100.0
Chennai	152	69.7	66	30.3	0	0.0	0	0.0	218	100.0
Thi'puram	315	97.2	9	2.8	0	0.0	0	0.0	324	100.0
Dibrugarh	21	95.5	1	4.5	0	0.0	0	0.0	22	100.0

**Table 9.4 : Number(#) and Relative Proportion(%) of tongue cancer patients according to the Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03)**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
<b>Males</b>												
Mumbai	511	32.9	875	56.3	1386	89.2	55	3.5	112	7.2	1553	100.0
Bangalore	39	7.2	447	82.5	486	89.7	47	8.7	9	1.7	542	100.0
Chennai	123	20.9	465	78.9	588	99.8	1	0.2	0	0.0	589	100.0
Thi'puram	168	23.6	536	75.3	704	98.9	8	1.1	0	0.0	712	100.0
Dibrugarh	12	14.0	73	84.9	85	98.8	0	0.0	1	1.2	86	100.0
<b>Females</b>												
Mumbai	193	40.8	228	48.2	421	89.0	20	4.2	32	6.8	473	100.0
Bangalore	14	10.4	110	81.5	124	91.9	7	5.2	4	3.0	135	100.0
Chennai	56	30.6	127	69.4	183	100.0	0	0.0	0	0.0	183	100.0
Thi'puram	80	27.2	206	70.1	286	97.3	8	2.7	0	0.0	294	100.0
Dibrugarh	5	22.7	17	77.3	22	100.0	0	0.0	0	0.0	22	100.0

**Table 9.5: Number(#) and Relative Proportion(%) of Tongue cancer patients according to Broad Groups of Treatment(Tmt) (2001-03)**

	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Prior Tmt. Only	207	11.2	21	3.7	136	18.6	21	2.7	0	0.0
Prior & Tmt. at RI	85	4.6	6	1.1	7	1.0	42	5.4	1	1.1
Tmt. Only at RI	610	33.1	303	53.3	258	35.2	575	74.2	81	93.1
No Treatment	943	51.1	239	42.0	331	45.2	137	17.7	5	5.7
Total Patients	1845	100.0	569	100.0	732	100.0	775	100.0	87	100.0
<b>FEMALES</b>										
Prior Tmt. Only	50	9.1	3	2.1	29	13.3	10	3.1	0	0.0
Prior & Tmt. at RI	27	4.9	4	2.8	6	2.8	20	6.2	0	0.0
Tmt. only at RI	210	38.2	80	56.3	84	38.5	244	75.3	22	100.0
No Treatment	263	47.8	55	38.7	99	45.4	50	15.4	0	0.0
Total patients	550	100.0	142	100.0	218	100.0	324	100.0	22	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) (2001-03)****Males**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>610</b>	<b>100.0</b>	<b>303</b>	<b>100.0</b>	<b>258</b>	<b>100.0</b>	<b>575</b>	<b>100.0</b>	<b>81</b>	<b>100.0</b>
<b>Specific treatments</b>										
Surgery(S)	183	30.0	28	9.2	10	3.9	124	21.6	0	0.0
Radiotherapy(R)	137	22.5	169	55.8	193	74.8	152	26.4	78	96.3
Chemotherapy(C)	11	1.8	9	3.0	0	0.0	27	4.7	0	0.0
S + R	203	33.3	37	12.2	44	17.1	142	24.7	1	1.2
S + C	1	0.2	4	1.3	0	0.0	3	0.5	1	1.2
R + C	65	10.7	54	17.8	6	2.3	97	16.9	1	1.2
S + R + C	10	1.6	2	0.7	5	1.9	27	4.7	0	0.0
Others	0	0.0	0	0.0	0	0.0	3	0.5	0	0.0
<b>Modality of therapy *</b>										
Single	331	54.3	206	68.0	203	78.7	303	52.7	78	96.3
Combination	279	45.7	97	32.0	55	21.3	269	46.8	3	3.7
<b>Type of Any Treatment</b>										
Any Surgery	397	65.1	71	23.4	59	22.9	296	51.5	2	2.5
Any R	415	68.0	262	86.5	248	96.1	418	72.7	80	98.8
Any C	87	14.3	69	22.8	11	4.3	154	26.8	2	2.5

**Females**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>210</b>	<b>100.0</b>	<b>80</b>	<b>100.0</b>	<b>84</b>	<b>100.0</b>	<b>244</b>	<b>100.0</b>	<b>22</b>	<b>100.0</b>
<b>Specific treatments</b>										
Surgery(S)	86	41.0	17	21.3	3	3.6	68	27.9	0	0.0
Radiotherapy(R)	19	9.0	40	50.0	60	71.4	41	16.8	0	0.0
Chemotherapy(C)	3	1.4	2	2.5	0	0.0	21	8.6	0	0.0
S + R	91	43.3	12	15.0	19	22.6	83	34.0	0	0.0
S + C	0	0.0	3	3.8	0	0.0	2	0.8	0	0.0
R + C	10	4.8	5	6.3	2	2.4	17	7.0	0	0.0
S + R + C	1	0.5	1	1.3	0	0.0	11	4.5	0	0.0
Others	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
<b>Modality of therapy*</b>										
Single	108	51.4	59	73.8	63	75.0	130	53.3	0	0.0
Combination	102	48.6	21	26.3	21	25.0	113	46.3	0	0.0
<b>Type of Any Treatment</b>										
Any Surgery	178	84.8	33	41.3	22	26.2	164	67.2	0	0.0
Any R	121	57.6	58	72.5	81	96.4	152	62.3	22	100.0
Any C	14	6.7	11	13.8	2	2.4	51	20.9	0	0.0

\*Excludes specific treatment classified as 'Others'

**Table 9.7 (a): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease - Tongue Males (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	131	59.3	6	26.1	8	8.4	52	37.4	0	0.0
Radiotherapy ( R )	14	6.3	5	21.7	57	60.0	36	25.9	11	100.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	6	4.3	0	0.0
S+R	73	33.0	6	26.1	27	28.4	33	23.7	0	0.0
S+C	0	0.0	1	4.3	0	0.0	1	0.7	0	0.0
R+C	1	0.5	5	21.7	2	2.1	8	5.8	0	0.0
S+R+C	2	0.9	0	0.0	1	1.1	2	1.4	0	0.0
Others	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0
<b>All Treatments</b>	<b>221</b>	<b>100.0</b>	<b>23</b>	<b>100.0</b>	<b>95</b>	<b>100.0</b>	<b>139</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	49	13.0	22	8.5	2	1.2	72	16.7	0	0.0
Radiotherapy ( R )	118	31.4	145	56.2	136	83.4	114	26.5	67	97.1
Chemotherapy ( C )	9	2.4	8	3.1	0	0.0	21	4.9	0	0.0
S+R	129	34.3	31	12.0	17	10.4	109	25.3	1	1.4
S+C	1	0.3	2	0.8	0	0.0	2	0.5	0	0.0
R+C	62	16.5	48	18.6	4	2.5	86	20.0	1	1.4
S+R+C	8	2.1	2	0.8	4	2.5	25	5.8	0	0.0
Others	0	0.0	0	0.0	0	0.0	2	0.5	0	0.0
<b>All Treatments</b>	<b>376</b>	<b>100.0</b>	<b>258</b>	<b>100.0</b>	<b>163</b>	<b>100.0</b>	<b>431</b>	<b>100.0</b>	<b>69</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	5	50.0	19	86.4	0	0.0	2	40.0	0	0.0
Chemotherapy ( C )	2	20.0	1	4.5	0	0.0	0	0.0	0	0.0
S+R	1	10.0	0	0.0	0	0.0	0	0.0	0	0.0
S+C	0	0.0	1	4.5	0	0.0	0	0.0	0	0.0
R+C	2	20.0	1	4.5	0	0.0	3	60.0	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
<b>All Treatments</b>	<b>10</b>	<b>100.0</b>	<b>22</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>5</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
<b>Others</b>										
Surgery ( S )	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	19	86.4	0	0.0	0	0.0	0	0.0
Chemotherapy ( C )	0	0.0	1	4.5	0	0.0	0	0.0	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	1	4.5	0	0.0	0	0.0	1	0.0
R+C	0	0.0	1	4.5	0	0.0	0	0.0	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
<b>All Treatments</b>	<b>3</b>	<b>100.0</b>	<b>22</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>



**Table 9.7(b): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease -Tongue Females (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	58	61.1	6	46.2	2	4.2	33	48.5	0	0.0
Radiotherapy ( R )	3	3.2	3	23.1	34	70.8	13	19.1	5	100.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	2	2.9	0	0.0
S+R	34	35.8	1	7.7	11	22.9	17	25.0	0	0.0
S+C	0	0.0	1	7.7	0	0.0	0	0.0	0	0.0
R+C	0	0.0	1	7.7	1	2.1	2	2.9	0	0.0
S+R+C	0	0.0	1	7.7	0	0.0	1	1.5	0	0.0
Others	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Treatments</b>	<b>95</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>	<b>68</b>	<b>100.0</b>	<b>5</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	25	23.1	11	16.9	1	2.8	35	20.5	0	0.0
Radiotherapy ( R )	15	13.9	36	55.4	26	72.2	28	16.4	17	100.0
Chemotherapy ( C )	2	1.9	2	3.1	0	0.0	18	10.5	0	0.0
S+R	56	51.9	11	16.9	8	22.2	65	38.0	0	0.0
S+C	0	0.0	2	3.1	0	0.0	1	0.6	0	0.0
R+C	9	8.3	3	4.6	1	2.8	14	8.2	0	0.0
S+R+C	1	0.9	0	0.0	0	0.0	10	5.8	0	0.0
Others	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Treatments</b>	<b>108</b>	<b>100.0</b>	<b>65</b>	<b>100.0</b>	<b>36</b>	<b>100.0</b>	<b>171</b>	<b>100.0</b>	<b>17</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	1	25.0	1	100.0	0	0.0	0	0.0	0	0.0
Chemotherapy ( C )	1	25.0	0	0.0	0	0.0	1	20.0	0	0.0
S+R	1	25.0	0	0.0	0	0.0	1	20.0	0	0.0
S+C	0	0.0	0	0.0	0	0.0	1	20.0	0	0.0
R+C	1	25.0	0	0.0	0	0.0	1	20.0	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	1	20.0	0	0.0
<b>All Treatments</b>	<b>4</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>5</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
<b>Others</b>										
Surgery ( S )	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	0	0.0	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	0	0.0	1	100.0	0	0.0	0	0.0	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
<b>All Treatments</b>	<b>3</b>	<b>100.0</b>	<b>1</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>

**Table 9.8(a): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Tongue - Males (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	206	93.2	90	40.7	3	1.4	0	0.0	221
Bangalore	13	56.5	16	69.6	6	26.1	0	0.0	23
Chennai	36	37.9	87	91.6	3	3.2	0	0.0	95
Thi'puram	88	63.3	79	56.8	17	12.2	1	0.7	139
Dibrugarh	0	0.0	11	100.0	0	0.0	0	0.0	11
<b>REGIONAL</b>									
Mumbai	187	49.7	317	84.3	80	21.3	0	0.0	376
Bangalore	57	22.1	226	87.6	60	23.3	0	0.0	258
Chennai	23	14.1	161	98.8	8	4.9	0	0.0	163
Thi'puram	208	48.3	334	77.5	134	31.1	2	0.5	431
Dibrugarh	1	1.4	69	100.0	1	1.4	0	0.0	69
<b>DISTANT</b>									
Mumbai	1	10.0	8	80.0	4	40.0	0	0.0	10
Bangalore	1	4.5	20	90.9	3	13.6	0	0.0	22
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	5	100.0	3	60.0	0	0.0	5
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>OTHERS</b>									
Mumbai	3	100.0	0	0.0	0	0.0	0	0.0	3
Bangalore	0	0.0	0	0.0	0	0.0	0	0.0	22
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	1	0.0	0	0.0	1	0.0	0	0.0	0

**Table 9.8(b): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Tongue - Females (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	92	96.8	37	38.9	0	0.0	0	0.0	95
Bangalore	9	69.2	6	46.2	3	23.1	0	0.0	13
Chennai	13	27.1	46	95.8	1	2.1	0	0.0	48
Thi'puram	51	75.0	33	48.5	5	7.4	0	0.0	68
Dibrugarh	0	0.0	5	100.0	0	0.0	0	0.0	5
<b>REGIONAL</b>									
Mumbai	82	75.9	81	75.0	12	11.1	0	0.0	108
Bangalore	24	36.9	50	76.9	7	10.8	0	0.0	65
Chennai	9	25.0	35	97.2	1	2.8	0	0.0	36
Thi'puram	111	64.9	117	68.4	43	25.1	0	0.0	171
Dibrugarh	0	0.0	17	100.0	0	0.0	0	0.0	17
<b>DISTANT</b>									
Mumbai	1	25.0	3	75.0	2	50.0	0	0.0	4
Bangalore	0	0.0	1	100.0	1	100.0	0	0.0	1
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	2	40.0	2	40.0	3	60.0	1	20.0	5
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>OTHERS</b>									
Mumbai	3	100.0	0	0.0	0	0.0	0	0.0	3
Bangalore	0	0.0	1	100.0	0	0.0	0	0.0	1
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
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 2001 to 2003 is given in Table 10.1(a). Cancer of the oesophagus ranked as the first five leading sites in all registries in both sexes, except in females in Thiruvananthapuram. Oesophageal cancers were the leading site among females in Dibrugarh.

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 2003.

Table 10.2 and Figure 10.2 give the distribution of cancer of oesophagus according to five year age group.

The predominant form of diagnosis was through microscopic examination (Table 10.3) followed by the category "others" which represents endoscopic diagnosis.

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 (2001-03)**

Registry	Males				Females			
	Total	#	%	R	Total	#	%	R
Mumbai	27078	1302	4.8	5	21121	707	3.3	5
Bangalore	10799	976	9.0	2	12636	779	6.2	4
Chennai	10866	739	6.8	4	12417	441	3.6	5
Thi'puram	13099	656	5.0	5	11745	176	1.5	>10
Dibrugarh	1602	261	16.3	2	910	143	15.7	1

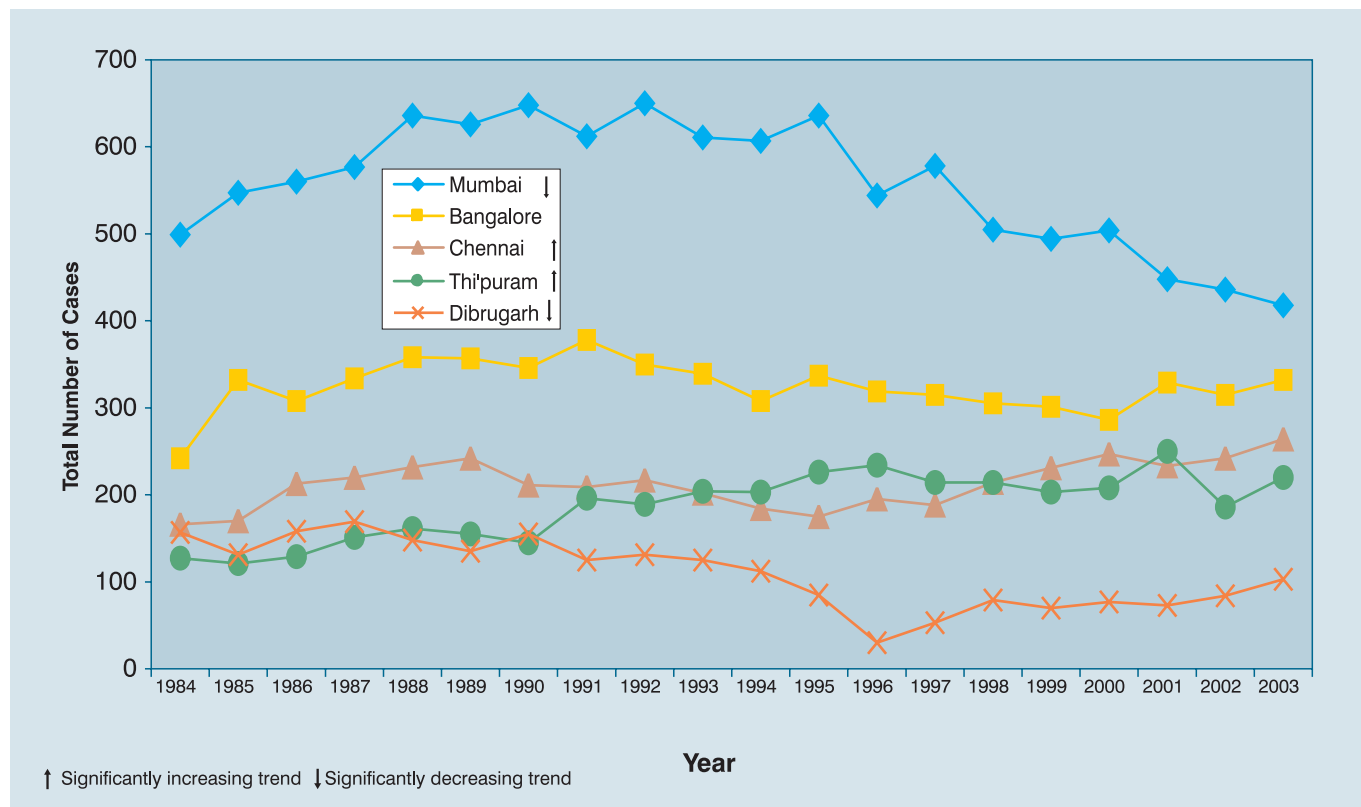
**Table 10.1(b): Cancer of Oesophagus - Number(#) and Relative Proportion(%) according to sub-site (2001-2003)**

Sub-site	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Cervical-upper 3rd	167	12.8	118	12.1	97	13.1	51	7.8	40	15.4
Thoracic-middle 3rd	444	34.1	361	37.0	289	39.1	191	29.1	130	50.0
Abdominal-lower 3rd	393	30.2	241	24.7	211	28.6	227	34.6	50	19.2
Overlap of subsite	0	0.0	26	2.7	53	7.2	15	2.3	6	2.3
NOS*	298	22.9	230	23.6	89	12.0	172	26.2	34	13.1
<b>Total Oesophagus</b>	<b>1302</b>	<b>100.0</b>	<b>976</b>	<b>100.0</b>	<b>739</b>	<b>100.0</b>	<b>656</b>	<b>100.0</b>	<b>260</b>	<b>100.0</b>
<b>FEMALES</b>										
Cervical-upper 3rd	83	11.7	97	12.5	73	16.6	17	9.7	23	16.1
Thoracic-middle 3rd	263	37.2	313	40.2	174	39.5	69	39.2	69	48.3
Abdominal-lower 3rd	195	27.6	172	22.1	118	26.8	47	26.7	29	20.3
Overlap of subsite	0	0.0	24	3.1	22	5.0	1	0.6	4	2.8
NOS*	166	23.5	173	22.2	54	12.2	42	23.9	18	12.6
<b>Total Oesophagus</b>	<b>707</b>	<b>100.0</b>	<b>779</b>	<b>100.0</b>	<b>441</b>	<b>100.0</b>	<b>176</b>	<b>100.0</b>	<b>143</b>	<b>100.0</b>

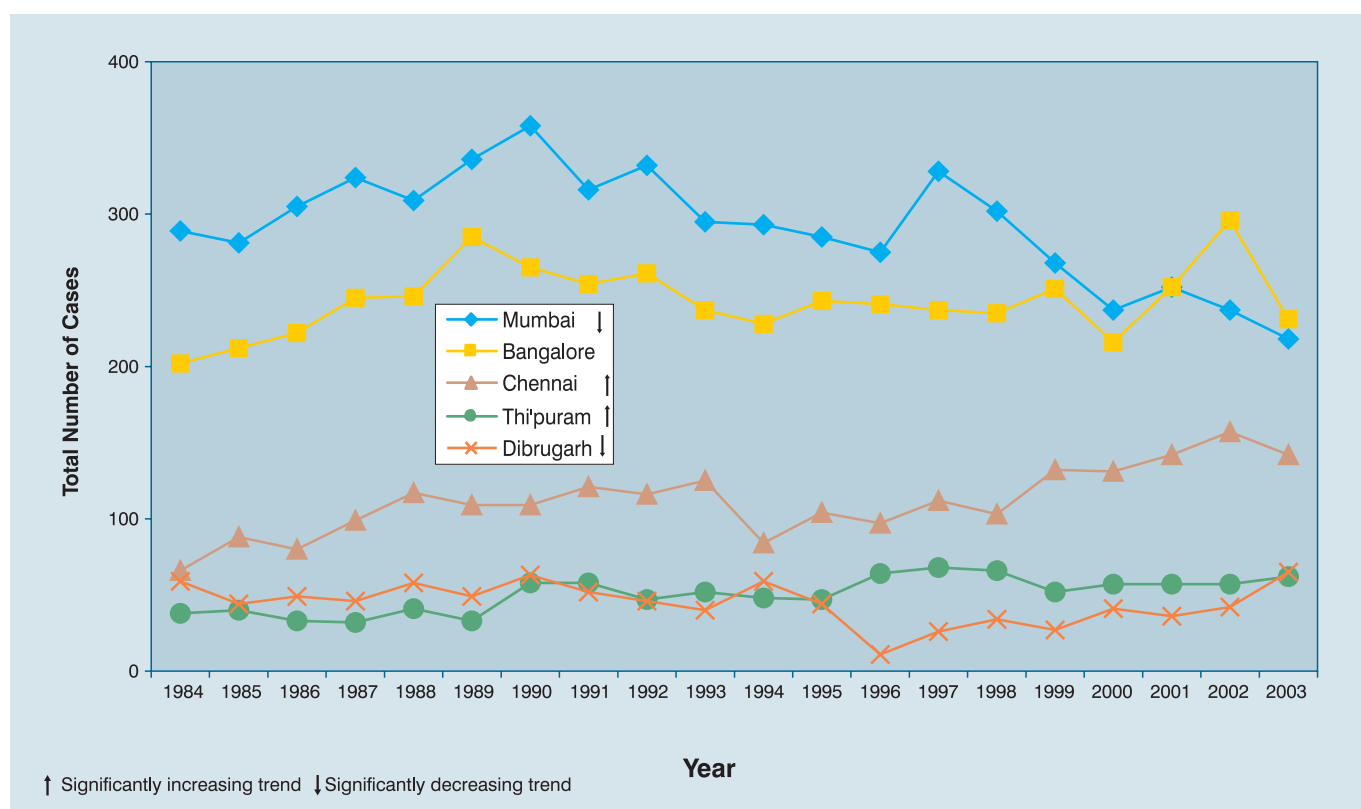
\*NOS = Not Otherwise Specified

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

**Males**



**Females**



**Table 10.2: Number(#) and Relative Proportion(%) of oesophageal cancers according to five year age group (2001-03)****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	0	0.0	1	0.1	0	0.0	0	0.0
20-24	2	0.2	0	0.0	2	0.3	1	0.2	0	0.0
25-29	3	0.2	4	0.4	9	1.2	5	0.8	0	0.0
30-34	15	1.2	12	1.2	14	1.9	5	0.8	8	3.1
35-39	53	4.1	30	3.1	17	2.3	10	1.5	10	3.8
40-44	92	7.1	42	4.3	42	5.7	21	3.2	11	4.2
45-49	145	11.1	91	9.3	73	9.9	52	7.9	27	10.3
50-54	231	17.7	153	15.7	107	14.5	90	13.7	42	16.1
55-59	208	16.0	146	15.0	129	17.4	111	16.9	46	17.6
60-64	209	16.1	174	17.8	132	17.8	108	16.5	41	15.7
65-69	168	12.9	147	15.1	97	13.1	114	17.4	32	12.3
70-74	107	8.2	104	10.7	74	10	78	11.9	24	9.2
75+	69	5.3	73	7.5	42	5.7	61	9.3	20	7.7
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>1302</b>	<b>100.0</b>	<b>976</b>	<b>100.0</b>	<b>739</b>	<b>100.0</b>	<b>656</b>	<b>100.0</b>	<b>261</b>	<b>100.0</b>

Mean 57.1 59.1 57.8 60.5 57.9

SD 10.75 10.75 11.22 10.56 11.18

**Females**

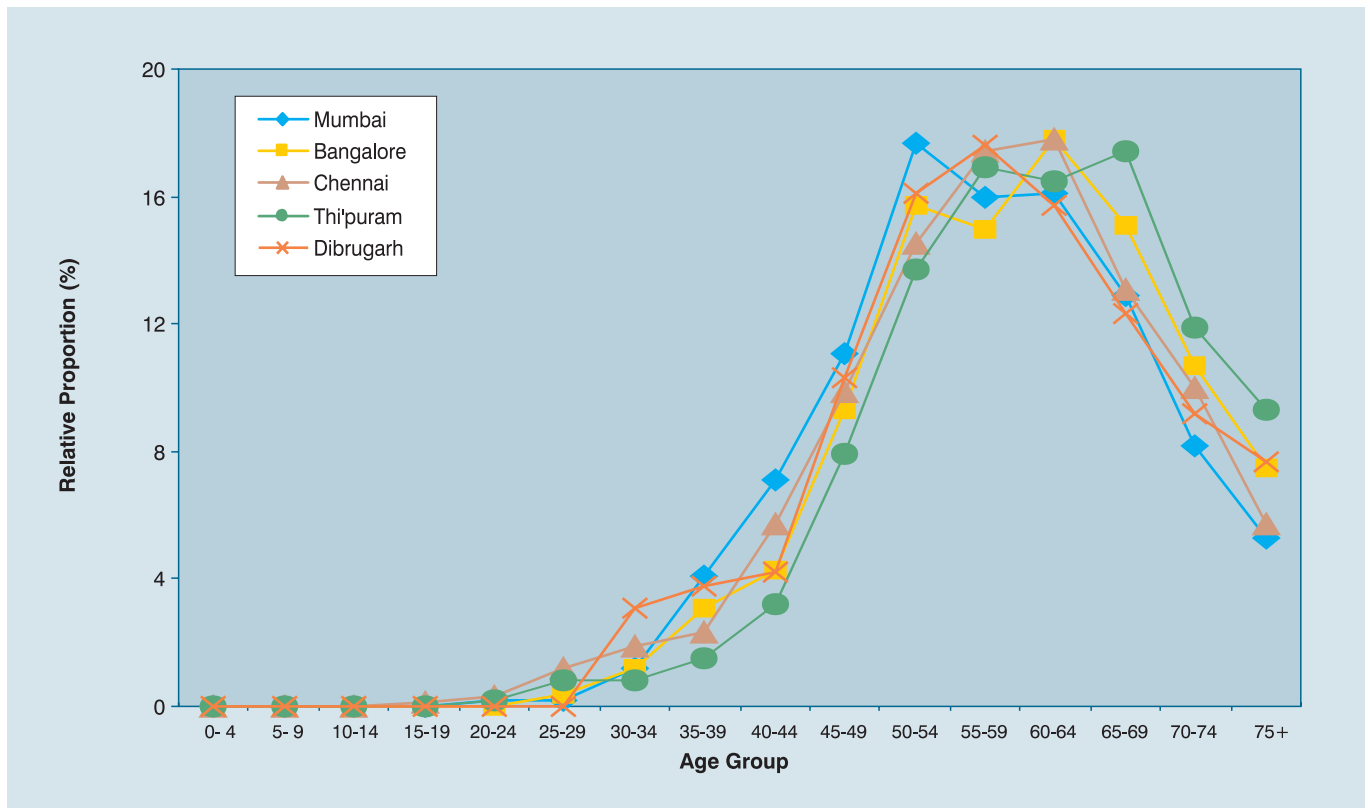
Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
0-4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5-9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10-14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15-19	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
20-24	1	0.1	2	0.3	0	0.0	1	0.6	1	0.7
25-29	6	0.9	5	0.6	11	2.5	2	1.1	1	0.7
30-34	15	2.1	11	1.4	10	2.3	1	0.6	1	0.7
35-39	38	5.4	26	3.3	24	5.5	5	2.8	8	5.6
40-44	57	8.0	54	6.9	30	6.8	12	6.8	12	8.4
45-49	89	12.5	102	13.1	62	14.1	22	12.5	26	18.2
50-54	109	15.4	111	14.2	71	16.1	16	9.1	24	16.8
55-59	109	15.4	113	14.5	57	12.9	20	11.4	20	14.0
60-64	97	13.7	140	18.0	59	13.4	24	13.6	21	14.7
65-69	95	13.4	87	11.2	62	14.1	39	22.2	16	11.2
70-74	56	7.9	75	9.6	32	7.3	16	9.1	9	6.3
75+	34	4.8	53	6.8	23	5.2	18	10.2	4	2.8
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>707</b>	<b>100.0</b>	<b>779</b>	<b>100.0</b>	<b>441</b>	<b>100.0</b>	<b>176</b>	<b>100.0</b>	<b>143</b>	<b>100.0</b>

Mean 56.0 57.5 55.6 59.3 54.7

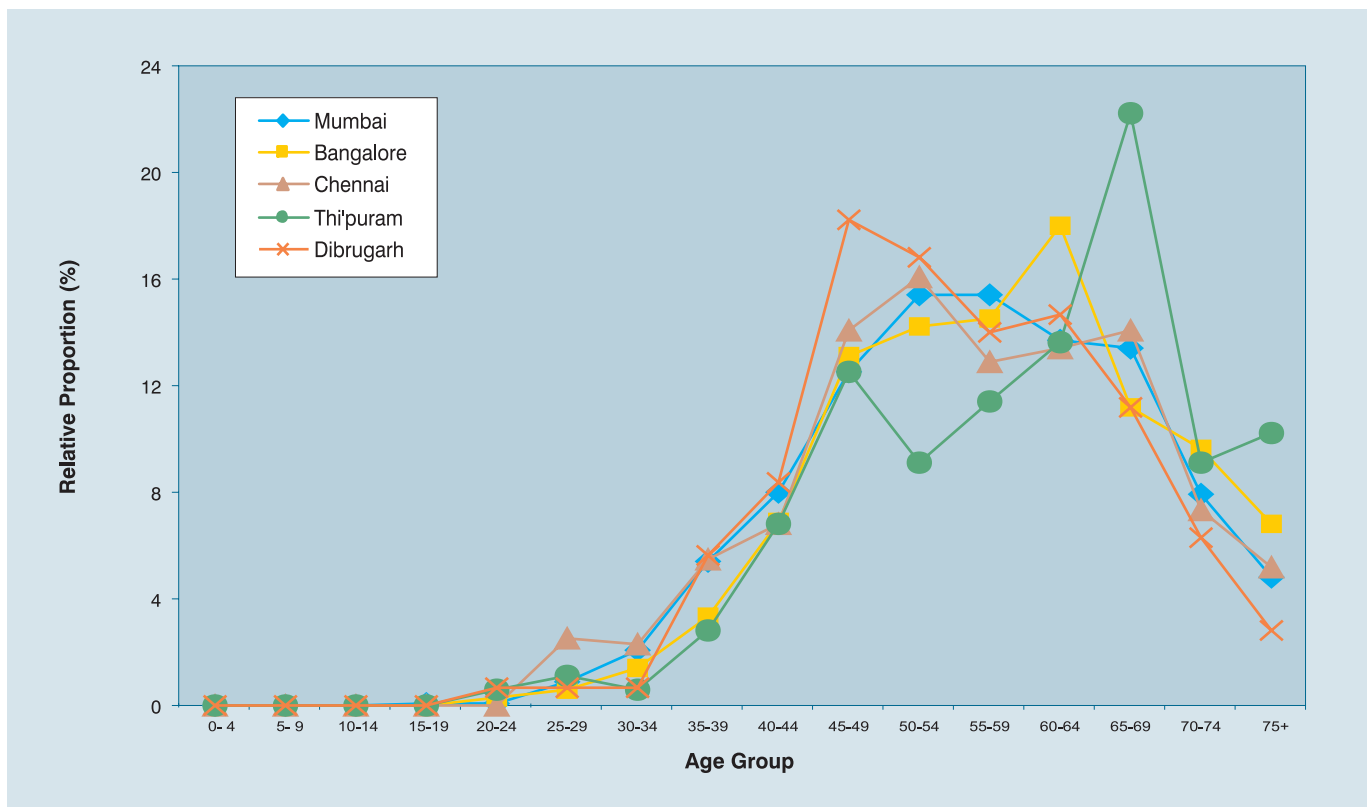
SD 11.57 11.30 12.01 11.99 10.85

**Fig 10.2 : Five Year Age Group Distribution - Oesophageal Cancer (2001-2003)**

**Males**



**Females**





**Table 10.3: Number(#) and Relative Proportion(%) of Oesophageal cancers based on different Methods of Diagnosis (2001-03)**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
<b>Males</b>										
Mumbai	1198	92.0	0	0.0	4	0.3	100	7.7	1302	100.0
Bangalore	943	96.6	6	0.6	9	0.9	18	1.8	976	100.0
Chennai	648	87.7	15	2.0	25	3.4	51	6.9	739	100.0
Thi'puram	631	96.2	2	0.3	11	1.7	12	1.8	656	100.0
Dibrugarh	237	91.2	0	0.0	17	6.5	6	2.3	260	100.0
<b>Females</b>										
Mumbai	674	95.3	0	0.0	0	0.0	33	4.7	707	100.0
Bangalore	755	96.9	4	0.5	6	0.8	14	1.8	779	100.0
Chennai	386	87.5	15	3.4	13	2.9	27	6.1	441	100.0
Thi'puram	167	94.9	1	0.6	5	2.8	3	1.7	176	100.0
Dibrugarh	128	89.5	0	0.0	12	8.4	3	2.1	143	100.0

**Table 10.4: Number(#) and Relative Proportion(%) of oesophageal cancer patients according to the Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03)**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
<b>Males</b>												
Mumbai	551	46.5	310	26.1	861	72.6	241	20.3	84	7.1	1186	100.0
Bangalore	95	10.2	674	72.1	769	82.2	111	11.9	55	5.9	935	100.0
Chennai	2	0.3	537	79.7	539	80.0	135	20.0	0	0.0	674	100.0
Thi'puram	220	35.1	311	49.7	531	84.8	95	15.2	0	0.0	626	100.0
Dibrugarh	16	6.2	195	75.9	211	82.1	9	3.5	37	14.4	257	100.0
<b>Females</b>												
Mumbai	322	48.1	176	26.3	498	74.4	117	17.5	54	8.1	669	100.0
Bangalore	72	9.5	569	74.8	641	84.2	62	8.1	58	7.6	761	100.0
Chennai	0	0.0	328	81.0	328	81.0	77	19.0	0	0.0	405	100.0
Thi'puram	55	32.5	90	53.3	145	85.8	24	14.2	0	0.0	169	100.0
Dibrugarh	11	7.7	112	78.3	123	86.0	5	3.5	15	10.5	143	100.0

**Table 10.5: Number(#) and Relative Proportion(%) of oesophageal cancer patients according to Broad Groups of Treatment(Tmt) (2001-03)**

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Prior Tmt. Only	89	6.8	31	3.2	63	8.5	13	2.0	1	0.4
Prior & Tmt. at RI	27	2.1	10	1.0	2	0.3	17	2.6	2	0.8
Tmt. Only at RI	398	30.6	416	42.6	142	19.2	461	70.3	240	92.3
No Treatment	788	60.5	519	53.2	532	72.0	165	25.2	17	6.5
<b>Total Patients</b>	<b>1302</b>	<b>100.0</b>	<b>976</b>	<b>100.0</b>	<b>739</b>	<b>100.0</b>	<b>656</b>	<b>100.0</b>	<b>260</b>	<b>100.0</b>
<b>FEMALES</b>										
Prior Tmt. Only	25	3.5	13	1.7	36	8.2	2	1.1	0	0.0
Prior & Tmt. at RI	13	1.8	5	0.6	0	0.0	5	2.8	0	0.0
Tmt. Only at RI	233	33.0	358	46.0	91	20.6	139	79.0	132	92.3
No Treatment	436	61.7	403	51.7	314	71.2	30	17.0	11	7.7
<b>Total Patients</b>	<b>707</b>	<b>100.0</b>	<b>779</b>	<b>100.0</b>	<b>441</b>	<b>100.0</b>	<b>176</b>	<b>100.0</b>	<b>143</b>	<b>100.0</b>

**Table 10.6: Number(#) and Relative Proportion(%) of Oesophageal Cancer patients according to Type of Treatment given (Patients treated only at Reporting Institution) (2001-03)****Males**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>398</b>	<b>100.0</b>	<b>416</b>	<b>100.0</b>	<b>142</b>	<b>100.0</b>	<b>461</b>	<b>100.0</b>	<b>240</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery(S)	123	30.9	59	14.2	40	28.2	10	2.2	0	0.0
Radiotherapy(R)	69	17.3	212	51.0	82	57.7	283	61.4	233	97.1
Chemotherapy(C)	56	14.1	7	1.7	1	0.7	14	3.0	5	2.1
S + R	19	4.8	26	6.3	6	4.2	3	0.7	1	0.4
S + C	35	8.8	11	2.6	0	0.0	2	0.4	0	0.0
R + C	86	21.6	87	20.9	13	9.2	137	29.7	1	0.4
S + R + C	10	2.5	14	3.4	0	0.0	4	0.9	0	0.0
Others	0	0.0	0	0.0	0	0.0	8	1.7	0	0.0
<b>Modality of therapy</b>										
Single	248	62.3	278	66.8	123	86.6	307	66.6	238	99.2
Combination	150	37.7	138	33.2	19	13.4	146	31.7	2	0.8
<b>Type of Any Treatment</b>										
Any Surgery	187	47.0	110	26.4	46	32.4	19	4.1	1	0.4
Any R	184	46.2	339	81.5	101	71.1	427	92.6	235	97.9
Any C	187	47.0	119	28.6	14	9.9	157	34.1	6	2.5

**Females**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>233</b>	<b>100.0</b>	<b>358</b>	<b>100.0</b>	<b>91</b>	<b>100.0</b>	<b>139</b>	<b>100.0</b>	<b>132</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery(S)	89	38.2	41	11.5	19	20.9	2	1.4	2	1.5
Radiotherapy(R)	34	14.6	186	52.0	55	60.4	74	53.2	126	95.5
Chemotherapy(C)	25	10.7	7	2.0	2	2.2	6	4.3	3	2.3
S + R	11	4.7	30	8.4	6	6.6	1	0.7	0	0.0
S + C	28	12.0	14	3.9	0	0.0	1	0.7	0	0.0
R + C	42	18.0	77	21.5	9	9.9	51	36.7	1	0.8
S + R + C	4	1.7	3	0.8	0	0.0	1	0.7	0	0.0
Others	0	0.0	0	0.0	0	0.0	3	2.2	0	0.0
<b>Modality of therapy</b>										
Single	148	63.5	234	65.4	76	83.5	82	59.0	131	99.2
Combination	85	36.5	124	34.6	15	16.5	54	38.8	1	0.8
<b>Type of Any Treatment</b>										
Any Surgery	132	56.7	88	24.6	25	27.5	5	3.6	2	1.5
Any R	91	39.1	296	82.7	70	76.9	127	91.4	127	96.2
Any C	99	42.5	101	28.2	11	12.1	59	42.4	4	3.0

**Table 10.7 (a): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease -Oesophagus - Males (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	74	41.3	7	17.5	0	0.0	3	1.8	0	0.0
Radiotherapy ( R )	31	17.3	22	55.0	2	100.0	91	54.8	16	100.0
Chemotherapy ( C )	8	4.5	3	7.5	0	0.0	1	0.6	0	0.0
S+R	12	6.7	1	2.5	0	0.0	0	0.0	0	0.0
S+C	12	6.7	0	0.0	0	0.0	0	0.0	0	0.0
R+C	38	21.2	7	17.5	0	0.0	69	41.6	0	0.0
S+R+C	4	2.2	0	0.0	0	0.0	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	2	1.2	0	0.0
All Treatments	179	100.0	40	100.0	2	100.0	166	100.0	16	100.0
<b>Regional</b>										
Surgery ( S )	42	29.4	51	15.0	40	30.3	7	3.1	0	0.0
Radiotherapy ( R )	20	14.0	165	48.5	74	56.1	137	60.4	182	96.8
Chemotherapy ( C )	23	16.1	4	1.2	0	0.0	12	5.3	4	2.1
S+R	7	4.9	23	6.8	6	4.5	3	1.3	1	0.5
S+C	19	13.3	11	3.2	0	0.0	2	0.9	0	0.0
R+C	27	18.9	72	21.2	12	9.1	58	25.6	1	0.5
S+R+C	5	3.5	14	4.1	0	0.0	4	1.8	0	0.0
Others	0	0.0	0	0.0	0	0.0	4	1.8	0	0.0
All Treatments	143	100.0	340	100.0	132	100.0	227	100.0	188	100.0
<b>Distant</b>										
Surgery ( S )	4	5.5	1	3.1	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	18	24.7	22	68.8	6	75.0	55	80.9	8	100.0
Chemotherapy ( C )	25	34.2	0	0.0	1	12.5	1	1.5	0	0.0
S+R	0	0.0	2	6.3	0	0.0	0	0.0	0	0.0
S+C	4	5.5	0	0.0	0	0.0	0	0.0	0	0.0
R+C	21	28.8	7	21.9	1	12.5	10	14.7	0	0.0
S+R+C	1	1.4	0	0.0	0	0.0	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	2	2.9	0	0.0
All Treatments	73	100.0	32	100.0	8	100.0	68	100.0	8	100.0
<b>Others</b>										
Surgery ( S )	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	3	75.0	0	0.0	0	0.0	27	96.4
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	0	0.0	1	3.6
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	0	0.0	1	25.0	0	0.0	0	0.0	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	3	100.0	4	100.0	0	0.0	0	0.0	28	100.0

**Table 10.7(b): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease - Oesophagus - Females (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	60	55.6	7	18.9	0	0.0	1	2.1	0	0.0
Radiotherapy ( R )	15	13.9	13	35.1	0	0.0	22	45.8	11	100.0
Chemotherapy ( C )	4	3.7	1	2.7	0	0.0	1	2.1	0	0.0
S+R	3	2.8	4	10.8	0	0.0	0	0.0	0	0.0
S+C	10	9.3	1	2.7	0	0.0	0	0.0	0	0.0
R+C	15	13.9	11	29.7	0	0.0	21	43.8	0	0.0
S+R+C	1	0.9	0	0.0	0	0.0	1	2.1	0	0.0
Others	0	0.0	0	0.0	0	0.0	2	4.2	0	0.0
<b>All Treatments</b>	<b>108</b>	<b>100.0</b>	<b>37</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>48</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	25	29.8	34	11.7	17	20.5	0	0.0	2	1.9
Radiotherapy ( R )	8	9.5	151	51.9	51	61.4	38	54.3	99	94.3
Chemotherapy ( C )	13	15.5	4	1.4	1	1.2	3	4.3	3	2.9
S+R	8	9.5	24	8.2	6	7.2	1	1.4	0	0.0
S+C	15	17.9	13	4.5	0	0.0	1	1.4	0	0.0
R+C	14	16.7	62	21.3	8	9.6	26	37.1	1	1.0
S+R+C	1	1.2	3	1.0	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
<b>All Treatments</b>	<b>84</b>	<b>100.0</b>	<b>291</b>	<b>100.0</b>	<b>83</b>	<b>100.0</b>	<b>70</b>	<b>100.0</b>	<b>105</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	3	8.1	0	0.0	2	25.0	1	4.8	0	0.0
Radiotherapy ( R )	11	29.7	19	76.0	4	50.0	14	66.7	3	100.0
Chemotherapy ( C )	7	18.9	2	8.0	1	12.5	2	9.5	0	0.0
S+R	0	0.0	2	8.0	0	0.0	0	0.0	0	0.0
S+C	3	8.1	0	0.0	0	0.0	0	0.0	0	0.0
R+C	12	32.4	2	8.0	1	12.5	4	19.0	0	0.0
S+R+C	1	2.7	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
<b>All Treatments</b>	<b>37</b>	<b>100.0</b>	<b>25</b>	<b>100.0</b>	<b>8</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>	<b>3</b>	<b>100.0</b>
<b>Others</b>										
Surgery ( S )	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	3	60.0	0	0.0	0	0.0	13	100.0
Chemotherapy ( C )	1	25.0	0	0.0	0	0.0	0	0.0	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	1	25.0	2	40.0	0	0.0	0	0.0	0	0.0
S+R+C	1	25.0	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
<b>All Treatments</b>	<b>4</b>	<b>100.0</b>	<b>5</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>13</b>	<b>100.0</b>

**Table 10.8(a): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Oesophagus - Males (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total Patients
	#	%	#	%	#	%	#	%	
<b>LOCALISED</b>									
Mumbai	102	57.0	85	47.5	62	34.6	0	0.0	179
Bangalore	8	20.0	30	75.0	10	25.0	0	0.0	40
Chennai	0	0.0	2	100.0	0	0.0	0	0.0	2
Thi'puram	3	1.8	160	96.4	70	42.2	2	1.2	166
Dibrugarh	0	0.0	16	100.0	0	0.0	0	0.0	16
<b>REGIONAL</b>									
Mumbai	73	51.1	59	41.3	74	51.8	0	0.0	143
Bangalore	99	29.1	274	80.6	101	29.7	0	0.0	340
Chennai	46	34.9	92	69.7	12	9.1	0	0.0	132
Thi'puram	16	7.05	202	89.0	76	33.5	4	1.8	227
Dibrugarh	1	0.5	184	97.9	5	2.7	0	0.0	188
<b>DISTANT</b>									
Mumbai	9	12.3	40	54.8	51	69.9	0	0.0	73
Bangalore	3	9.4	31	96.9	7	21.9	0	0.0	32
Chennai	0	0.0	7	87.5	2	25.0	0	0.0	8
Thi'puram	0	0.0	65	95.6	11	16.2	2	2.9	68
Dibrugarh	0	0.0	8	100.0	0	0.0	0	0.0	8
<b>OTHERS</b>									
Mumbai	3	100.0	0	0.0	0	0.0	0	0.0	3
Bangalore	0	0.0	4	100.0	1	25.0	0	0.0	4
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	27	96.4	1	3.6	0	0.0	28

**Table 10.8(b): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Oesophagus Females (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total Patients
	#	%	#	%	#	%	#	%	
<b>LOCALISED</b>									
Mumbai	74	68.5	34	31.5	30	27.8	0	0.0	108
Bangalore	12	32.4	28	75.7	13	35.4	0	0.0	37
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	2	4.2	44	91.7	23	47.9	2	4.2	48
Dibrugarh	0	0.0	11	100.0	0	0.0	0	0.0	11
<b>REGIONAL</b>									
Mumbai	49	58.3	31	36.9	43	51.2	0	0.0	84
Bangalore	74	25.4	240	82.5	82	28.2	0	0.0	291
Chennai	23	27.7	65	78.3	9	10.8	0	0.0	83
Thi'puram	2	2.9	65	92.9	30	42.9	1	1.4	70
Dibrugarh	2	1.9	100	95.2	4	3.8	0	0.0	105
<b>DISTANT</b>									
Mumbai	7	18.9	24	64.9	23	62.2	0	0.0	37
Bangalore	2	8.0	23	92.0	4	16.0	0	0.0	25
Chennai	2	25.0	5	62.5	2	25.0	0	0.0	8
Thi'puram	1	4.8	18	85.7	6	28.6	0	0.0	21
Dibrugarh	0	0.0	3	100.0	0	0.0	0	0.0	3
<b>OTHERS</b>									
Mumbai	2	50.0	2	50.0	3	75.0	0	0.0	4
Bangalore	0	0.0	5	100.0	2	40.0	0	0.0	5
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	13	100.0	0	0.0	0	0.0	13

# Chapter 11

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

Cancer of the lung in males was the leading site of cancer in Thiruvananthapuram accounting for 13.6% of all cancers in males (Table 11.1).

Figure 11.1 gives the trends in actual numbers of lung cancers from 1984 to 2003. A rising trend was observed in registries of Mumbai, Thiruvananthapuram and Chennai.

Table 11.2 and Figure 11.2 give the five year age distribution of lung cancers. The mean age varied from 57.5 in Mumbai to 62.4 in Dibrugarh.

Table 11.3 gives the number and relative proportion according to the different methods of diagnosis. In the registries of Mumbai, Bangalore and Dibrugarh the percentage of microscopic confirmation was more than 90% while in Thiruvananthapuram (84.2%) and Chennai (73.0%) it was relatively lower.

The number and relative proportion of lung cancers according to the clinical extent of disease is given in Table 11.4. In the registries of Mumbai and Thiruvananthapuram a relatively higher percentage of distant cases were found.

Table 11.5 gives the number and relative proportion according to the broad groups of treatment. The percentage of cases treated only at RI varied from 18.8% in Chennai to 72.9% in Dibrugarh.

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

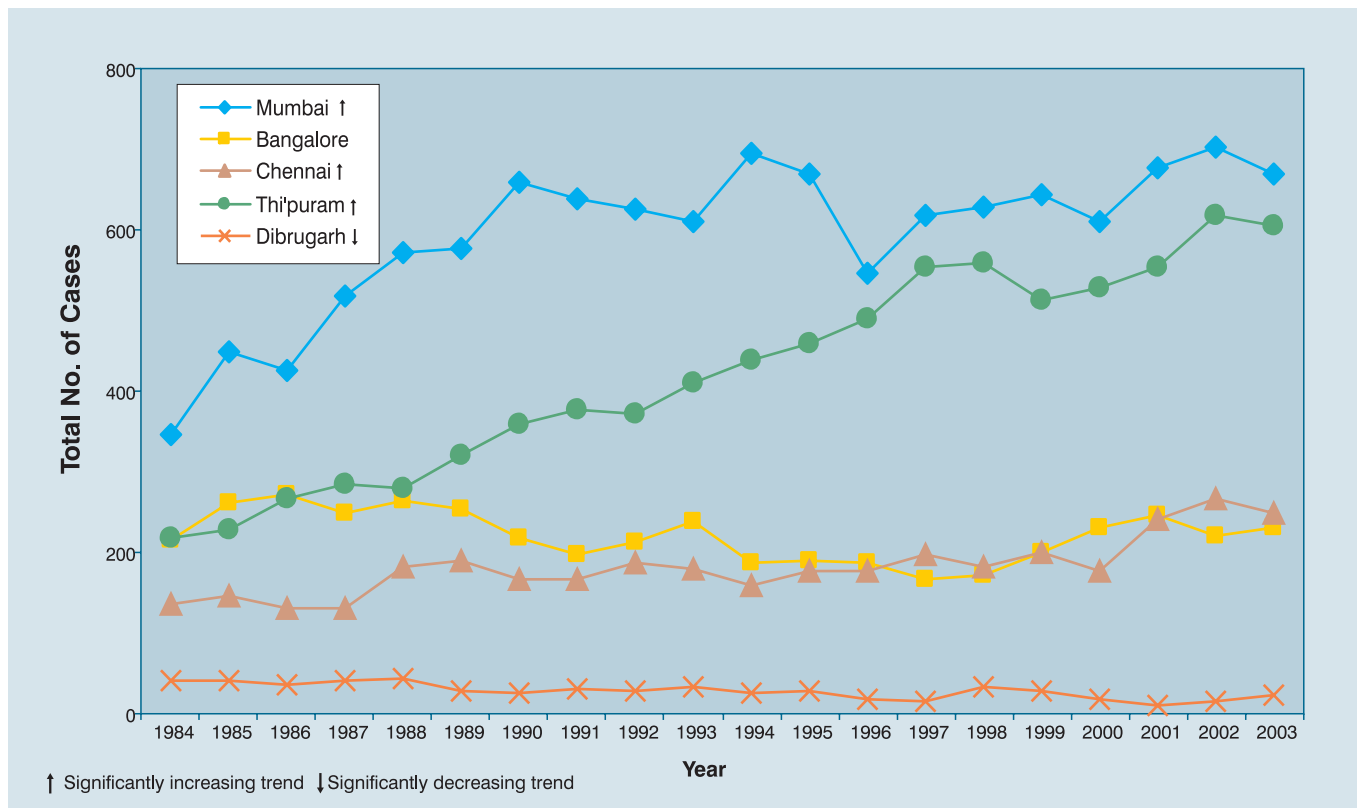
**Table 11.1: Number(#), Relative Proportion(%) and Rank(R) of cancers of the Lung (2001-03)**

Registry	Males				Females			
	Total	#	%	R	Total	#	%	R
Mumbai	27078	2048	7.6	2	21121	518	2.5	10
Bangalore	10799	697	6.5	3	12636	155	1.2	>10
Chennai	10866	755	6.9	3	12417	196	1.6	>10
Thi'puram	13099	1776	13.6	1	11745	246	2.1	>10
Dibrugarh	1602	48	3	8	910	12	1.3	>10

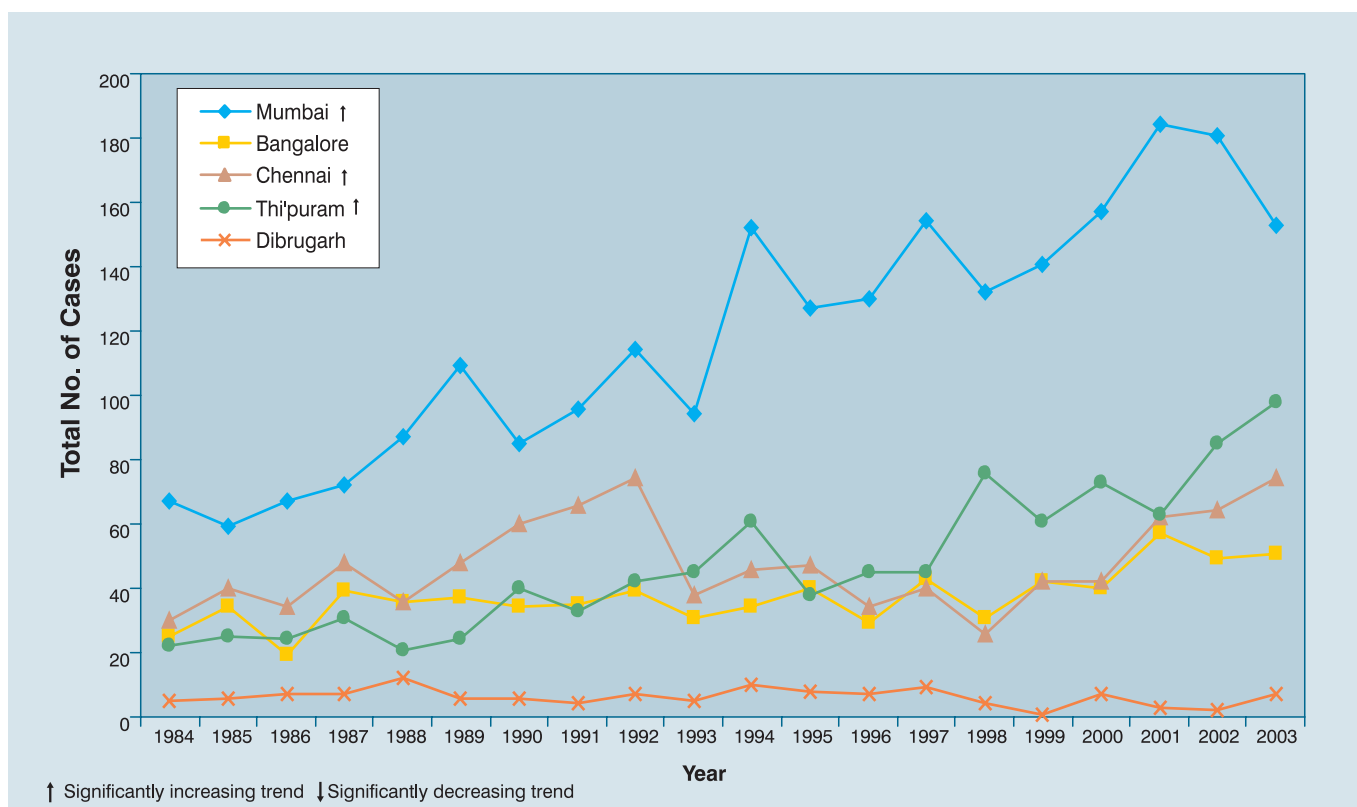


**Fig. 11.1: Trends in Actual Numbers - Lung Cancer (2001-03)**

**Males**



**Females**



**Table 11.2(a) : Number(#) and Relative Proportion(%) of Lung cancers according to five year age group (2001-03)****Males**

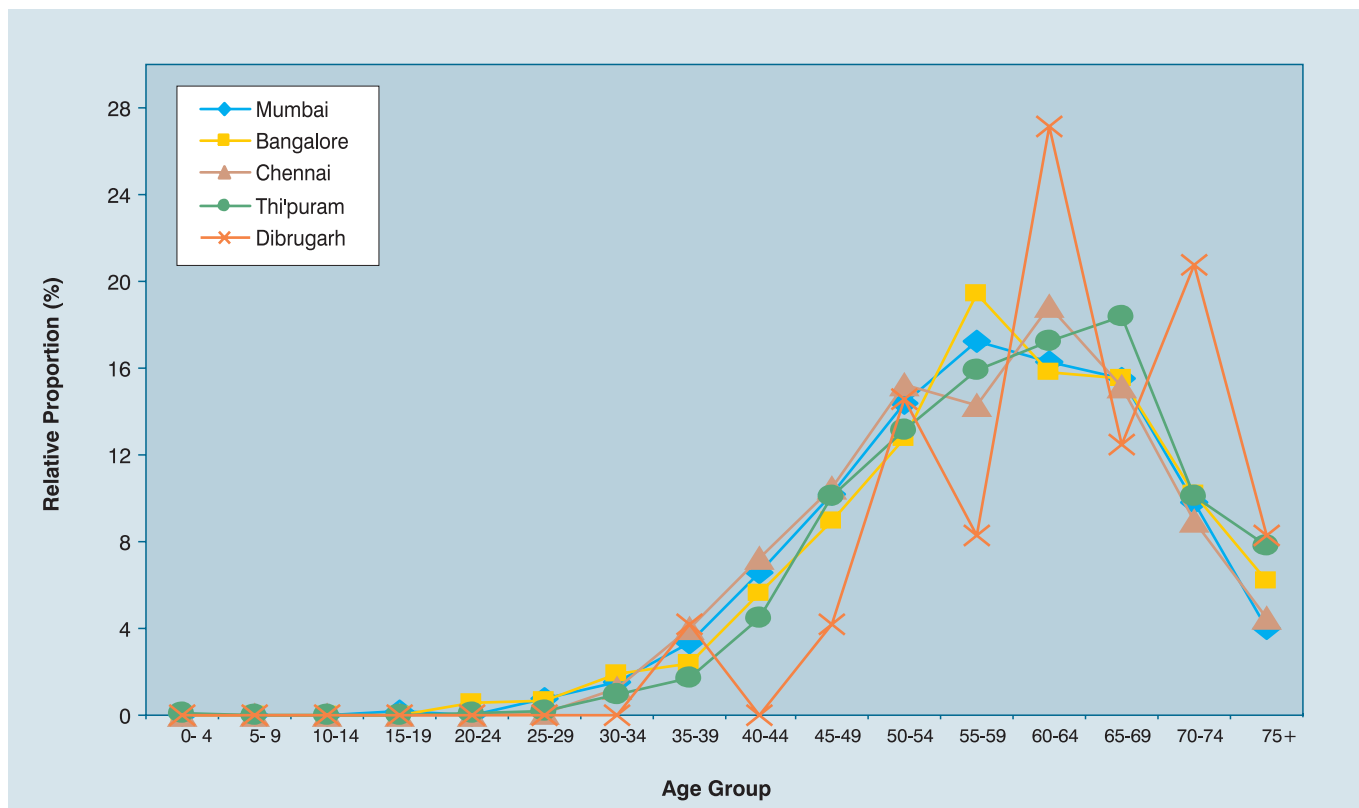
Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
0-4	1	0.0	0	0.0	0	0.0	1	0.1	0	0.0
5-9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10-14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15-19	5	0.2	0	0.0	0	0.0	0	0.0	0	0.0
20-24	1	0.0	4	0.6	0	0.0	1	0.1	0	0.0
25-29	17	0.8	5	0.7	1	0.1	3	0.2	0	0.0
30-34	30	1.5	13	1.9	9	1.2	17	1.0	0	0.0
35-39	68	3.3	17	2.4	30	4.0	31	1.7	2	4.2
40-44	135	6.6	39	5.6	54	7.2	80	4.5	0	0.0
45-49	209	10.2	63	9.0	79	10.5	180	10.1	2	4.2
50-54	294	14.4	89	12.8	115	15.2	232	13.1	7	14.6
55-59	353	17.2	135	19.4	108	14.3	282	15.9	4	8.3
60-64	334	16.3	110	15.8	143	18.9	305	17.2	13	27.1
65-69	318	15.5	108	15.5	114	15.1	327	18.4	6	12.5
70-74	201	9.8	71	10.2	68	9.0	179	10.1	10	20.8
75+	82	4.0	43	6.2	34	4.5	138	7.8	4	8.3
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>2048</b>	<b>100.0</b>	<b>697</b>	<b>100.0</b>	<b>755</b>	<b>100.0</b>	<b>1776</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>
<b>Mean</b>		57.5		58.3		57.7		59.7		62.4
<b>SD</b>		11.04		11.18		10.61		10.46		9.73

**Females**

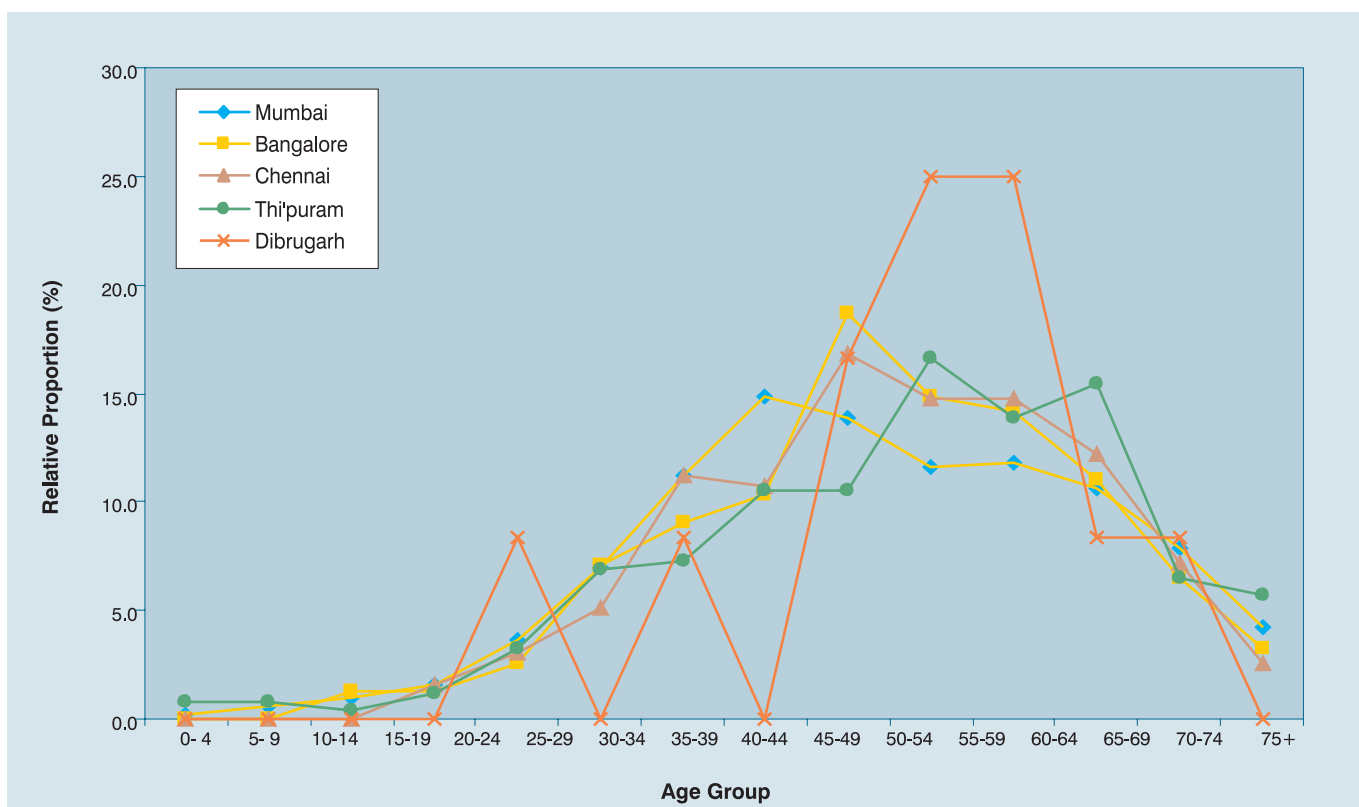
Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
0-4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5-9	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10-14	1	0.2	0	0.0	0	0.0	2	0.8	0	0.0
15-19	3	0.6	0	0.0	0	0.0	2	0.8	0	0.0
20-24	5	1.0	2	1.3	0	0.0	1	0.4	0	0.0
25-29	8	1.5	2	1.3	3	1.5	3	1.2	0	0.0
30-34	19	3.7	4	2.6	6	3.1	8	3.3	1	8.3
35-39	36	6.9	11	7.1	10	5.1	17	6.9	0	0.0
40-44	58	11.2	14	9.0	22	11.2	18	7.3	1	8.3
45-49	77	14.9	16	10.3	21	10.7	26	10.6	0	0.0
50-54	72	13.9	29	18.7	33	16.8	26	10.6	2	16.7
55-59	60	11.6	23	14.8	29	14.8	41	16.7	3	25.0
60-64	61	11.8	22	14.2	29	14.8	34	13.8	3	25.0
65-69	55	10.6	17	11.0	24	12.2	38	15.4	1	8.3
70-74	41	7.9	10	6.5	14	7.1	16	6.5	1	8.3
75+	22	4.2	5	3.2	5	2.6	14	5.7	0	0.0
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>518</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>	<b>196</b>	<b>100.0</b>	<b>246</b>	<b>100.0</b>	<b>12</b>	<b>100.0</b>
<b>Mean</b>		53.4		54.2		54.7		55.2		56.2
<b>S.D</b>		13.01		11.89		11.42		13.42		10.37

**Fig 11.2 : Five Year Age Group Distribution - Lung Cancer - (2001-2003)**

**Males**



**Females**



**Table 11.3(a) : Number(#) and Relative Proportion(%) of Lung cancers based on different Methods of Diagnosis (2001-03) - Males**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	1900	92.8	4	0.2	16	0.8	128	6.3	2048	100.0
Bangalore	634	91.0	20	2.9	36	5.2	7	1.0	697	100.0
Chennai	551	73.0	18	2.4	185	24.5	1	0.1	755	100.0
Thi'puram	1496	84.2	8	0.5	267	15.0	5	0.3	1776	100.0
Dibrugarh	44	91.7	0	0.0	3	6.3	1	2.1	48	100.0

**Table 11.3(b) : Number(#) and Relative Proportion(%) of Lung cancers based on different Methods of Diagnosis (2001-03) - Females**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	480	92.7	1	0.2	0	0.0	37	7.1	518	100.0
Bangalore	145	93.5	3	1.9	2	1.3	5	3.2	155	100.0
Chennai	148	75.5	7	3.6	16	8.2	25	12.8	196	100.0
Thi'puram	212	86.2	1	0.4	9	3.7	24	9.8	246	100.0
Dibrugarh	12	100.0	0	0.0	0	0.0	0	0.0	12	100.0

**Table 11.4(a): Number(#) and Relative Proportion(%) of lung cancer patients according to the Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03) - Males**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Mumbai	511	27.3	300	16.0	811	43.3	946	50.5	115	6.1	1872	100.0
Bangalore	30	4.6	360	54.6	390	59.2	246	37.3	23	3.5	659	100.0
Chennai	0	0.0	504	75.0	504	75.0	168	25.0	0	0.0	672	100.0
Thi'puram	197	11.8	592	35.5	789	47.3	879	52.7	0	0.0	1668	100.0
Dibrugarh	0	0.0	1	2.1	1	2.1	9	19.1	37	78.7	47	100.0

**Table 11.4(b): Number(#) and Relative Proportion(%) of Lung cancer patients according to the Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03) - Females**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
<b>Mumbai</b>	108	22.2	53	10.9	161	33.1	296	60.8	30	6.2	487	100.0
<b>Bangalore</b>	6	4.3	62	44.3	68	48.6	65	46.4	7	5.0	140	100.0
<b>Chennai</b>	0	0.0	116	66.7	116	66.7	58	33.3	0	0.0	174	100.0
<b>Thi'puram</b>	25	11.2	73	32.6	98	43.8	126	56.3	0	0.0	224	100.0
<b>Dibrugarh</b>	0	0.0	0	0.0	0	0.0	4	33.3	8	66.7	12	100.0

**Table 11.5(a): Number(#) and Relative Proportion(%) of Lung cancer patients according to Broad Groups of Treatment(Tmt) (2001-03) - Males**

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	136	6.6	24	3.4	80	10.6	38	2.1	0	0.0
Prior & Tmt. at RI	40	2.0	14	2.0	3	0.4	70	3.9	1	2.1
Tmt. Only at RI	598	29.2	209	30.0	142	18.8	1190	67.0	35	72.9
No Treatment	1274	62.2	450	64.6	530	70.2	478	26.9	12	25.0
<b>Total Patients</b>	<b>2048</b>	<b>100.0</b>	<b>697</b>	<b>100.0</b>	<b>755</b>	<b>100.0</b>	<b>1776</b>	<b>100.0</b>	<b>48</b>	<b>100.0</b>

**Table 11.5(b): Number(#) and Relative Proportion(%) of Lung cancer patients according to Broad Groups of Treatment(Tmt) (2001-03) - Females**

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	22	4.3	11	7.1	20	10.2	9	3.7	0	0.0
Prior & Tmt. at RI	9	1.7	4	2.6	2	1.0	13	5.3	0	0.0
Tmt. only at RI	147	28.4	33	21.3	38	19.4	155	63.0	6	50.0
No Treatment	340	65.6	107	69.0	136	69.4	69	28.0	6	50.0
<b>Total patients</b>	<b>518</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>	<b>196</b>	<b>100.0</b>	<b>246</b>	<b>100.0</b>	<b>12</b>	<b>100.0</b>

**Table11.6(a): Number(#) and Relative Proportion(%) of Lung Cancer patients according to Type of Treatment given(Patients treated only at Reporting Institution) (2001-03) - Males**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>598</b>	<b>100.0</b>	<b>209</b>	<b>100.0</b>	<b>142</b>	<b>100.0</b>	<b>1190</b>	<b>100.0</b>	<b>35</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery(S)	81	13.5	1	0.5	5	3.5	10	0.8	0	0.0
Radiotherapy(R)	132	22.1	110	52.6	22	15.5	698	58.7	26	74.3
Chemotherapy(C)	209	34.9	44	21.1	84	59.2	189	15.9	5	14.3
S + R	8	1.3	3	1.4	3	2.1	8	0.7	0	0.0
S + C	26	4.3	8	3.8	1	0.7	3	0.3	0	0.0
R + C	134	22.4	42	20.1	26	18.3	210	17.6	4	11.4
S + R + C	8	1.3	1	0.5	1	0.7	2	0.2	0	0.0
Others	0	0.0	0	0.0	0	0.0	70	5.9	0	0.0
<b>Modality of therapy</b>										
Single	422	70.6	155	74.2	111	78.2	897	75.4	31	88.6
Combination	176	29.4	54	25.8	31	21.8	223	18.7	4	11.4
<b>Type of Any Treatment</b>										
Any Surgery	123	20.6	13	6.2	10	7.0	23	1.9	0	0.0
Any R	282	47.2	156	74.6	52	36.6	918	77.1	30	85.7
Any C	377	63.0	95	45.5	112	78.9	404	33.9	9	25.7

**Table11.6(b): Number(#) and Relative Proportion(%) of Lung Cancer patients according to Type of Treatment given(Patients treated only at Reporting Institution) (2001-03) - Females**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>147</b>	<b>100.0</b>	<b>33</b>	<b>100.0</b>	<b>38</b>	<b>100.0</b>	<b>155</b>	<b>100.0</b>	<b>6</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery(S)	16	10.9	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy(R)	32	21.8	9	27.3	3	7.9	74	47.7	3	50.0
Chemotherapy(C)	61	41.5	16	48.5	26	68.4	43	27.7	2	33.3
S + R	4	2.7	0	0.0	0	0.0	0	0.0	0	0.0
S + C	3	2.0	0	0.0	1	2.6	1	0.6	0	0.0
R + C	29	19.7	8	24.2	8	21.1	27	17.4	1	16.7
S + R + C	2	1.4	0	0.0	0	0.0	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	10	6.5	0	0.0
<b>Modality of therapy</b>										
Single	109	74.1	25	75.8	29	76.3	117	75.5	5	83.3
Combination	38	25.9	8	24.2	9	23.7	28	18.1	1	16.7
<b>Type of Any Treatment</b>										
Any Surgery	25	17.0	0	0.0	1	2.6	1	0.6	0	0.0
Any R	67	45.6	17	51.5	11	28.9	101	65.2	4	66.7
Any C	95	64.6	24	72.7	35	92.1	71	45.8	9	150.0

**Table 11.7(a): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease -Lung - Males (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	65	40.9	0	0.0	0	0.0	4	2.9	0	0.0
Radiotherapy ( R )	19	11.9	3	33.3	0	0.0	79	56.8	0	0.0
Chemotherapy ( C )	27	17.0	2	22.2	0	0.0	26	18.7	0	0.0
S+R	4	2.5	0	0.0	0	0.0	2	1.4	0	0.0
S+C	11	6.9	1	11.1	0	0.0	1	0.7	0	0.0
R+C	27	17.0	2	22.2	0	0.0	21	15.1	0	0.0
S+R+C	6	3.8	1	11.1	0	0.0	1	0.7	0	0.0
Others	0	0.0	0	0.0	0	0.0	5	3.6	0	0.0
All Treatments	159	100.0	9	100.0	0	0.0	139	100.0	0	0.0
<b>Regional</b>										
Surgery ( S )	10	8.5	1	0.8	5	4.7	6	1.4	0	0.0
Radiotherapy ( R )	22	18.6	57	46.0	16	15.0	212	50.1	0	0.0
Chemotherapy ( C )	39	33.1	29	23.4	63	58.9	87	20.6	0	0.0
S+R	2	1.7	2	1.6	3	2.8	5	1.2	0	0.0
S+C	11	9.3	7	5.6	1	0.9	2	0.5	0	0.0
R+C	32	27.1	28	22.6	18	16.8	91	21.5	0	0.0
S+R+C	2	1.7	0	0.0	1	0.9	1	0.2	0	0.0
Others	0	0.0	0	0.0	0	0.0	19	4.5	0	0.0
All Treatments	118	100.0	124	100.0	107	100.0	423	100.0	0	0.0
<b>Distant</b>										
Surgery ( S )	4	1.3	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	90	28.4	49	65.3	6	17.1	407	64.8	5	62.5
Chemotherapy ( C )	142	44.8	13	17.3	21	60.0	76	12.1	1	12.5
S+R	2	0.6	1	1.3	0	0.0	1	0.2	0	0.0
S+C	4	1.3	0	0.0	0	0.0	0	0.0	0	0.0
R+C	75	23.7	12	16.0	8	22.9	98	15.6	2	25.0
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	46	7.3	0	0.0
All Treatments	317	100.0	75	100.0	35	100.0	628	100.0	8	100.0
<b>Others</b>										
Surgery ( S )	2	50.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	1	25.0	1	100.0	0	0.0	0	0.0	21	77.8
Chemotherapy ( C )	1	25.0	0	0.0	0	0.0	0	0.0	4	14.8
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	0	0.0	0	0.0	0	0.0	0	0.0	2	7.4
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	4	100.0	1	100.0	0	0.0	0	0.0	27	100.0

**Table 11.7(b): Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease -Lung - Females (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	14	42.4	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	4	12.1	0	0.0	0	0.0	5	45.5	0	0.0
Chemotherapy ( C )	6	18.2	0	0.0	0	0.0	1	9.1	0	0.0
S+R	2	6.1	0	0.0	0	0.0	0	0.0	0	0.0
S+C	2	6.1	0	0.0	0	0.0	1	9.1	0	0.0
R+C	4	12.1	0	0.0	0	0.0	2	18.2	0	0.0
S+R+C	1	3.0	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
<b>All Treatments</b>	<b>33</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>11</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
<b>Regional</b>										
Surgery ( S )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	5	22.7	5	25.0	2	9.1	19	36.5	0	0.0
Chemotherapy ( C )	9	40.9	10	50.0	14	63.6	19	36.5	0	0.0
S+R	1	4.5	0	0.0	0	0.0	0	0.0	0	0.0
S+C	1	4.5	0	0.0	1	4.5	0	0.0	0	0.0
R+C	5	22.7	5	25.0	5	22.7	12	23.1	0	0.0
S+R+C	1	4.5	0	0.0	0	0.0	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	2	3.8	0	0.0
<b>All Treatments</b>	<b>22</b>	<b>100.0</b>	<b>20</b>	<b>100.0</b>	<b>22</b>	<b>100.0</b>	<b>52</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>
<b>Distant</b>										
Surgery ( S )	1	1.1	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	23	25.3	4	30.8	1	6.3	50	54.3	0	0.0
Chemotherapy ( C )	46	50.5	6	46.2	12	75.0	23	25.0	1	50.0
S+R	1	1.1	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	20	22.0	3	23.1	3	18.8	13	14.1	1	50.0
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	6	6.5	0	0.0
<b>All Treatments</b>	<b>91</b>	<b>100.0</b>	<b>13</b>	<b>100.0</b>	<b>16</b>	<b>100.0</b>	<b>92</b>	<b>100.0</b>	<b>2</b>	<b>100.0</b>
<b>Others</b>										
Surgery ( S )	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	0	0.0	0	0.0	0	0.0	3	75.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	0	0.0	1	25.0
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	0	0.0	0	0.0	0	0.0	0	0.0	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
<b>All Treatments</b>	<b>1</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>4</b>	<b>100.0</b>



**Table 11.8(a): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Lung - Males (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total Patients
	#	%	#	%	#	%	#	%	
<b>LOCALISED</b>									
Mumbai	86	54.1	56	35.2	71	44.7	0	0.0	159
Bangalore	2	22.2	6	66.7	6	66.7	0	0.0	9
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	8	5.8	103	74.1	49	35.3	5	3.6	139
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>REGIONAL</b>									
Mumbai	25	21.2	58	49.2	84	71.2	0	0.0	118
Bangalore	10	8.1	87	70.2	64	51.6	0	0.0	124
Chennai	10	9.4	38	35.5	83	77.6	0	0.0	107
Thi'puram	14	3.3	309	73.1	181	42.8	19	4.5	423
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>DISTANT</b>									
Mumbai	10	3.2	167	52.7	221	69.7	0	0.0	317
Bangalore	1	1.3	62	82.7	25	33.3	0	0.0	75
Chennai	0	0.0	14	40.0	29	82.9	0	0.0	35
Thi'puram	1	0.2	506	80.6	174	27.7	46	7.3	628
Dibrugarh	0	0.0	0	0.0	3	37.5	0	0.0	8
<b>OTHERS</b>									
Mumbai	2	50.0	1	25.0	1	25.0	0	0.0	4
Bangalore	0	0.0	1	100.0	0	0.0	0	0.0	1
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	23	85.2	6	22.2	0	0.0	27

**Table 11.8(b): Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Lung - Females (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	19	57.6	11	33.3	13	39.4	0	0.0	33
Bangalore	0	0.0	0	0.0	0	0.0	0	0.0	0
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	1	9.1	7	63.6	4	36.4	2	18.2	11
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>REGIONAL</b>									
Mumbai	3	13.6	12	54.6	16	72.7	0	0.0	22
Bangalore	0	0.0	10	50.0	15	75.0	0	0.0	20
Chennai	1	4.6	7	31.8	20	90.9	0	0.0	22
Thi'puram	0	0.0	31	59.6	31	59.6	2	3.9	52
Dibrugarh	0	0.0	0	0.0	0	0.0	0	0.0	0
<b>DISTANT</b>									
Mumbai	2	2.2	44	48.4	66	72.5	0	0.0	91
Bangalore	0	0.0	7	53.9	9	69.2	0	0.0	13
Chennai	0	0.0	4	25.0	15	93.8	0	0.0	16
Thi'puram	0	0.0	63	68.5	36	39.1	6	6.5	92
Dibrugarh	0	0.0	1	50.0	2	100.0	0	0.0	2
<b>OTHERS</b>									
Mumbai	1	100.0	0	0.0	0	0.0	0	0.0	1
Bangalore	0	0.0	0	0.0	0	0.0	0	0.0	0
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	3	75.0	1	25.0	0	0.0	4

# 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, Chennai and Dibrugarh (Table 12.1).

Figure 12.1 gives the trends in actual numbers of breast cancer in females from 1984 to 2003. An increase in numbers was seen in all the registries except in Dibrugarh.

Table 12.2 and Figure 12.2 give the five year age distribution of breast cancer in females. The mean age was lower than 44 in all the registries except in Dibrugarh.

Table 12.3 gives the number and relative proportion according to the different methods of diagnosis. The proportion of microscopic diagnosis was above 90% in all registries.

Table 12.4 gives the number and relative proportion according to the clinical extent of disease. The proportion with "Regional" spread varied from 33.6% in Mumbai to 83% in Dibrugarh.

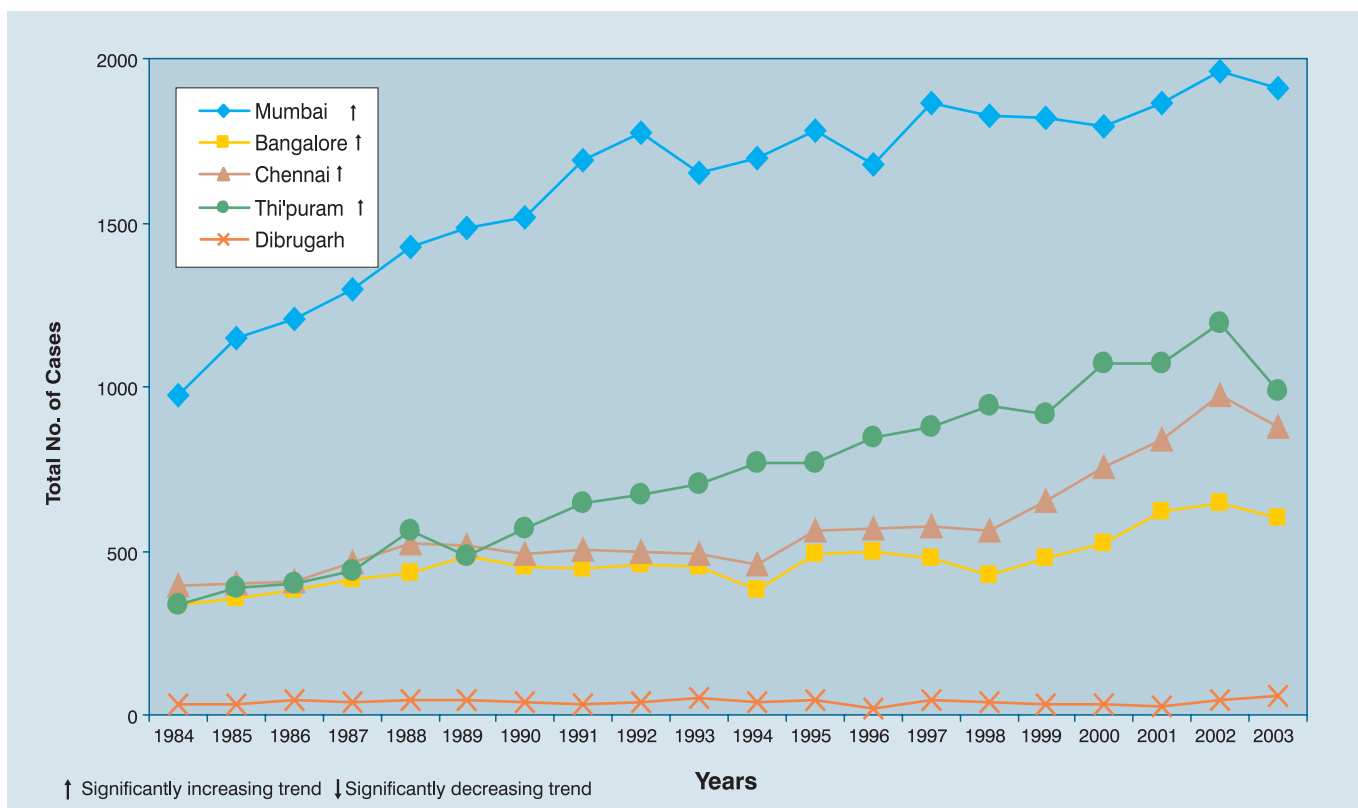
Table 12.5 gives the number and relative proportion according to the broad groups of treatment. The percentage of cases treated only at RI varied from 28.6% in Mumbai to 74.6% in Dibrugarh.

Tables 12.6 to 12.8 give 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 (2001-03)**

Registry	Total	#	%	R
Mumbai	21121	5738	27.2	1
Bangalore	12636	1867	14.8	2
Chennai	12417	2690	21.7	2
Thi'puram	11745	3254	27.7	1
Dibrugarh	910	130	14.3	2

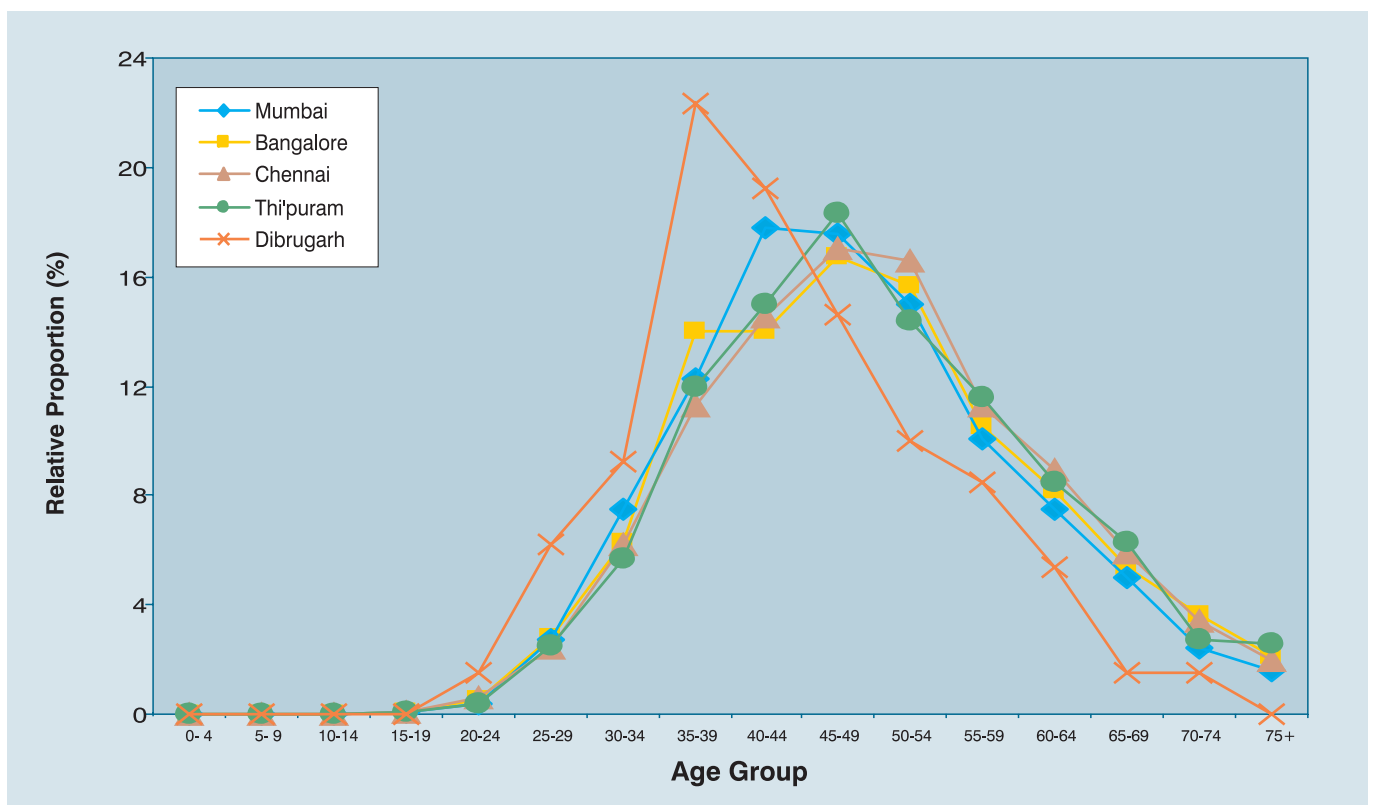
**Fig. 12.1 Trends in actual numbers of cancers- Female Breast**



**Table 12.2: Number(#) and Relative Proportion(%) of Female Breast cancers according to five year age group (2001-03)**

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	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15-19	4	0.1	2	0.1	3	0.1	2	0.1	0	0.0
20-24	25	0.4	9	0.5	16	0.6	13	0.4	2	1.5
25-29	153	2.7	53	2.8	64	2.4	82	2.5	8	6.2
30-34	428	7.5	117	6.3	166	6.2	185	5.7	12	9.2
35-39	706	12.3	262	14.0	303	11.3	389	12.0	29	22.3
40-44	1020	17.8	262	14.0	389	14.5	488	15.0	25	19.2
45-49	1011	17.6	311	16.7	457	17.0	596	18.3	19	14.6
50-54	862	15.0	294	15.7	446	16.6	468	14.4	13	10.0
55-59	578	10.1	196	10.5	303	11.3	378	11.6	11	8.5
60-64	430	7.5	154	8.2	239	8.9	277	8.5	7	5.4
65-69	288	5.0	100	5.4	159	5.9	204	6.3	2	1.5
70-74	140	2.4	68	3.6	92	3.4	89	2.7	2	1.5
75+	92	1.6	39	2.1	53	2.0	83	2.6	0	0.0
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>5738</b>	<b>100.0</b>	<b>1867</b>	<b>100.0</b>	<b>2690</b>	<b>100.0</b>	<b>3254</b>	<b>100.0</b>	<b>130</b>	<b>100.0</b>
<b>Mean</b>		48.1		48.9		49.5		49.4		43.7
<b>SD</b>		11.27		11.80		11.62		11.63		10.48

**Fig 12.2 : Five Year Age Group Distribution - Female Breast Cancer (2001-2003)**



**Table 12.3: Number(#) and Relative Proportion(%) of Female Breast cancers based on different Methods of Diagnosis (2001-03)**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	5181	90.3	10	0.2	1	0.0	546	9.5	5738	100.0
Bangalore	1778	95.2	44	2.4	5	0.3	40	2.1	1867	100.0
Chennai	2569	95.5	107	4.0	14	0.5	0	0.0	2690	100.0
Thi'puram	3222	99.0	28	0.9	3	0.1	1	0.0	3254	100.0
Dibrugarh	126	96.9	1	0.8	2	1.5	1	0.8	130	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) (2001-03)**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Mumbai	1337	41.8	1073	33.6	2410	75.4	323	10.1	464	14.5	3197	100.0
Bangalore	100	9.5	763	72.2	863	81.6	134	12.7	60	5.7	1057	100.0
Chennai	231	13.9	1093	65.9	1324	79.9	334	20.1	0	0.0	1658	100.0
Thi'puram	166	13.6	845	69.1	1011	82.7	211	17.3	0	0.0	1222	100.0
Dibrugarh	3	2.8	88	83.0	91	85.8	7	6.6	8	7.5	106	100.0

**Table 12.5: Number(#) and Relative Proportion(%) of Female Breast cancer patients according to Broad Groups of Treatment(Tmt) (2001-03)**

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	1022	17.8	345	18.5	496	18.4	304	9.3	1	0.8
Prior & Tmt. at RI	1519	26.5	465	24.9	536	19.9	1728	53.1	23	17.7
Tmt. Only at RI	1643	28.6	648	34.7	1205	44.8	1039	31.9	97	74.6
No Treatment	1554	27.1	409	21.9	453	16.8	183	5.6	9	6.9
<b>Total Patients</b>	<b>5738</b>	<b>100.0</b>	<b>1867</b>	<b>100.0</b>	<b>2690</b>	<b>100.0</b>	<b>3254</b>	<b>100.0</b>	<b>130</b>	<b>100.0</b>

**Table 12.6: Number(#) and Relative Proportion(%) of Female Breast Cancer patients according to Type of Treatment given(Patients treated only at Reporting Institution) (2001-03)**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>1643</b>	<b>100.0</b>	<b>648</b>	<b>100.0</b>	<b>1205</b>	<b>100.0</b>	<b>1039</b>	<b>100.0</b>	<b>97</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery(S)	349	21.2	61	9.4	13	1.1	25	2.4	28	28.9
Radiotherapy(R)	8	0.5	12	1.9	2	0.2	16	1.5	20	20.6
Chemotherapy(C)	80	4.9	44	6.8	71	5.9	85	8.2	2	2.1
S + R	25	1.5	83	12.8	2	0.2	21	2.0	22	22.7
S + C	139	8.5	67	10.3	1	0.1	191	18.4	20	20.6
R + C	14	0.9	31	4.8	75	6.2	35	3.4	2	2.1
S + R + C	356	21.7	166	25.6	24	2.0	308	29.6	3	3.1
Others	672	40.9	184	28.4	1017	84.4	358	34.5	0	0.0
<b>Modality of therapy</b>										
Single	437	26.6	117	18.1	86	7.1	126	12.1	50	51.5
Combination	534	32.5	347	53.5	102	8.5	555	53.4	47	48.5
<b>Type of Any Treatment</b>										
Any Surgery	1497	91.1	432	66.7	8	0.7	805	77.5	73	75.3
Any R	883	53.7	422	65.1	10	0.8	586	56.4	47	48.5
Any C	1125	68.5	184	28.4	11	0.9	883	85.0	27	27.8

**Table 12.7: Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease - Female Breast (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	249	40.7	7	8.4	5	2.7	5	3.5	3	100.0
Radiotherapy ( R )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chemotherapy ( C )	4	0.7	3	3.6	6	3.2	3	2.1	0	0.0
S+R	12	2.0	17	20.5	1	0.5	2	1.4	0	0.0
S+C	40	6.5	11	13.3	0	0.0	35	24.7	0	0.0
R+C	0	0.0	1	1.2	8	4.3	0	0.0	0	0.0
S+R+C	104	17.0	17	20.5	5	2.7	38	26.8	0	0.0
Others	203	33.2	27	32.5	162	86.6	59	41.6	0	0.0
All Treatments	612	100.0	83	100.0	187	100.0	142	100.0	3	100.0
<b>Regional</b>										
Surgery ( S )	56	6.9	46	8.9	8	1.0	20	2.8	25	29.1
Radiotherapy ( R )	3	0.4	8	1.5	2	0.3	2	0.3	15	17.4
Chemotherapy ( C )	31	3.8	30	5.8	21	2.6	39	5.4	1	1.2
S+R	6	0.7	63	12.1	1	0.1	19	2.6	22	25.6
S+C	80	9.8	52	10.0	1	0.1	145	19.9	19	22.1
R+C	4	0.5	28	5.4	53	6.6	15	2.1	1	1.2
S+R+C	229	28.2	144	27.7	19	2.4	257	35.4	3	3.5
Others	404	49.7	149	28.7	698	86.9	230	31.6	0	0.0
All Treatments	813	100.0	520	100.0	803	100.0	727	100.0	86	100.0
<b>Distant</b>										
Surgery ( S )	5	3.1	8	18.2	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	5	3.1	4	9.1	0	0.0	14	8.2	0	0.0
Chemotherapy ( C )	45	28.0	11	25.0	44	20.5	43	25.3	1	33.3
S+R	1	0.6	3	6.8	0	0.0	0	0.0	0	0.0
S+C	16	9.9	4	9.1	0	0.0	11	6.5	1	33.3
R+C	10	6.2	2	4.6	14	6.5	20	11.8	1	33.3
S+R+C	16	9.9	4	9.1	0	0.0	13	7.7	0	0.0
Others	63	39.1	8	18.2	157	73.0	69	40.6	0	0.0
All Treatments	161	100.0	44	100.0	215	100.0	170	100.0	3	100.0
<b>Others</b>										
Surgery ( S )	39	68.4	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	0	0.0	0	0.0	0	0.0	0	0.0	4	100.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
S+R	6	10.5	0	0.0	0	0.0	0	0.0	0	0.0
S+C	3	5.3	0	0.0	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	7	12.3	1	100.0	0	0.0	0	0.0	0	0.0
Others	2	3.5	0	0.0	0	0.0	0	0.0	0	0.0
All Treatments	57	100.0	1	100.0	0	0.0	0	0.0	4	100.0



**Table 12.8: Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Female Breast (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Patients
<b>LOCALISED</b>									
Mumbai	606	99.0	240	39.2	285	46.6	203	33.2	612
Bangalore	79	95.2	53	63.9	45	54.2	27	32.5	83
Chennai	165	88.2	153	81.8	160	85.6	162	86.6	187
Thi'puram	136	95.8	67	47.2	115	81.0	59	41.6	142
Dibrugarh	3	100.0	41	1366.7	0	0.0	0	0.0	3
<b>REGIONAL</b>									
Mumbai	759	93.4	561	69.0	691	85.0	404	49.7	813
Bangalore	438	84.2	361	69.4	351	67.5	149	28.7	520
Chennai	630	78.5	729	90.8	740	92.2	698	86.9	803
Thi'puram	636	87.5	444	61.1	636	87.5	230	31.6	727
Dibrugarh	69	80.2	1	1.2	24	27.9	0	0.0	86
<b>DISTANT</b>									
Mumbai	75	46.6	68	42.2	137	85.1	63	39.1	161
Bangalore	23	52.3	17	38.6	25	56.8	8	18.2	44
Chennai	12	5.6	110	51.2	180	83.7	157	73.0	215
Thi'puram	33	19.4	75	44.1	132	77.7	69	40.6	170
Dibrugarh	1	33.3	0	0.0	3	100.0	0	0.0	3
<b>OTHERS</b>									
Mumbai	57	100.0	14	24.6	12	21.1	2	3.5	57
Bangalore	1	100.0	1	100.0	1	100.0	0	0.0	1
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	5	125.0	0	0.0	0	0.0	4

# Chapter 13

## CERVIX (ICD-10: C53)

Cancer of the cervix was the leading site in Bangalore and Chennai and was the second leading site in Mumbai & Thiruvananthapuram (Table 13.1). In Dibrugarh it was the third leading site.

Figure 13.1 gives the trends in actual numbers of cancer cervix. A decreasing trend was seen in Mumbai, Bangalore 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 50.0 in Dibrugarh to 56.7 in Thiruvananthapuram.

The predominant form of diagnosis of cancer cervix (>90%) was through microscopic examination (Table 13.3).

Table 13.4 gives the number and relative proportion according to the clinical extent of disease. Over 84% of patients had regional disease at the time of diagnosis in all registries except in Mumbai (63.4%).

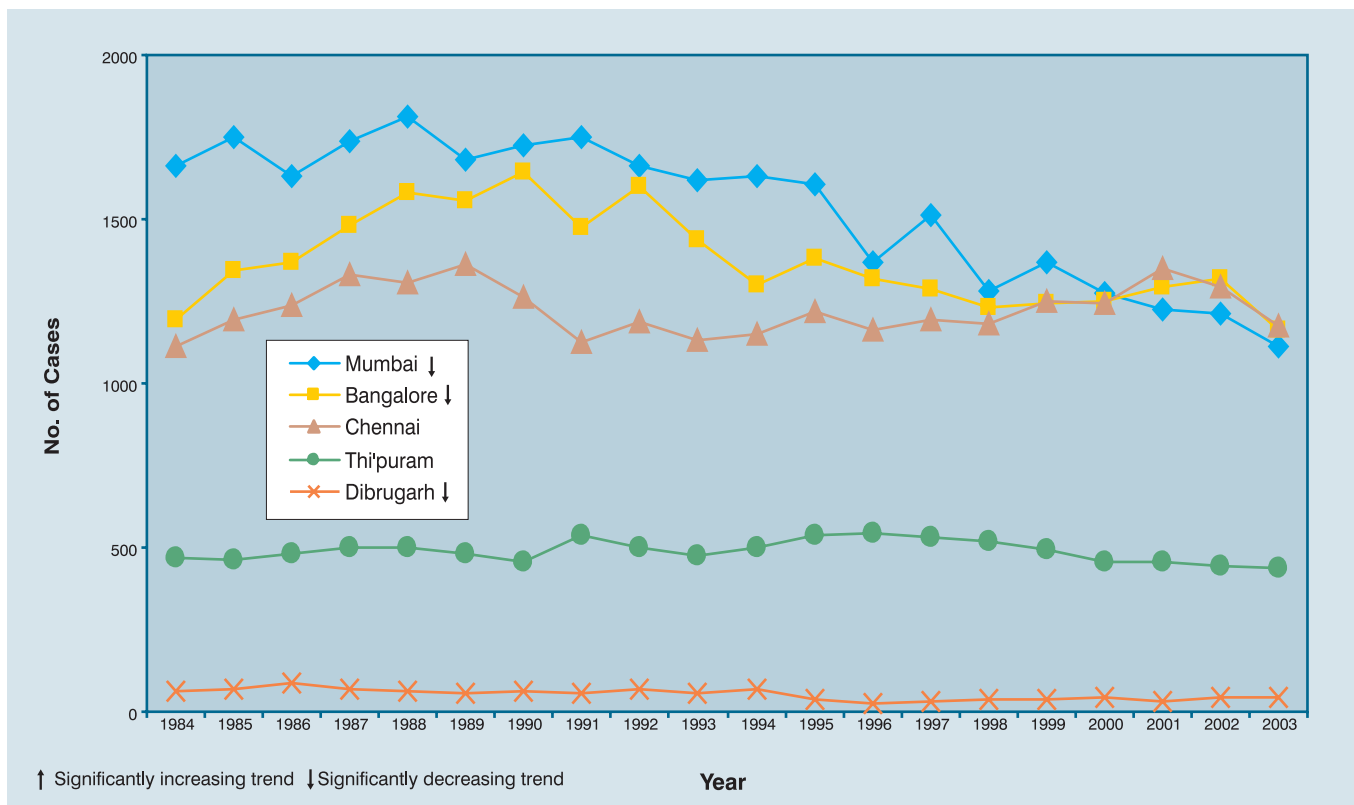
Table 13.5 gives the number and relative proportion according to the broad groups of treatment. The percentage of cases treated only at RI varied from 34.6% in Mumbai to 83.2% in Dibrugarh.

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 (2001-03)**

Registry	Total	#	%	R
Mumbai	21121	3547	16.8	2
Bangalore	12636	3777	29.9	1
Chennai	12417	3815	30.7	1
Thi'puram	11745	1337	11.4	2
Dibrugarh	910	119	13.1	3

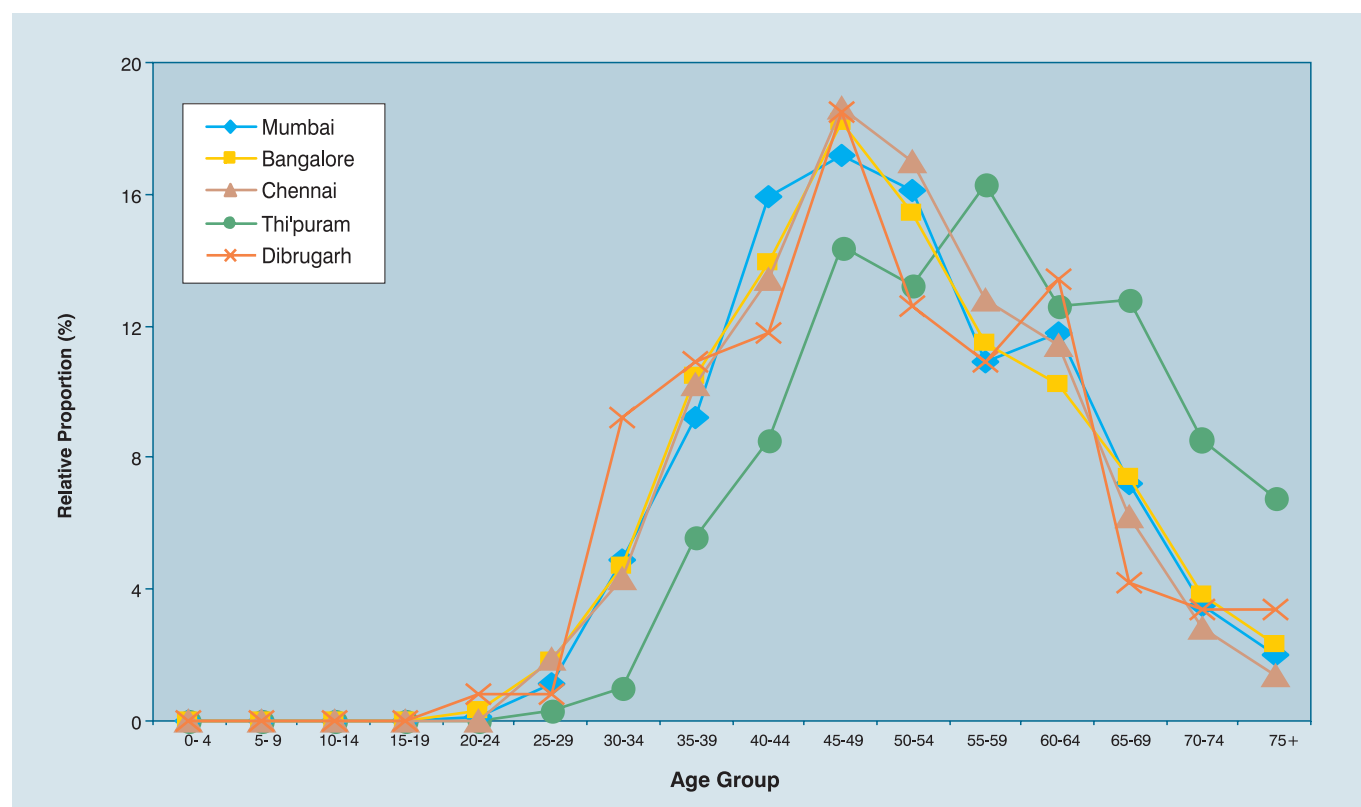
**Fig. 13.1 Trends in Actual Numbers - Cancer Cervix**



**Table 13.2: Number(#) and Relative Proportion(%) of Cervical cancers according to five year age group (2001-03)**

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	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
20-24	4	0.1	13	0.3	1	0.0	0	0.0	1	0.8
25-29	40	1.1	68	1.8	73	1.9	4	0.3	1	0.8
30-34	174	4.9	178	4.7	163	4.3	14	1.0	11	9.2
35-39	327	9.2	396	10.5	390	10.2	75	5.6	13	10.9
40-44	563	15.9	526	13.9	511	13.4	114	8.5	14	11.8
45-49	609	17.2	686	18.2	708	18.6	192	14.4	22	18.5
50-54	572	16.1	580	15.4	649	17.0	176	13.2	15	12.6
55-59	387	10.9	435	11.5	488	12.8	218	16.3	13	10.9
60-64	420	11.8	387	10.2	435	11.4	169	12.6	16	13.4
65-69	254	7.2	278	7.4	237	6.2	171	12.8	5	4.2
70-74	124	3.5	144	3.8	106	2.8	113	8.5	4	3.4
75+	71	2.0	86	2.3	54	1.4	91	6.8	4	3.4
ANS	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Ages</b>	<b>3547</b>	<b>100.0</b>	<b>3777</b>	<b>100.0</b>	<b>3815</b>	<b>100.0</b>	<b>1337</b>	<b>100.0</b>	<b>119</b>	<b>100.0</b>
<b>Mean</b>		50.9		50.7		50.5		56.7		50.0
<b>SD</b>		11.17		11.52		10.80		11.43		12.11

**Fig. 13.2: Five year age group distribution - Cancer Cervix**



**Table 13.3: Number(#) and Relative Proportion(%) of Cervical cancers based on different Methods of Diagnosis (2001-03)**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	3268	92.1	6	0.2	0	0.0	273	7.7	3547	100.0
Bangalore	3630	96.1	96	2.5	6	0.2	45	1.2	3777	100.0
Chennai	3486	91.4	326	3.5	3	0.1	0	0.0	3815	100.0
Thi'puram	1286	96.2	47	3.5	3	0.2	1	0.1	1337	100.0
Dibrugarh	117	98.3	1	0.8	1	0.8	0	0.0	119	100.0

**Table 13.4: Number(#) and Relative Proportion(%) of Cervical cancer patients according to the Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03)**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Mumbai	619	22.4	1754	63.4	2373	85.7	188	6.8	207	7.5	2768	100.0
Bangalore	90	2.6	3098	89.0	3188	91.6	204	5.9	90	2.6	3482	100.0
Chennai	271	8.1	2990	89.4	3261	97.5	84	2.5	0	0.0	3345	100.0
Thi'puram	135	11.1	1034	84.8	1169	95.9	50	4.1	0	0.0	1219	100.0
Dibrugarh	3	2.6	99	86.1	102	88.7	10	8.7	3	2.6	115	100.0

**Table 13.5: Number(#) and Relative Proportion(%) of Cervical cancer patients according to Broad Groups of Treatment(Tmt) (2001-03)**

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	413	11.6	139	3.7	431	11.3	23	1.7	0	0.0
Prior & Tmt. at RI	366	10.3	156	4.1	39	1.0	95	7.1	4	3.4
Tmt. Only at RI	1229	34.6	2027	53.7	1691	44.3	1061	79.4	99	83.2
No Treatment	1539	43.4	1455	38.5	1654	43.4	158	11.8	16	13.4
<b>Total Patients</b>	<b>3547</b>	<b>100.0</b>	<b>3777</b>	<b>100.0</b>	<b>3815</b>	<b>100.0</b>	<b>1337</b>	<b>100.0</b>	<b>119</b>	<b>100.0</b>

**Table13.6: Number(#) and Relative Proportion(%) of Cervical cancer patients according to Type of Treatment given(Patients treated only at Reporting Institution) (2001-03)**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>1229</b>	<b>100.0</b>	<b>2027</b>	<b>100.0</b>	<b>1691</b>	<b>100.0</b>	<b>1061</b>	<b>100.0</b>	<b>99</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery(S)	106	8.6	39	1.9	4	0.2	14	1.3	3	3.0
Radiotherapy(R)	714	58.1	888	43.8	1432	84.7	508	47.9	87	87.9
Chemotherapy(C)	5	0.4	22	1.1	3	0.2	6	0.6	1	1.0
S + R	74	6.0	125	6.2	163	9.6	60	5.7	5	5.1
S + C	7	0.6	12	0.6	0	0.0	2	0.2	1	1.0
R + C	298	24.2	858	42.3	74	4.4	439	41.4	1	1.0
S + R + C	25	2.0	83	4.1	15	0.9	26	2.5	1	1.0
Others	0	0.0	0	0.0	0	0.0	6	0.6	0	0.0
<b>Modality of therapy</b>										
Single	825	67.1	949	46.8	1439	85.1	528	49.8	91	91.9
Combination	404	32.9	1078	53.2	252	14.9	527	49.7	8	8.1
<b>Type of Any Treatment</b>										
Any Surgery	212	17.2	259	12.8	182	10.8	102	9.6	10	10.1
Any R	111	9.0	1954	96.4	1684	99.6	1033	97.4	94	94.9
Any C	335	27.3	975	48.1	92	5.4	473	44.6	4	4.0

**Table 13.7: Number(#) & Relative proportion (%) of types of treatment according to Clinical Extent of Disease - Cervix (2001-2003)**

Clinical Extent	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Localised</b>										
Surgery ( S )	92	34.5	6	9.4	1	0.5	9	7.4	0	0.0
Radiotherapy ( R )	68	25.5	15	23.4	96	51.0	45	36.9	3	100.0
Chemotherapy ( C )	1	0.4	0	0.0	0	0.0	0	0.0	0	0.0
S+R	56	21.0	9	14.06	83	44.2	25	20.5	0	0.0
S+C	2	0.8	3	4.7	0	0.0	0	0.0	0	0.0
R+C	31	11.6	26	40.6	4	2.1	34	27.9	0	0.0
S+R+C	17	6.4	5	7.8	4	2.1	8	6.6	0	0.0
Others	0	0.0	0	0.0	0	0.0	1	0.8	0	0.0
<b>All Treatments</b>	<b>267</b>	<b>100.0</b>	<b>64</b>	<b>100.0</b>	<b>188</b>	<b>100.0</b>	<b>122</b>	<b>100.0</b>	<b>3</b>	<b>100.0</b>
<b>Regional</b>										
Surgery ( S )	11	1.3	33	1.7	3	0.2	5	0.6	3	3.3
Radiotherapy ( R )	587	66.9	818	43.0	1316	88.8	445	49.1	78	86.7
Chemotherapy ( C )	2	0.2	20	1.1	3	0.2	5	0.6	1	1.1
S+R	16	1.8	116	6.1	80	5.4	35	3.9	5	5.6
S+C	3	0.3	9	0.5	0	0.0	2	0.2	1	1.1
R+C	255	29.0	829	43.6	69	4.7	397	43.8	1	1.1
S+R+C	4	0.5	78	4.1	11	0.7	18	2.0	1	1.1
Others	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<b>All Treatments</b>	<b>878</b>	<b>100.0</b>	<b>1903</b>	<b>100.0</b>	<b>1482</b>	<b>100.0</b>	<b>907</b>	<b>100.0</b>	<b>90</b>	<b>100.0</b>
<b>Distant</b>										
Surgery ( S )	1	1.4	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	53	73.6	55	91.7	20	95.2	18	56.3	4	100.0
Chemotherapy ( C )	2	2.8	2	3.3	0	0.0	1	3.1	0	0.0
S+R	2	2.8	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	11	15.3	3	5.0	1	4.8	8	25.0	0	0.0
S+R+C	3	4.2	0	0.0	0	0.0	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	5	15.6	0	0.0
<b>All Treatments</b>	<b>72</b>	<b>100.0</b>	<b>60</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>	<b>32</b>	<b>100.0</b>	<b>4</b>	<b>100.0</b>
<b>Others</b>										
Surgery ( S )	2	16.7	0	0.0	0	0.0	0	0.0	0	0.0
Radiotherapy ( R )	6	50.0	0	0.0	0	0.0	0	0.0	2	100.0
Chemotherapy ( C )	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
S+R	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
S+C	2	16.7	0	0.0	0	0.0	0	0.0	0	0.0
R+C	1	8.3	0	0.0	0	0.0	0	0.0	0	0.0
S+R+C	1	8.3	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
<b>All Treatments</b>	<b>12</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>2</b>	<b>100.0</b>

**Table 13.8: Number(#) & proportion (%) of any specific treatment relative to all treated patients according to Clinical Extent of Disease - Cervix (2001-2003)**

	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total Patients
	#	%	#	%	#	%	#	%	
<b>LOCALISED</b>									
Mumbai	167	62.6	172	64.4	51	19.1	0	0.0	267
Bangalore	23	35.9	55	85.9	34	53.1	0	0.0	64
Chennai	88	46.8	187	99.5	8	4.3	0	0.0	188
Thi'puram	42	34.4	112	91.8	42	34.4	1	0.8	122
Dibrugarh	0	0.0	3	100.0	0	0.0	0	0.0	3
<b>REGIONAL</b>									
Mumbai	34	3.9	862	98.2	264	30.1	0	0.0	878
Bangalore	236	12.4	1841	96.7	936	49.2	0	0.0	1903
Chennai	94	6.3	1476	99.6	83	5.6	0	0.0	1482
Thi'puram	60	6.6	895	98.7	422	46.5	0	0.0	907
Dibrugarh	10	11.1	85	94.4	4	4.4	0	0.0	90
<b>DISTANT</b>									
Mumbai	6	8.3	69	95.8	16	22.2	0	0.0	72
Bangalore	0	0.0	58	96.7	5	8.3	0	0.0	60
Chennai	0	0.0	21	100.0	1	4.8	0	0.0	21
Thi'puram	0	0.0	26	81.3	9	28.1	5	15.6	32
Dibrugarh	0	0.0	4	100.0	0	0.0	0	0.0	4
<b>OTHERS</b>									
Mumbai	5	41.7	8	66.7	4	33.3	0	0.0	12
Bangalore	0	0.0	0	0.0	0	0.0	0	0.0	0
Chennai	0	0.0	0	0.0	0	0.0	0	0.0	0
Thi'puram	0	0.0	0	0.0	0	0.0	0	0.0	0
Dibrugarh	0	0.0	2	100.0	0	0.0	0	0.0	2



# Chapter 14

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

Chapter 14 gives the comprehensive picture of head and neck cancers. These include cancer of 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 around 30% of all cancers in all registries in males except Dibrugarh (44.8%). In females head and neck cancers ranged from 11-18% of all sites of cancers in all registries.

Table 14.2 and Figure 14.2 depict 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. In males tongue and mouth contributed to more than one third of the total cases except in Dibrugarh where hypopharynx (37.1%) was the major contributor. Among females mouth cancer was the leading contributor to head and neck cancers in all registries. Table 14.4 and Figure 14.4 give the five year age distribution of this group of cancers.

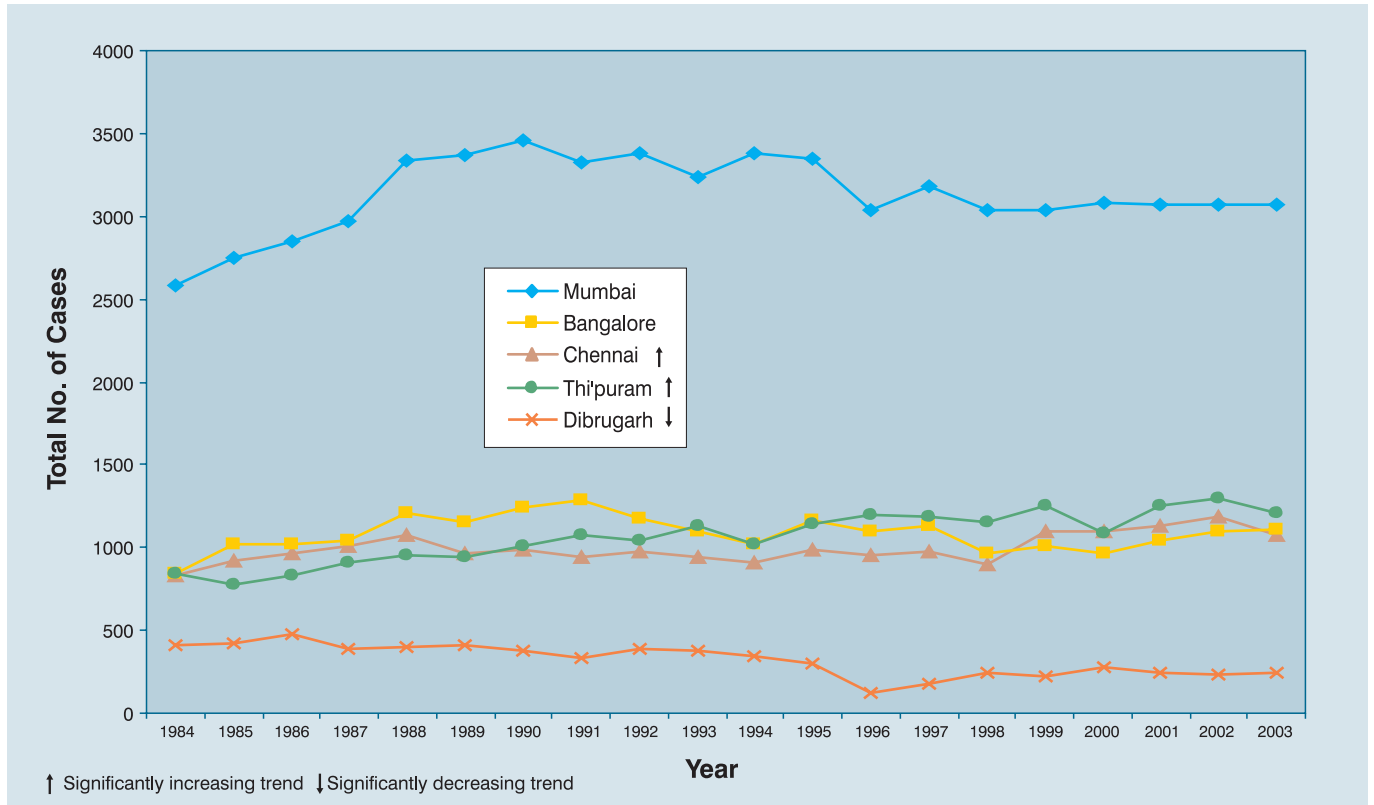
Table 14.5 gives the number and relative proportion based on different methods of diagnosis.

**Table 14.1 : Number(#) & Proportion(%) of Head and Neck Cancers relative to all sites of cancer (2001-2003)**

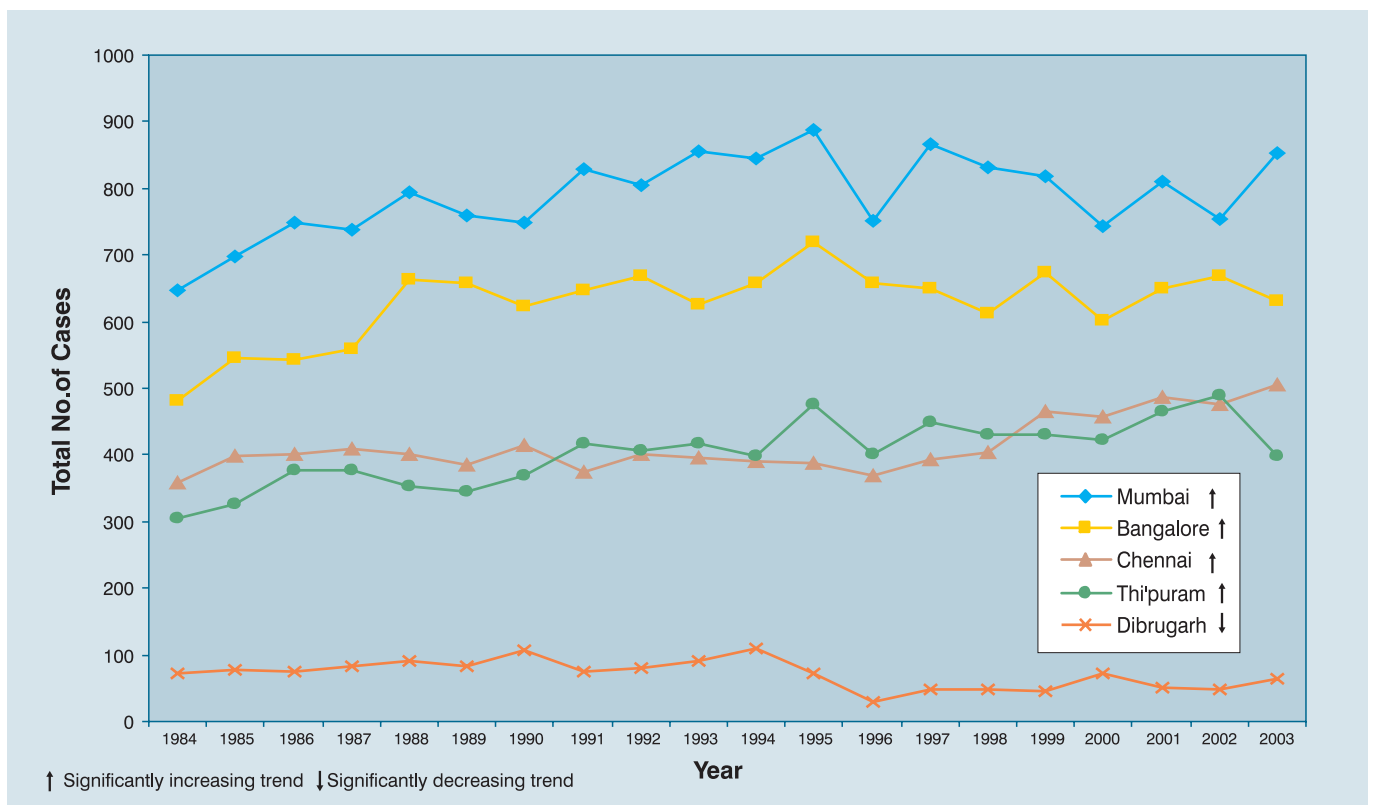
Registry	Males			Females		
	All sites	#	%	All sites	#	%
Mumbai	27078	9194	34.0	21121	2416	11.4
Bangalore	10799	3257	30.2	12636	1950	15.4
Chennai	10866	3392	31.2	12417	1469	11.8
Thi'puram	13099	3769	28.8	11745	1351	11.5
Dibrugarh	1602	719	44.9	910	164	18.0
<b>Total</b>	<b>63444</b>	<b>20331</b>	<b>32.1</b>	<b>58829</b>	<b>7350</b>	<b>12.5</b>

**Fig. 14.1 : Trends in Actual Numbers - Head and Neck Cancers (2001-2003)**

**Males**



**Females**



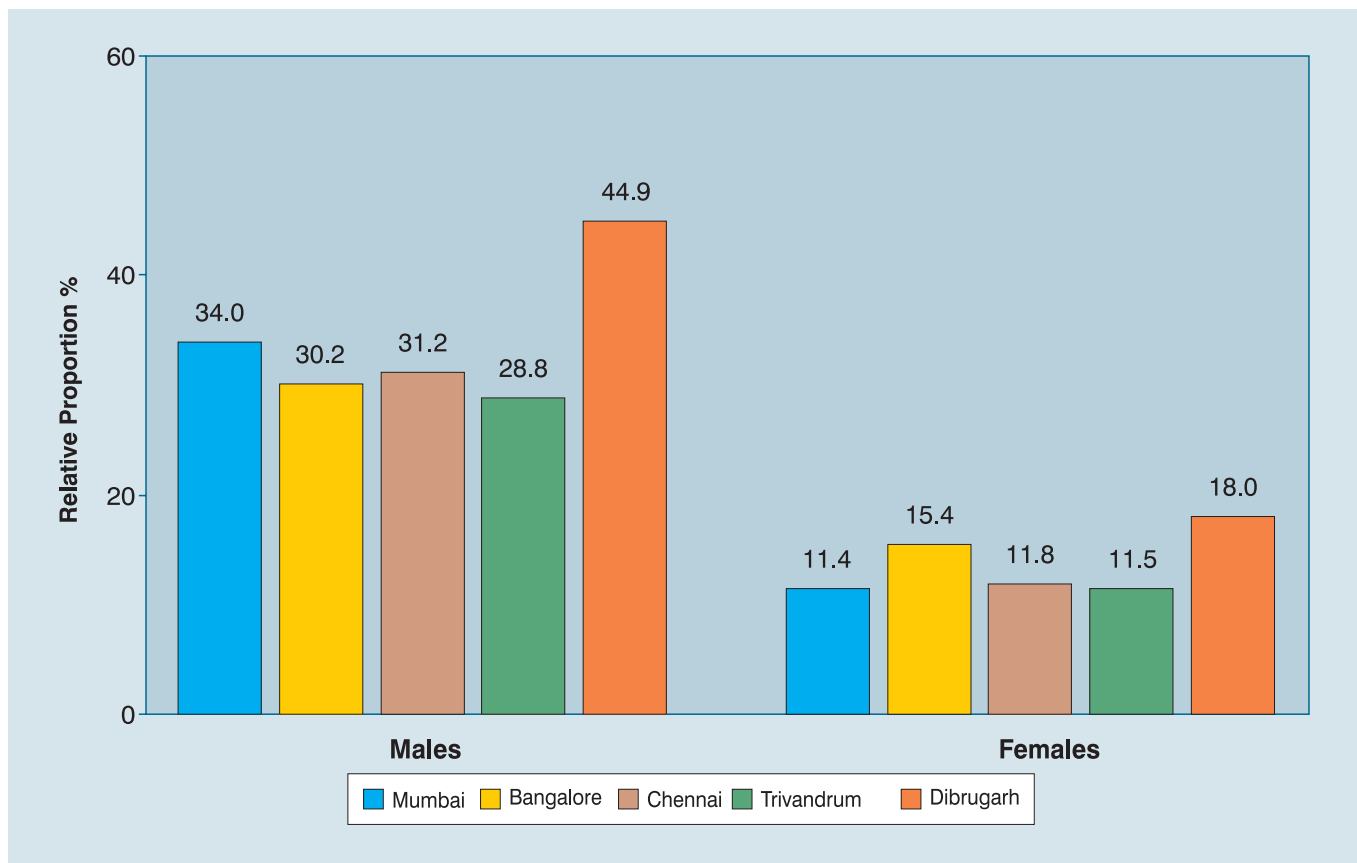
**Table 14.2: Number(#) and Relative Proportion(%) of specific Head and Neck sites relative to all sites of cancer (2001-2003)****Males**

Sites of cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	124	0.5	24	0.2	31	0.3	38	0.3	19	1.2
Tongue	1845	6.8	569	5.3	732	6.7	775	5.9	87	5.4
Mouth	3289	12.2	573	5.3	916	8.4	1230	9.4	106	6.6
Salivary Gl.	143	0.5	64	0.6	54	0.5	88	0.7	14	0.9
Oropharynx	796	2.9	366	3.4	303	2.8	365	2.8	93	5.8
Nasopharynx	203	0.8	54	0.5	117	1.1	98	0.8	8	0.5
Hypopharynx	1301	4.8	1004	9.3	633	5.8	380	2.9	267	16.7
Pharynx,etc.	12	0.0	110	1.0	53	0.5	33	0.3	39	2.4
Nose & Sinus	238	0.9	64	0.6	92	0.9	118	0.9	14	0.9
Larynx	1234	4.6	428	4.0	460	4.2	643	4.9	72	4.5
Trachea	9	0.0	1	0.0	1	0.0	1	0.0	0	0.0
Head & Neck	9194	34.0	3257	30.2	3392	31.2	3769	28.8	719	44.9
<b>All Sites</b>	<b>27078</b>	<b>100.0</b>	<b>10799</b>	<b>100.0</b>	<b>10866</b>	<b>100.0</b>	<b>13099</b>	<b>100.0</b>	<b>1602</b>	<b>100.0</b>

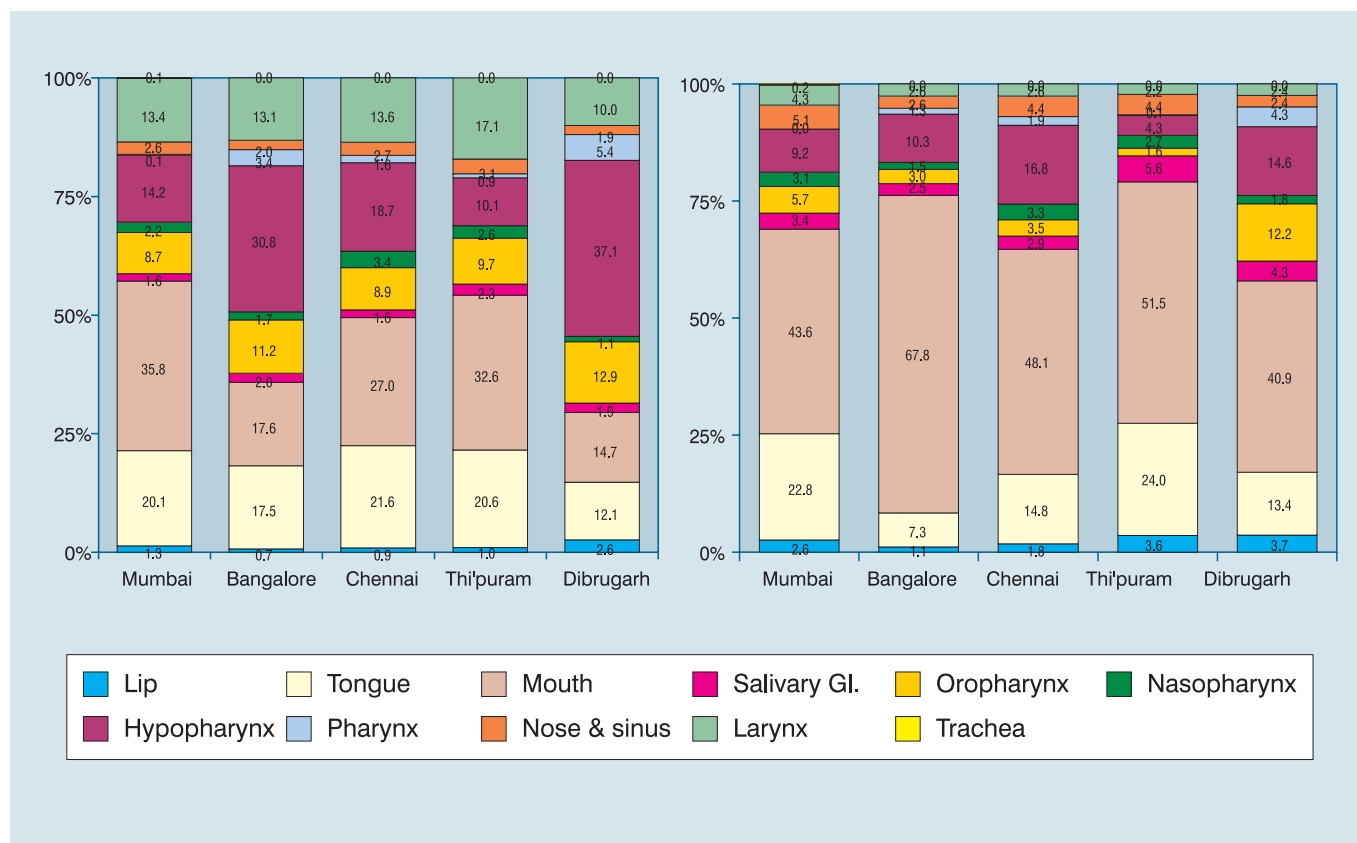
**Females**

Sites of cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	62	0.3	21	0.2	26	0.2	48	0.4	6	0.7
Tongue	550	2.6	142	1.1	218	1.8	324	2.8	22	2.4
Mouth	1054	5.0	1323	10.5	706	5.7	696	5.9	67	7.4
Salivary Gl.	83	0.4	49	0.4	42	0.3	76	0.7	7	0.8
Oropharynx	138	0.7	59	0.5	51	0.4	22	0.2	20	2.2
Nasopharynx	74	0.4	29	0.2	49	0.4	37	0.3	3	0.3
Hypopharynx	222	1.1	201	1.6	247	2.0	58	0.5	24	2.6
Pharynx,etc.	0	0.0	25	0.2	28	0.2	1	0.0	7	0.8
Nose & Sinus	123	0.6	50	0.4	64	0.5	59	0.5	4	0.4
Larynx	105	0.5	51	0.4	38	0.3	30	0.3	4	0.4
Trachea	5	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Head & Neck	2416	11.4	1950	15.4	1469	11.8	1351	11.5	164	18.0
<b>All Sites</b>	<b>21121</b>	<b>100.0</b>	<b>12636</b>	<b>100.0</b>	<b>12417</b>	<b>100.0</b>	<b>11745</b>	<b>100.0</b>	<b>910</b>	<b>100.0</b>

**Fig 14.2 : Proportion (%) of Head and Neck Cancers Relative to All Sites (2001-2003)**



**Fig.14.3 : Stack (100%) diagram showing Proportion of Specific Head and Neck Cancer Sites Relative to All Head and Neck Cancers (2001-2003)**



**Table 14.3: Number(#) and Relative Proportion(%) of specific Head and Neck sites relative to all Head & Neck cancers (2001-2003)****Males**

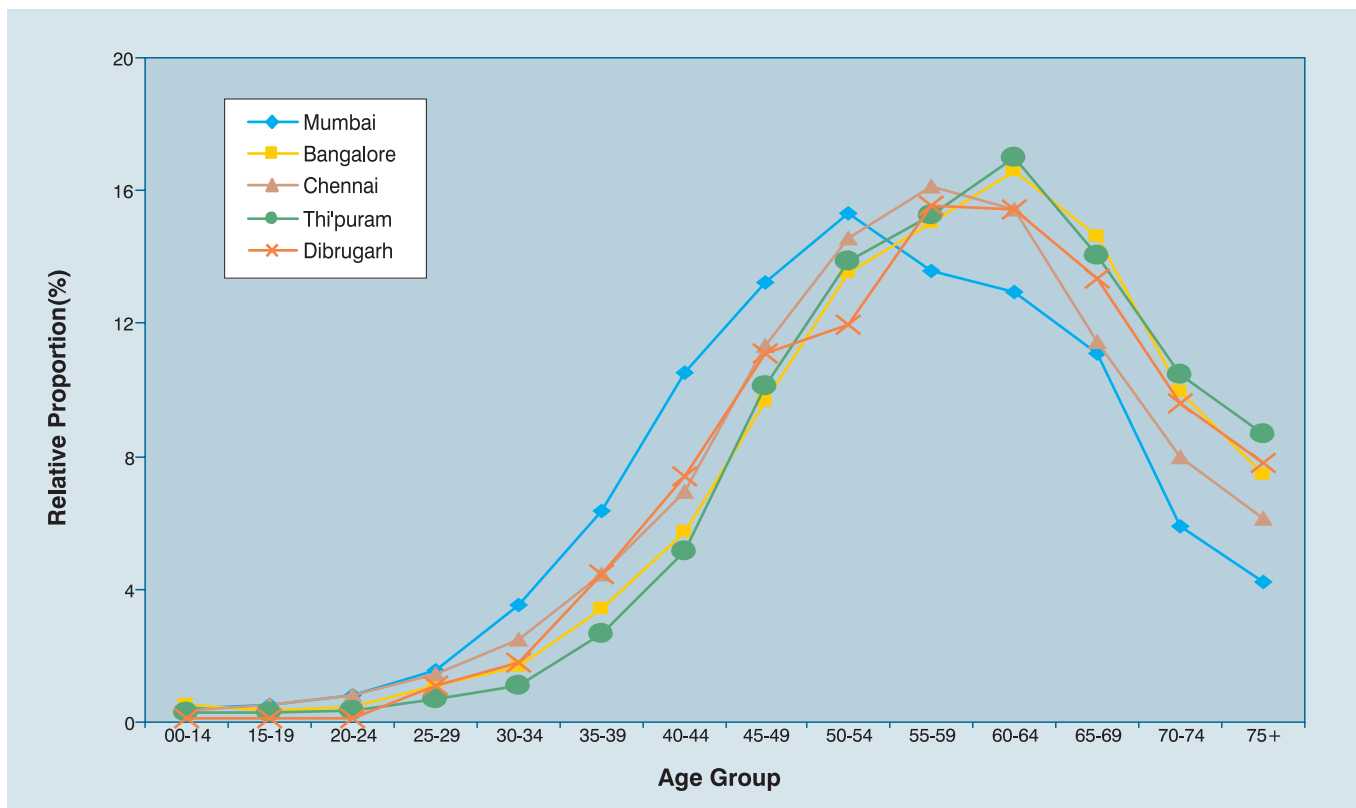
Sites of cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	124	1.4	24	0.7	31	0.9	38	1.0	19	2.6
Tongue	1845	20.1	569	17.5	732	21.6	775	20.6	87	12.1
Mouth	3289	35.8	573	17.6	916	27.0	1230	32.6	106	14.7
Salivary Gl.	143	1.6	64	2.0	54	1.6	88	2.3	14	2.0
Oropharynx	796	8.7	366	11.2	303	8.9	365	9.7	93	12.9
Nasopharynx	203	2.2	54	1.7	117	3.5	98	2.6	8	1.1
Hypopharynx	1301	14.2	1004	30.8	633	18.7	380	10.0	267	37.1
Pharynx,etc.	12	0.1	110	3.4	53	1.6	33	0.9	39	5.4
Nose & Sinus	238	2.6	64	2.0	92	2.7	118	3.1	14	2.0
Larynx	1234	13.4	428	13.1	460	13.6	643	17.0	72	10.0
Trachea	9	0.1	1	0.0	1	0.0	1	0.0	0	0.0
<b>Head &amp; Neck</b>	<b>9194</b>	<b>100.0</b>	<b>3257</b>	<b>100.0</b>	<b>3392</b>	<b>100.0</b>	<b>3769</b>	<b>100.0</b>	<b>719</b>	<b>100.0</b>

**Females**

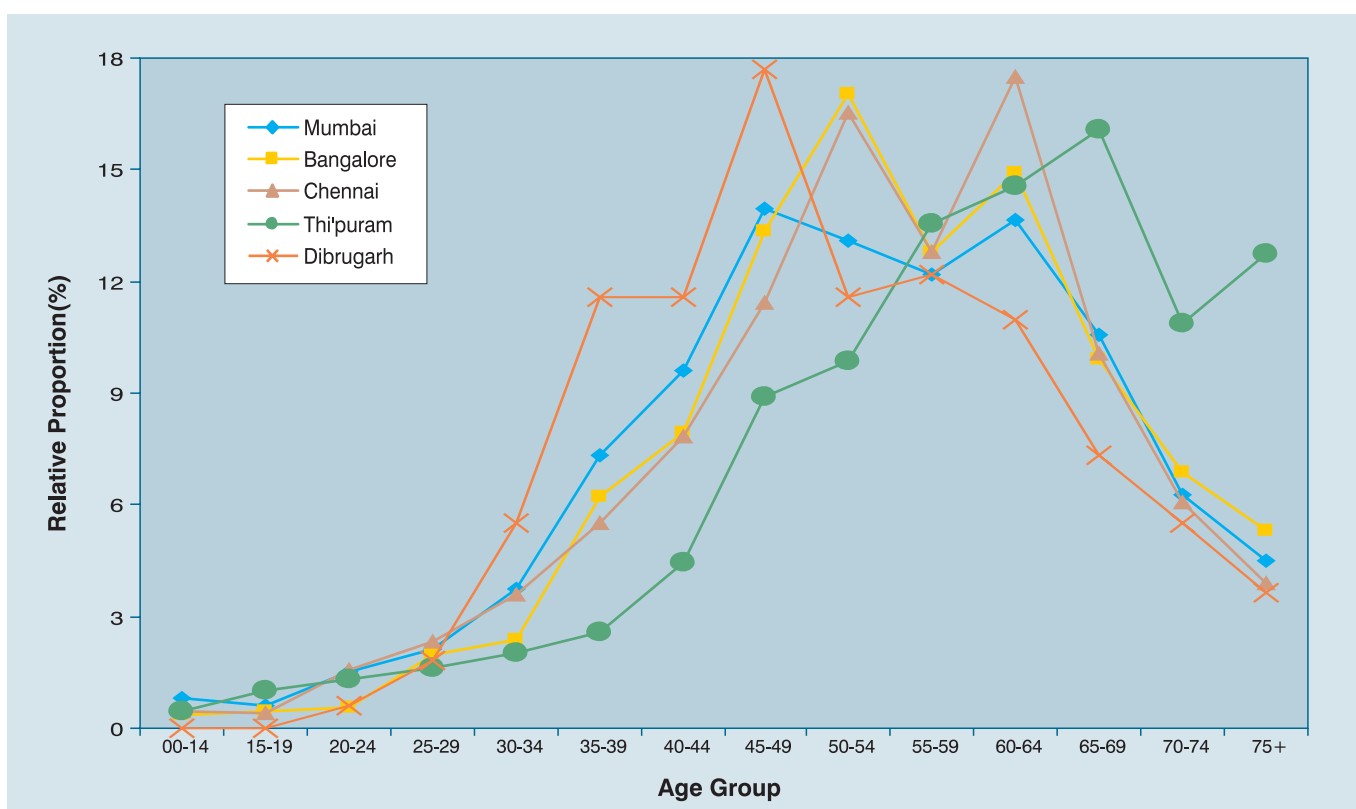
Sites of cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	62	2.6	21	1.1	26	1.8	48	3.6	6	3.7
Tongue	550	22.8	142	7.3	218	14.8	324	24.0	22	13.4
Mouth	1054	43.6	1323	67.9	706	48.1	696	51.5	67	40.9
Salivary Gl.	83	3.4	49	2.5	42	2.9	76	5.6	7	4.3
Oropharynx	138	5.7	59	3.0	51	3.5	22	1.6	20	12.2
Nasopharynx	74	3.1	29	1.5	49	3.3	37	2.7	3	1.8
Hypopharynx	222	9.2	201	10.3	247	16.8	58	4.3	24	14.6
Pharynx,etc.	0	0.0	25	1.3	28	1.9	1	0.1	7	4.3
Nose & Sinus	123	5.1	50	2.6	64	4.4	59	4.4	4	2.4
Larynx	105	4.4	51	2.6	38	2.6	30	2.2	4	2.4
Trachea	5	0.2	0	0.0	0	0.0	0	0.0	0	0.0
<b>Head &amp; Neck</b>	<b>2416</b>	<b>100.0</b>	<b>1950</b>	<b>100.0</b>	<b>1469</b>	<b>100.0</b>	<b>1351</b>	<b>100.0</b>	<b>164</b>	<b>100.0</b>

**Fig. 14.4: Relative Proportion(%) of Head and Neck Cancers by Five Year Age Group (2001-2003)**

**Males**



**Females**



**Table 14.4: Number(#) and Relative Proportion(%) of Head and Neck Cancers by Five-Year Age Group (2001-2003)****Males**

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
00-14	39	0.4	17	0.5	12	0.4	11	0.3	1	0.1
15-19	46	0.5	11	0.3	18	0.5	11	0.3	1	0.1
20-24	73	0.8	15	0.5	27	0.8	13	0.3	1	0.1
25-29	144	1.6	35	1.1	49	1.4	26	0.7	8	1.1
30-34	323	3.5	55	1.7	84	2.5	41	1.1	13	1.8
35-39	586	6.4	112	3.4	150	4.4	101	2.7	32	4.5
40-44	965	10.5	186	5.7	236	7.0	194	5.2	53	7.4
45-49	1217	13.2	314	9.6	384	11.3	382	10.1	80	11.1
50-54	1408	15.3	440	13.5	495	14.6	522	13.9	86	12.0
55-59	1248	13.6	489	15.0	547	16.1	575	15.3	112	15.6
60-64	1193	13.0	540	16.6	523	15.4	641	17.0	111	15.4
65-69	1019	11.1	477	14.7	389	11.5	530	14.1	96	13.4
70-74	544	5.9	324	10.0	270	8.0	395	10.5	69	9.6
75+	389	4.2	242	7.4	208	6.1	327	8.7	56	7.8
<b>All Ages</b>	<b>9194</b>	<b>100.0</b>	<b>3257</b>	<b>100.0</b>	<b>3392</b>	<b>100.0</b>	<b>3769</b>	<b>100.0</b>	<b>719</b>	<b>100.0</b>

<b>Mean</b>	53.5	57.8	55.8	58.7	57.4
<b>SD</b>	12.77	12.42	12.66	11.78	12.12

**Females**

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
00-14	20	0.8	7	0.4	7	0.5	6	0.4	0	0.0
15-19	15	0.6	9	0.5	6	0.4	14	1.0	0	0.0
20-24	37	1.5	11	0.6	23	1.6	18	1.3	1	0.6
25-29	51	2.1	38	2.0	34	2.3	22	1.6	3	1.8
30-34	91	3.8	46	2.4	53	3.6	27	2.0	9	5.5
35-39	177	7.3	121	6.2	81	5.5	35	2.6	19	11.6
40-44	232	9.6	155	8.0	115	7.8	60	4.4	19	11.6
45-49	337	14.0	260	13.4	168	11.4	120	8.9	29	17.7
50-54	316	13.1	332	17.0	243	16.5	133	9.8	19	11.6
55-59	295	12.2	249	12.8	188	12.8	183	13.6	20	12.2
60-64	330	13.7	291	14.9	257	17.5	197	14.6	18	11.0
65-69	255	10.6	193	9.9	148	10.1	217	16.1	12	7.3
70-74	151	6.3	134	6.9	89	6.1	147	10.9	9	5.5
75+	109	4.5	104	5.3	57	3.9	172	12.7	6	3.7
<b>All Ages</b>	<b>2416</b>	<b>100.0</b>	<b>1950</b>	<b>100.0</b>	<b>1469</b>	<b>100.0</b>	<b>1351</b>	<b>100.0</b>	<b>164</b>	<b>100.0</b>

<b>Mean</b>	52.9	54.5	53.8	58.9	51.3
<b>SD</b>	13.74	12.65	13.02	13.95	12.48

**Table 14.5(a): Number(#) and Relative Proportion(%) of Head and Neck Cancers based on different Methods of Diagnosis (2001-2003) - Males**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	8672	94.3	17	0.2	3	0.0	502	5.5	9194	100.0
Bangalore	3110	95.5	94	2.9	7	0.2	46	1.4	3257	100.0
Chennai	2599	76.6	784	23.1	6	0.2	3	0.1	3392	100.0
Thi'puram	3642	96.6	111	3.0	8	0.2	8	0.2	3769	100.0
Dibrugarh	702	97.6	12	1.7	3	0.4	2	0.3	719	100.0

**Table 14.5(b): Number(#) and Relative Proportion(%) of Head and Neck Cancers based on different Methods of Diagnosis (2001-2003) - Females**

Registry	Microscopic		Clinical		All imaging techniques		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	2305	95.4	2	0.1	1	0.0	108	4.5	2416	100.0
Bangalore	1881	96.5	60	3.1	0	0.0	9	0.5	1950	100.0
Chennai	1074	73.1	391	26.6	4	0.3	0	0.0	1469	100.0
Thi'puram	1287	95.3	61	4.5	2	0.2	1	0.1	1351	100.0
Dibrugarh	163	99.4	1	0.6	0	0.0	0	0.0	164	100.0

**Table. 14.6: Number (#) and Relative Proportion (%) of Head and Neck cancers based on Broad Groups of Treatment (2001-03)**

	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Prior Tmt. Only	901	9.8	166	5.1	590	17.4	113	3.0	1	0.1
Prior & Tmt. at RI	402	4.4	56	1.7	45	1.3	265	7.0	15	2.1
Tmt. Only at RI	3130	34.1	1520	46.7	1171	34.5	2801	74.3	668	92.9
No CDT	4752	51.7	1514	46.5	1585	46.7	589	15.6	35	4.9
<b>Total Patients*</b>	<b>9185</b>	<b>100.0</b>	<b>3256</b>	<b>100.0</b>	<b>3391</b>	<b>100.0</b>	<b>3768</b>	<b>100.0</b>	<b>719</b>	<b>100.0</b>
<b>Females</b>										
Prior Tmt. Only	207	8.6	67	3.4	209	14.2	46	3.4	0	0.0
Prior & Tmt. at RI	127	5.3	37	1.9	33	2.3	128	9.5	7	4.3
Tmt. Only at RI	891	37.0	965	49.5	515	35.1	971	71.9	149	90.9
No CDT	1186	49.2	881	45.2	712	48.5	206	15.3	8	4.9
<b>Total Patients*</b>	<b>2411</b>	<b>100.0</b>	<b>1950</b>	<b>100.0</b>	<b>1469</b>	<b>100.0</b>	<b>1351</b>	<b>100.0</b>	<b>164</b>	<b>100.0</b>

\* - Total Number of patients excluding Trachea cancer.



**Table.14.7 (a) : Number (#) and Relative Proportion (%) of Head and Neck cancer patients according to Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03)****Males**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
<b>Mumbai</b>	2155	27.3	4833	61.3	6988	88.6	295	3.7	606	7.7	7889	100.0
<b>Bangalore</b>	201	6.6	2533	83.5	2734	90.1	242	8.0	59	1.9	3035	100.0
<b>Chennai</b>	466	16.9	2261	82.0	2727	98.9	30	1.1	0	0.0	2757	100.0
<b>Thi'puram</b>	610	18.0	2735	80.7	3345	98.6	46	1.4	0	0.0	3391	100.0
<b>Dibrugarh</b>	47	6.9	622	91.5	669	98.4	5	0.7	6	0.9	680	100.0

**Table.14.7 (b) : Number (#) and Relative Proportion (%) of Head and Neck cancer patients according to Clinical Extent of Disease (Excludes Patients Previously Treated) (2001-03)****Females**

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
<b>Mumbai</b>	624	30.0	1199	57.6	1823	87.6	90	4.3	168	8.1	2081	100.0
<b>Bangalore</b>	114	6.2	1545	83.7	1659	89.9	150	8.1	37	2.0	1846	100.0
<b>Chennai</b>	188	15.3	1031	84.0	1219	99.4	8	0.7	0	0.0	1227	100.0
<b>Thi'puram</b>	215	18.3	939	79.8	1154	98.1	23	2.0	0	0.0	1177	100.0
<b>Dibrugarh</b>	14	9.1	137	89.0	151	98.1	1	0.7	2	1.3	154	100.0

Table 14.6 gives an idea of the broad treatment groups. Among males "treatment only at RI" ranged from 34.1% in Mumbai to 92.9% in Dibrugarh while in females it ranged from 35.1% in Chennai to 90.9% in Dibrugarh. Over 80% of cancers in males had regional spread of the disease at the time of diagnosis except Mumbai where 60 % had regional spread (Table 14.7).

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

**Table 14.8(a): Number(#) & Relative proportion (%) of Head and Neck cancer patients according to Type of Treatment given (2001-2003) - Males**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>3134</b>	<b>100.0</b>	<b>1521</b>	<b>100.0</b>	<b>1171</b>	<b>100.0</b>	<b>2802</b>	<b>100.0</b>	<b>668</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery ( S )	847	27.0	108	7.1	58	5.0	189	6.8	9	1.4
Radiotherapy ( R )	673	21.5	837	55.0	788	67.3	1447	51.6	611	91.5
Chemotherapy ( C )	83	2.7	61	4.0	5	0.4	83	3.0	9	1.4
S+R	1108	35.4	246	16.2	233	19.9	361	12.9	26	3.9
S+C	10	0.3	13	0.9	0	0.0	9	0.3	4	0.6
R+C	353	11.3	228	15.0	70	6.0	634	22.6	5	0.8
S+R+C	60	1.9	27	1.8	16	1.4	67	2.4	4	0.6
Others	0	0.0	1	0.1	1	0.1	12	0.4	0	0.0
<b>Modality of therapy</b>										
Single	1603	51.2	1006	66.1	851	72.7	1719	61.4	629	94.2
Combination	1531	48.9	514	33.8	319	27.3	1071	38.2	39	5.8
<b>Type of Any Treatment</b>										
Any S	2025	64.6	394	25.9	307	26.2	626	22.3	43	6.4
Any R	2194	70.0	1338	88.0	1107	94.5	2509	89.5	646	96.7
Any C	506	16.2	329	21.6	91	7.8	793	28.3	22	3.3

**Table 14.8(b): Number(#) & Relative proportion (%) of Head and Neck cancer patients according to Type of Treatment given (2001-2003) - Females**

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>Total patients</b>	<b>892</b>	<b>100.0</b>	<b>965</b>	<b>100.0</b>	<b>515</b>	<b>100.0</b>	<b>971</b>	<b>100.0</b>	<b>149</b>	<b>100.0</b>
<b>Specific Treatments</b>										
Surgery ( S )	285	32.0	103	10.7	16	3.1	119	12.3	1	0.7
Radiotherapy ( R )	134	15.0	370	38.3	358	69.5	467	48.1	134	89.9
Chemotherapy ( C )	27	3.0	122	12.6	2	0.4	33	3.4	2	1.3
S+R	369	41.4	215	22.3	101	19.6	190	19.6	8	5.4
S+C	3	0.3	15	1.6	1	0.2	5	0.5	1	0.7
R+C	68	7.6	99	10.3	36	7.0	126	13.0	3	2.0
S+R+C	6	0.7	41	4.3	1	0.2	21	2.2	0	0.0
Others	0	0.0	0	0.0	0	0.0	10	1.0	0	0.0
<b>Modality of therapy</b>										
Single	446	50.0	595	61.7	376	73.0	619	63.8	137	92.0
Combination	446	50.0	370	38.3	139	27.0	342	35.2	12	8.0
<b>Type of Any Treatment</b>										
Any S	663	74.3	374	38.8	119	23.1	335	34.5	10	6.7
Any R	577	64.7	725	75.1	496	96.3	804	82.8	145	97.3
Any C	104	11.7	277	28.7	40	7.8	185	19.0	6	4.0

# 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 (2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	0	0.0	1	0.2	1	0.2	1	0.1	0	0.0
Carcinomas	29	1.7	38	9.3	84	15.7	10	1.3	4	4.7
Verrucous Carcinomas	7	0.4	4	1.0	0	0.0	6	0.8	0	0.0
Squamous Cell Carc.	1678	97.3	364	88.8	447	83.6	740	97.5	82	95.4
Adeno Carcinoma	5	0.3	1	0.2	2	0.4	1	0.1	0	0.0
Others	5	0.3	2	0.5	1	0.2	1	0.1	0	0.0
<b>All Histologic Types</b>	<b>1724</b>	<b>100.0</b>	<b>410</b>	<b>100.0</b>	<b>535</b>	<b>100.0</b>	<b>759</b>	<b>100.0</b>	<b>86</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Carcinomas	4	0.8	5	5.1	2	9.5	3	1.0	14	9.2
Verrucous Carcinomas	2	0.4	0	0.0	0	0.0	3	1.0	2	1.3
Squamous Cell Carcinoma	499	96.7	92	92.9	17	81.0	305	96.8	132	86.8
Adeno Carcinoma	9	1.7	1	1.0	2	9.5	2	0.6	3	2.0
Others	2	0.4	1	1.0	0	0.0	2	0.6	1	0.7
<b>All Histologic Types</b>	<b>516</b>	<b>100.0</b>	<b>99</b>	<b>100.0</b>	<b>21</b>	<b>100.0</b>	<b>315</b>	<b>100.0</b>	<b>152</b>	<b>100.0</b>

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

**Table 15.2: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	2	0.1	2	0.5	1	0.2	3	0.3	0	0.0
Carcinomas	21	0.7	42	9.7	114	17.8	15	1.3	4	3.9
Verrucous Carcinomas	61	1.9	8	1.8	10	1.6	19	1.6	2	1.9
Squamous Cell Carc.	3018	96.0	372	85.7	491	76.6	1110	95.5	98	94.2
Adeno Carcinoma	18	0.6	5	1.2	15	2.3	3	0.3	0	0.0
Others	24	0.8	5	1.2	10	1.6	12	1.0	0	0.0
<b>All Histologic Types</b>	<b>3144</b>	<b>100.0</b>	<b>434</b>	<b>100.0</b>	<b>641</b>	<b>100.0</b>	<b>1162</b>	<b>100.0</b>	<b>104</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	0	0.0	0	0.0	1	0.2	0	0.0	0	0.0
Carcinomas	7	0.7	70	6.8	86	18.4	5	0.8	1	1.5
Verrucous Carcinomas	11	1.1	30	2.9	5	1.1	16	2.5	1	1.5
Squamous Cell Carc.	974	95.0	922	89.0	366	78.2	607	93.2	65	97.0
Adeno Carcinoma	13	1.3	6	0.6	5	1.1	11	1.7	0	0.0
Others	20	2.0	8	0.8	6	1.3	12	1.8	0	0.0
<b>All Histologic Types</b>	<b>1025</b>	<b>100.0</b>	<b>1036</b>	<b>100.0</b>	<b>468</b>	<b>100.0</b>	<b>651</b>	<b>100.0</b>	<b>67</b>	<b>100.0</b>

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

**Table 15.3: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	0	0.0	0	0.0	2	0.3	0	0.0	0	0.0
Carcinomas	73	6.1	60	8.2	61	9.4	44	7.0	5	2.1
Squamous Cell Carc.	967	80.7	597	81.5	517	79.8	462	73.2	224	94.5
Adeno Carcinoma	136	11.4	63	8.6	49	7.6	104	16.6	8	3.4
Others	22	1.8	13	1.8	19	2.9	21	3.3	0	0.0
<b>All Histologic Types</b>	<b>1198</b>	<b>100.0</b>	<b>733</b>	<b>100.0</b>	<b>648</b>	<b>100.0</b>	<b>631</b>	<b>100.0</b>	<b>237</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	1	0.2	2	0.3	0	0	0	0	0	0.0
Carcinomas	35	5.1	38	6.3	37	9.6	15	9.0	2	1.6
Verrucous Carcinomas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Squamous Cell Carc.	596	88.4	540	89.1	324	83.9	126	75.5	123	96.1
Adeno Carcinoma	30	4.5	18	3.0	16	4.2	19	11.4	3	2.3
Others	12	1.8	8	1.3	9	2.3	7	4.2	0	0.0
<b>All Histologic Types</b>	<b>674</b>	<b>100.0</b>	<b>606</b>	<b>100.0</b>	<b>386</b>	<b>100.0</b>	<b>167</b>	<b>100.0</b>	<b>128</b>	<b>100.0</b>

## Oesophagus (ICD-10: C15)

**Table 15.4: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	2	0.1	2	0.2	1	0.1	1	0.1	0	0.0
Carcinomas	61	3.1	118	11.3	107	14.7	39	5.4	24	6.9
Squamous Cell Carc.	1920	96.5	924	88.2	617	84.8	678	93.0	323	92.3
Adeno Carcinoma	3	0.2	1	0.1	2	0.3	7	1.0	1	0.3
Others	3	0.2	3	0.3	1	0.1	4	0.6	2	0.6
<b>All Histologic Types</b>	<b>1989</b>	<b>100.0</b>	<b>1048</b>	<b>100.0</b>	<b>728</b>	<b>100.0</b>	<b>729</b>	<b>100.0</b>	<b>350</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Carcinomas	14	4.0	14	7.2	27	10.6	2	2.6	6	13.6
Squamous Cell Carc.	329	94.8	180	92.8	229	89.5	72	94.7	37	84.1
Adeno Carcinoma	1	0.3	0	0.0	0	0.0	1	1.3	0	0.0
Others	3	0.9	0	0.0	1	0.4	1	1.3	1	2.3
<b>All Histologic Types</b>	<b>347</b>	<b>100.0</b>	<b>194</b>	<b>100.0</b>	<b>257</b>	<b>100.0</b>	<b>76</b>	<b>100.0</b>	<b>44</b>	<b>100.0</b>

## Stomach (ICD-10: C16)

**Table 15.5: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	2	0.3	1	0.2	2	0.3	1	0.2	1	1.3
Carcinomas	26	3.3	34	7.9	120	15.6	56	10.6	1	1.3
Adeno Carcinoma	550	70.4	329	76.5	521	67.8	358	67.4	65	86.7
Papillary Adeno Carc.	2	0.3	4	0.9	9	1.2	5	0.9	2	2.7
Mucinous Adeno Carc.	10	1.3	17	4.0	47	6.1	43	8.1	0	0.0
Signet Ring Cell Carc.	153	19.6	29	6.7	47	6.1	38	7.2	0	0.0
Sarcoma	12	1.5	1	0.2	5	0.7	10	1.9	0	0.0
Others	26	3.3	15	3.5	17	2.2	20	3.8	6	8.0
<b>All Histologic Types</b>	<b>781</b>	<b>100.0</b>	<b>430</b>	<b>100.0</b>	<b>768</b>	<b>100.0</b>	<b>531</b>	<b>100.0</b>	<b>75</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	2	0.7	0	0.0	2	0.8	1	0.6	0	0.0
Carcinomas	7	2.4	14	7.2	56	21.2	12	7.6	2	7.4
Papillary Adeno Carc.	0	0.0	2	1.0	7	2.7	1	0.6	0	0.0
Adeno Carcinoma	167	57.6	131	67.5	157	59.5	93	58.9	23	85.2
Sarcoma	6	2.1	1	0.5	2	0.8	2	1.3	0	0.0
Signet Ring Cell Carc.	94	32.4	29	15.0	0	0.0	21	13.3	0	0.0
Mucinous Adeno Carc.	3	1.0	4	2.1	26	9.9	19	12.0	2	7.4
Others	11	3.8	13	6.7	14	5.3	9	5.7	0	0.0
<b>All Histologic Types</b>	<b>290</b>	<b>100.0</b>	<b>194</b>	<b>100.0</b>	<b>264</b>	<b>100.0</b>	<b>158</b>	<b>100.0</b>	<b>27</b>	<b>100.0</b>

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

**Table 15.6: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	2	0.1	15	3.0	3	0.5	31	2.1	0	0.0
Large Cell Carcinoma	22	1.2	24	4.8	8	1.5	9	0.6	0	0.0
Undiff/Anaplastic Carc.	9	0.5	1	0.2	1	0.2	8	0.5	2	4.6
Small Cell Carcinoma	168	8.8	92	18.2	41	7.4	163	10.9	1	2.3
Non Small cell carc.	266	14.0	87	17.2	22	4.0	89	6.0	1	2.3
Sqamous cell Carc.	530	27.9	85	16.8	129	23.4	374	25.0	17	38.6
Other Carcinomas	106	5.6	77	15.3	171	31.0	401	26.8	3	6.8
Adeno Carcinoma	775	40.8	113	22.4	170	30.9	404	27.0	20	45.5
Others	22	1.2	11	2.2	6	1.2	17	1.1	0	0.0
<b>All Histologic Types</b>	<b>1900</b>	<b>100.0</b>	<b>505</b>	<b>100.0</b>	<b>551</b>	<b>100.0</b>	<b>1496</b>	<b>100.0</b>	<b>44</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	0	0.0	3	2.8	2	1.4	8	3.8	0	0.0
Large Cell Carcinoma	4	0.8	9	8.4	0	0.0	2	0.9	0	0.0
Undiff/Anaplastic Carc.	5	1.0	1	0.9	2	1.4	1	0.5	0	0.0
Small Cell Carcinoma	18	3.8	10	9.4	2	1.4	3	1.4	0	0.0
Non Small cell carc.	61	12.7	13	12.2	6	4.1	20	9.4	0	0.0
Sqamous cell Carc.	61	12.7	4	3.7	8	5.4	30	14.2	7	58.3
Other Carcinomas	22	4.6	14	13.9	55	37.2	43	20.3	2	16.7
Adeno Carcinoma	303	63.1	50	46.7	73	49.3	101	47.6	3	25.0
Others	6	1.3	3	2.8	0	0.0	4	1.9	0	0.0
<b>All Histologic Types</b>	<b>480</b>	<b>100.0</b>	<b>107</b>	<b>100.0</b>	<b>148</b>	<b>100.0</b>	<b>212</b>	<b>100.0</b>	<b>12</b>	<b>100.0</b>

## Bone (ICD-10: C40-C41)

**Table 15.7: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	3	0.6	2	1.7	0	0.0	3	2.0	0	0.0
Sarcomas	10	2.1	0	0.0	1	0.5	3	2.0	2	8.7
Osteosarcomas	300	62.5	49	42.6	109	51.7	79	51.3	5	21.7
Chondrosarcomas	63	13.1	9	7.8	18	8.5	13	8.4	2	8.7
Giant Cell Tumour	1	0.2	0	0.0	15	7.1	1	0.7	2	8.7
Ewing's Sarcoma	73	15.2	34	29.6	40	19.0	36	23.4	2	8.7
Chondroma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	30	6.3	21	18.3	28	13.3	19	12.3	10	43.5
<b>All Histologic Types</b>	<b>480</b>	<b>100.0</b>	<b>115</b>	<b>100.0</b>	<b>211</b>	<b>100.0</b>	<b>154</b>	<b>100.0</b>	<b>23</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	0	0.0	0	0.0	1	1.0	2	2.1	0	0.0
Sarcomas	7	2.9	1	1.2	0	0.0	0	0.0	0	0.0
Osteosarcomas	144	59.5	28	34.2	46	47.4	39	41.5	0	0.0
Chondrosarcomas	29	12.0	7	8.5	9	9.3	12	12.8	1	10.0
Giant Cell Tumour	2	0.8	6	7.3	6	6.2	0	0.0	0	0.0
Ewing's Sarcoma	45	18.6	16	19.5	22	22.7	25	26.6	4	40.0
Chondroma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	15	6.2	24	29.3	13	13.4	16	17.0	5	50.0
<b>All Histologic Types</b>	<b>242</b>	<b>100.0</b>	<b>82</b>	<b>100.0</b>	<b>97</b>	<b>100.0</b>	<b>94</b>	<b>100.0</b>	<b>10</b>	<b>100.0</b>



## Soft Tissue (ICD 10 : C47 & C49)

**Table 15.8: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	4	0.5	0	0.0	0	0.0	3	1.7	0	0.0
Sarcoma NOS	59	8.0	6	6.7	31	19.6	9	5.2	0	0.0
Spindle Cell Sarcoma	172	23.3	25	27.8	34	21.5	44	25.4	1	14.3
Pleomorphic Cell Sarc.	42	5.7	13	14.4	9	5.7	18	10.4	0	0.0
Fibrous Histiocytoma	10	1.4	7	7.8	14	8.9	5	2.9	0	0.0
Fibrosarcoma	13	1.8	0	0.0	1	0.6	6	3.5	1	14.3
Liposarcoma	27	3.7	5	5.6	4	2.5	14	8.1	0	0.0
Leiomyosarcoma	26	3.5	3	3.3	4	2.5	2	1.2	0	0.0
Rhabdomyosarcoma	54	7.3	4	4.4	18	11.4	16	9.3	1	14.3
Synovial Sarcoma	65	8.8	14	15.6	14	8.9	23	13.3	0	0.0
Neurofibrosarcoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Neurilemmona	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	267	36.1	13	14.4	29	18.4	33	19.1	4	57.1
<b>All Histologic Types</b>	<b>739</b>	<b>100.0</b>	<b>90</b>	<b>100.0</b>	<b>158</b>	<b>100.0</b>	<b>173</b>	<b>100.0</b>	<b>7</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	1	0.3	0	0.0	0	0.0	3	2.1	0	0.0
Sarcoma NOS	40	11.6	4	7.6	27	24.8	11	7.8	0	0.0
Spindle Cell Sarcoma	61	17.7	10	18.9	21	19.3	42	29.6	0	0.0
Pleomorphic Cell Sarc.	16	4.6	6	11.3	4	3.7	12	8.5	0	0.0
Fibrous Histiocytoma	8	2.3	3	5.7	10	9.3	5	3.5	1	33.3
Fibrosarcoma	2	0.6	1	1.9	6	5.5	7	4.9	0	0.0
Liposarcoma	10	2.9	4	7.6	3	2.8	9	6.3	0	0.0
Leiomyosarcoma	13	3.8	0	0.0	0	0.0	2	1.4	0	0.0
Rhabdomyosarcoma	12	3.5	2	3.8	6	5.5	9	6.3	0	0.0
Synovial Sarcoma	41	11.9	13	24.5	7	6.4	15	10.6	0	0.0
Neurofibrosarcoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Neurilemmona	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Others	141	40.9	10	18.9	25	22.9	27	19.0	2	66.7
<b>All Histologic Types</b>	<b>345</b>	<b>100.0</b>	<b>53</b>	<b>100.0</b>	<b>109</b>	<b>100.0</b>	<b>142</b>	<b>100.0</b>	<b>3</b>	<b>100.0</b>

## Female Breast (ICD-10: C50)

**Table 15.9: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Neoplasm Malignant	2	0.0	7	0.5	4	0.2	12	0.4	0	0.0
Carcinomas	86	1.7	72	5.4	216	8.4	272	8.4	2	1.6
Papillary Carcinoma	28	0.5	3	0.2	9	0.4	20	0.6	1	0.8
Squamous Cell Carc.	3	0.1	8	0.6	0	0.0	0	0.0	0	0.0
Adeno Carcinoma NOS	52	1.0	4	0.3	3	0.1	13	0.4	3	2.4
Mucinous Adeno Carc.	33	0.6	10	0.8	26	1.0	23	0.7	0	0.0
Infil. Duct Carcinoma	4745	91.6	1178	88.2	2186	85.1	2775	86.1	107	84.9
Medullary Carcinoma	2	0.0	12	0.9	22	0.9	9	0.3	2	1.6
Lobular Carcinoma	102	2.0	18	1.4	63	2.5	48	1.5	6	4.8
Paget's Disease	18	0.4	3	0.2	1	0.0	5	0.2	0	0.0
Cystosarc. Phyllodes	47	0.9	12	0.9	26	1.0	19	0.6	3	2.4
Others	63	1.2	8	0.6	13	0.5	26	0.8	2	1.6
<b>All Histologic Types</b>	<b>5181</b>	<b>100.0</b>	<b>1335</b>	<b>100.0</b>	<b>2569</b>	<b>100.0</b>	<b>3222</b>	<b>100.0</b>	<b>126</b>	<b>100.0</b>

## Cervix (ICD-10: C53)

**Table 15.10: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Neoplasm Malignant	3	0.1	5	0.2	2	0.1	1	0.1	0	0.0
Carcinomas	62	1.9	78	2.7	308	8.8	27	2.1	3	2.6
Non-Kerat Large Cell	201	6.2	1064	36.6	1535	44.0	404	31.4	53	45.3
Non-Kerat Small Cell	9	0.3	0	0.0	6	0.2	11	0.9	3	2.6
Kerat Squa Cell Carc. NOS	98	3.0	412	14.2	523	15.0	369	28.7	13	11.1
Squa Cell Carc. NOS	2631	80.5	1168	40.2	766	22.0	341	26.5	39	33.3
Other Squa Cell Carc.	2	0.1	1	0.03	13	0.4	3	0.2	0	0.0
Adeno Carcinoma	170	5.2	86	3.0	113	3.2	63	4.9	2	1.7
Adeno Squa Carcinoma	45	1.4	57	2.0	193	5.5	39	3.0	0	0.0
Others	47	1.4	34	1.2	27	0.8	28	2.2	4	3.4
<b>All Histologic Types</b>	<b>3268</b>	<b>100.0</b>	<b>2905</b>	<b>100.0</b>	<b>3486</b>	<b>100.0</b>	<b>1286</b>	<b>100.0</b>	<b>117</b>	<b>100.0</b>

## Ovary (ICD-10: C56)

**Table 15.11: Number(#) and Relative Proportion(%) of different histologic types (2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Neoplasm Malignant	0	0.0	10	2.8	3	0.3	10	1.5	0	0.0
Carcinomas	75	13.3	47	13.0	37	3.7	47	6.9	1	2.4
Other Carcinomas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Papillary Carcinoma	2	0.4	5	1.4	2	0.2	2	0.3	2	4.8
Squamous Cell Carc.	3	0.5	3	0.8	0	0.0	1	0.2	1	2.4
Adeno Carcinoma	251	44.4	79	21.9	414	40.9	165	24.1	16	38.1
Papillary Adeno Carc.	56	9.9	31	8.6	32	3.2	28	4.1	6	14.3
Clear Cell Adeno Carc.	3	0.5	0	0.0	25	2.5	25	3.7	3	7.1
Endometroid Carc.	3	0.5	3	0.8	84	8.3	63	9.2	1	2.4
Papi/Serous Cyst.	54	9.6	107	29.6	234	23.1	182	26.6	3	7.1
Muc Adeno/Cystadeno	59	10.4	20	5.5	49	4.8	67	9.8	2	4.8
Granulosa Cell Tumour	16	2.8	4	1.1	0	0.0	7	1.0	0	0.0
Sarcomas	2	0.4	6	1.7	2	0.2	0	0.0	0	0.0
Stromal Tumours	0	0.0	1	0.3	8	0.8	3	0.4	0	0.0
Dysgerminoma	6	1.1	16	4.4	43	4.3	33	4.8	2	4.8
Endodermal Sinus Tum.	5	0.9	5	1.4	26	2.6	16	2.3	0	0.0
Teratomas	6	1.1	5	1.4	23	2.3	13	1.9	1	2.4
Others	24	4.3	19	5.3	30	3.0	22	3.2	4	9.5
<b>All Histologic Types</b>	<b>565</b>	<b>100.0</b>	<b>361</b>	<b>100.0</b>	<b>1012</b>	<b>100.0</b>	<b>684</b>	<b>100.0</b>	<b>42</b>	<b>100.0</b>

## Kidney (ICD-10: C64)

**Table 15.12: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	1	0.4	1	1.5	0	0.0	3	2.7	0	0.0
Carcinoma NOS	10	4.1	4	6.1	4	4.9	10	9.1	0	0.0
Transitional Cell Carc.	3	1.2	1	1.5	4	4.8	7	6.4	0	0.0
Adenocarcinoma	7	2.9	0	0.0	1	1.2	1	0.9	0	0.0
Clear Cell Adeno Carc.	30	12.2	0	0.0	1	1.2	5	4.6	0	0.0
Renal Cell Carcinoma	145	58.9	38	57.6	58	70.7	53	48.2	6	66.7
Nephroblastoma	26	10.6	17	25.8	9	11.0	22	20.0	3	33.3
Others	24	9.8	5	7.6	5	6.1	9	8.2	0	0.0
<b>All Histologic Types</b>	<b>246</b>	<b>100.0</b>	<b>66</b>	<b>100.0</b>	<b>82</b>	<b>100.0</b>	<b>110</b>	<b>100.0</b>	<b>9</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	0	0.0	1	2.5	0	0.0	0	0.0	0	0.0
Carcinoma NOS	3	3.2	0	0.0	4	10.0	1	2.9	0	0.0
Transitional Cell Carc.	1	1.1	1	2.5	0	0.0	1	2.9	0	0.0
Adenocarcinoma	0	0.0	0	0.0	3	7.5	0	0.0	0	0.0
Clear Cell Adeno Carc.	4	4.2	0	0.0	3	7.5	2	5.9	0	0.0
Renal Cell Carcinoma	48	50.5	22	55.0	16	40.0	12	35.3	0	0.0
Nephroblastoma	31	32.6	13	32.5	12	30.0	15	44.1	0	0.0
Others	8	8.4	3	7.5	2	5.0	3	8.8	0	0.0
<b>All Histologic Types</b>	<b>95</b>	<b>100.0</b>	<b>40</b>	<b>100.0</b>	<b>40</b>	<b>100.0</b>	<b>34</b>	<b>100.0</b>	<b>0</b>	<b>0.0</b>

## Brain (ICD-10: C70-C72)

**Table 15.13: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	1	0.2	1	0.3	2	2.3	2	0.5	0	0.0
Gliomas	21	4.5	29	7.6	12	13.6	105	24.1	0	0.0
Ependymoma	27	5.8	9	2.4	3	3.4	10	2.3	1	7.1
Astrocytoma	225	48.0	164	42.8	34	38.6	194	44.6	8	57.1
Glioblastoma	91	19.4	86	22.5	26	29.6	55	12.6	1	7.1
Oligodendroglioma	31	6.6	33	8.6	1	1.1	12	2.8	0	0.0
Medulloblastoma	60	12.8	41	10.7	6	6.8	41	9.4	1	7.1
Others	13	2.8	20	5.2	4	4.6	16	3.7	3	21.4
<b>All Histologic Types</b>	<b>469</b>	<b>100.0</b>	<b>383</b>	<b>100.0</b>	<b>88</b>	<b>100.0</b>	<b>435</b>	<b>100.0</b>	<b>14</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	0	0.0	0	0.0	0	0.0	1	0.4	0	0.0
Gliomas	14	6.0	16	8.5	4	10.3	56	21.8	2	18.2
Ependymoma	18	7.7	3	1.6	0	0.0	5	2.0	0	0.0
Astrocytoma	104	44.6	74	39.4	16	41.0	98	38.1	4	36.4
Glioblastoma	55	23.6	44	23.4	8	20.5	36	14.0	0	0.0
Oligodendroglioma	14	6.0	20	10.6	3	7.7	10	3.9	1	9.1
Medulloblastoma	22	9.4	22	11.7	2	5.1	41	16.0	1	9.1
Others	6	2.6	9	4.8	6	15.4	10	3.9	3	27.3
<b>All Histologic Types</b>	<b>233</b>	<b>100.0</b>	<b>188</b>	<b>100.0</b>	<b>39</b>	<b>100.0</b>	<b>257</b>	<b>100.0</b>	<b>11</b>	<b>100.0</b>

## Thyroid Gland (ICD-10: C73)

**Table 15.14: Number(#) and Relative Proportion(%) of different histologic types (2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Neoplasm Malignant	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0
Other Carcinomas	17	5.8	12	7.5	8	4.7	12	3.1	2	13.3
Undifferentiated Carc.	15	5.1	2	1.2	16	9.4	12	3.1	2	13.3
Papillary Carc. NOS	29	9.9	118	73.3	117	68.4	325	84.0	2	13.3
Papillary Adeno Carc.	160	54.8	0	0.0	3	1.8	3	0.8	0	0.0
Follicular Carcinoma	27	9.3	10	6.2	12	7.0	15	3.9	7	46.7
Mixed Papi & Folli Carc.	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Medullary Carcinoma	38	13.0	16	9.9	11	6.4	16	4.1	2	13.3
Others	6	2.1	3	1.9	3	1.8	4	1.0	0	0.0
<b>All Histologic Types</b>	<b>292</b>	<b>100.0</b>	<b>161</b>	<b>100.0</b>	<b>171</b>	<b>100.0</b>	<b>387</b>	<b>100.0</b>	<b>15</b>	<b>100.0</b>
<b>FEMALES</b>										
Neoplasm Malignant	2	0.5	3	0.9	1	0.4	1	0.1	0	0.0
Other Carcinomas	22	5.2	11	3.3	22	9.2	21	1.9	2	25.0
Undifferentiated Carc.	26	6.1	12	3.6	7	2.9	20	1.9	5	62.5
Papillary Carc. NOS	62	14.6	259	78.5	169	70.1	916	84.8	1	12.5
Papillary Adeno Carc.	224	52.8	1	0.3	4	1.7	6	0.6	0	0.0
Follicular Carcinoma	64	15.1	24	7.3	22	9.1	81	7.5	0	0.0
Mixed Papi & Folli Carc.	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Medullary Carcinoma	18	4.3	16	4.9	10	4.2	25	2.3	0	0.0
Others	6	1.4	4	1.2	6	2.5	10	0.9	0	0.0
<b>All Histologic Types</b>	<b>424</b>	<b>100.0</b>	<b>330</b>	<b>100.0</b>	<b>241</b>	<b>100.0</b>	<b>1080</b>	<b>100.0</b>	<b>8</b>	<b>100.0</b>

## Tumours of Lymphoid and Haematopoietic System (ICD-10: C81-C85 and C90-C96)

**Table 15.15: Number(#) and Relative Proportion(%) of different histologic types (2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
NHL	1300	29.0	436	27.9	423	29.9	702	34.6	15	28.9
HD	518	11.6	233	14.9	176	12.5	175	8.6	5	9.6
MM	279	6.2	65	4.2	90	6.4	263	12.9	7	13.5
Leukaemias	2333	52.1	824	52.7	724	51.2	890	43.8	25	48.1
Others	51	1.1	7	0.5	0	0.0	2	0.1	0	0.0
<b>All Histologic Types</b>	<b>4481</b>	<b>100.0</b>	<b>1565</b>	<b>100.0</b>	<b>1413</b>	<b>100.0</b>	<b>2032</b>	<b>100.0</b>	<b>52</b>	<b>100.0</b>
<b>FEMALES</b>										
NHL	524	29.3	208	27.0	176	25.2	292	25.2	7	30.4
HD	159	8.9	59	7.7	66	9.4	86	7.4	2	8.7
MM	106	5.9	41	5.3	50	7.2	153	13.2	2	8.7
Leukaemias	977	54.7	460	59.7	407	58.2	628	54.2	12	52.2
Others	21	1.2	3	0.4	0	0.0	0	0.0	0	0.0
<b>All Histologic Types</b>	<b>1787</b>	<b>100.0</b>	<b>771</b>	<b>100.0</b>	<b>699</b>	<b>100.0</b>	<b>1159</b>	<b>100.0</b>	<b>23</b>	<b>100.0</b>

NHL = Non-Hodgkin's Lymphoma ; HD = Hodgkin's Disease ; MM = Multiple Myeloma

## Hodgkin's Disease (ICD-10 :C81)

**Table 15.16: Number(#) and Relative Proportion(%) of different histologic types (2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Hodgkins Disease NOS	89	17.2	55	23.6	71	40.3	17	9.7	2	40.0
HD LP	30	5.8	8	3.4	3	1.7	20	11.4	2	40.0
HD MC	200	38.6	71	30.5	52	29.6	78	44.6	0	0.0
HD LD	0	0.0	2	0.9	3	1.7	5	2.9	0	0.0
HD NS	199	38.4	97	41.6	47	26.7	55	31.4	1	20.0
<b>All Histologic Types</b>	<b>518</b>	<b>100.0</b>	<b>233</b>	<b>100.0</b>	<b>176</b>	<b>100.0</b>	<b>175</b>	<b>100.0</b>	<b>5</b>	<b>100.0</b>
<b>FEMALES</b>										
Hodgkins Disease NOS	28	17.6	18	30.5	19	28.8	10	11.6	1	50.0
HD LP	22	13.8	1	1.7	1	1.5	6	7.0	0	0.0
HD MC	55	34.6	14	23.7	19	28.8	25	29.1	0	0.0
HD LD	1	0.6	0	0.0	2	3.0	3	3.5	0	0.0
HD NS	53	33.3	26	44.1	25	37.9	42	48.8	1	50.0
<b>All Histologic Types</b>	<b>159</b>	<b>100.0</b>	<b>59</b>	<b>100.0</b>	<b>66</b>	<b>100.0</b>	<b>86</b>	<b>100.0</b>	<b>2</b>	<b>100.0</b>

LP = Lymphocyte Predominant

MC = Mixed Cellularity

LD = Lymphocyte Depletion

NS = Nodular Sclerosis

## Leukaemias (ICD-10: C91-C95)

**Table 15.17: Number(#) and Relative Proportion(%) of different histologic types(2001-2003)**

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Acute Lymph. Leuk.	755	32.4	336	40.8	231	31.9	373	41.9	6	24.0
Chronic Lymph. Leuk.	126	5.4	51	6.2	40	5.5	27	3.0	0	0.0
Other Lymph. Leuk.	22	0.9	12	1.5	4	0.6	6	0.7	2	8.0
Acute Myeloid Leuk.	485	20.8	192	23.3	169	23.3	262	29.4	8	32.0
Chronic Myeloid Leuk.	595	25.5	174	21.1	182	25.1	121	13.6	9	36.0
Other Myeloid Leuk.	61	2.6	12	1.5	16	2.2	31	3.5	0	0.0
Others	289	12.4	47	5.7	82	11.3	70	7.9	0	0.0
<b>All Histologic Types</b>	<b>2333</b>	<b>100.0</b>	<b>824</b>	<b>100.0</b>	<b>724</b>	<b>100.0</b>	<b>890</b>	<b>100.0</b>	<b>25</b>	<b>100.0</b>
<b>FEMALES</b>										
Acute Lymph. Leuk.	267	27.3	141	30.7	111	27.3	220	35.0	0	0.0
Chronic Lymph. Leuk.	26	2.7	21	4.6	12	3.0	22	3.5	0	0.0
Other Lymph. Leuk.	4	0.4	0	0.0	3	0.7	12	1.9	1	8.3
Acute Myeloid Leuk.	259	26.5	132	28.7	132	32.4	231	36.8	4	33.3
Chronic Myeloid Leuk.	274	28.1	126	27.4	106	26.0	82	13.1	6	50.0
Other Myeloid Leuk.	33	3.4	7	1.5	10	2.5	23	3.7	1	8.3
Others	114	11.7	33	7.2	33	8.1	38	6.1	0	0.0
<b>All Histologic Types</b>	<b>977</b>	<b>100.0</b>	<b>460</b>	<b>100.0</b>	<b>407</b>	<b>100.0</b>	<b>628</b>	<b>100.0</b>	<b>12</b>	<b>100.0</b>



# 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.

**16.1: Number(#) and Relative Proportion(%) by Educational Status  
(All Sites of Cancer) (2001-03)**

Educational Status	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Illiterate	3823	14.1	5359	49.6	1932	17.8	1163	8.9	583	36.4
Literate	217	0.8	715	6.6	704	6.5	535	4.1	507	31.6
Primary	5230	19.3	506	4.7	2579	23.7	3482	26.6	126	7.9
Middle	326	1.2	1634	15.1	1704	15.7	2508	19.1	85	5.3
Secondary	9152	33.8	1343	12.4	2668	24.6	2889	22.1	143	8.9
Technical	618	2.3	185	1.7	172	1.6	215	1.6	6	0.4
College	5232	19.3	583	5.4	958	8.8	1431	10.9	37	2.3
Below 5 years	603	2.2	235	2.2	149	1.4	292	2.2	21	1.3
Oth. & Unk.	1877	6.9	239	2.2	0	0.0	584	4.5	94	5.9
<b>Total</b>	<b>27078</b>	<b>100.0</b>	<b>10799</b>	<b>100.0</b>	<b>10866</b>	<b>100.0</b>	<b>13099</b>	<b>100.0</b>	<b>1602</b>	<b>100.0</b>
<b>FEMALES</b>										
Illiterate	6850	32.4	8872	70.2	5651	45.5	1711	14.6	503	55.3
Literate	151	0.7	584	4.6	585	4.7	447	3.8	163	17.9
Primary	3776	17.9	365	2.9	2179	17.5	2496	21.3	82	9.0
Middle	200	0.9	1162	9.2	1457	11.7	1900	16.2	61	6.7
Secondary	5407	25.6	885	7.0	1762	14.2	2688	22.9	58	6.4
Technical	80	0.4	61	0.5	43	0.3	193	1.6	0	0.0
College	2888	13.7	303	2.4	649	5.2	1604	13.7	11	1.2
Below 5 years	302	1.4	124	1.0	91	0.7	223	1.9	11	1.2
Oth. & Unk.	1467	6.9	280	2.2	0	0.0	483	4.1	21	2.3
<b>Total</b>	<b>21121</b>	<b>100.0</b>	<b>12636</b>	<b>100.0</b>	<b>12417</b>	<b>100.0</b>	<b>11745</b>	<b>100.0</b>	<b>910</b>	<b>100.0</b>

**Table 16.2: Number(#) and Relative Proportion(%) by Marital Status (All Sites of Cancer) (2001-03)**

Marital Status	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Unmarried	3911	14.4	1497	13.9	1221	11.2	1584	12.1	88	5.5
Married	22225	82.1	9162	84.8	9238	85.0	11113	84.8	1378	86.0
Widowed	870	3.2	93	0.9	387	3.6	337	2.6	65	4.1
Divorced	25	0.1	0	0.0	1	0.0	43	0.3	0	0.0
Separated	15	0.1	3	0.0	19	0.2	0	0.0	0	0.0
Others & Unk.	32	0.1	44	0.4	0	0.0	22	0.2	71	4.4
<b>Total</b>	<b>27078</b>	<b>100.0</b>	<b>10799</b>	<b>100.0</b>	<b>10866</b>	<b>100.0</b>	<b>13099</b>	<b>100.0</b>	<b>1602</b>	<b>100.0</b>
<b>FEMALES</b>										
Unmarried	1632	7.7	698	5.5	541	4.4	1104	9.4	47	5.2
Married	15837	75.0	10011	79.2	8879	71.5	7980	67.9	740	81.3
Widowed	3516	16.6	1856	14.7	2844	22.9	2441	20.8	103	11.3
Divorced	83	0.4	12	0.1	12	0.1	212	1.8	0	0.0
Separated	23	0.1	51	0.4	141	1.1	1	0.0	0	0.0
Others & Unk.	30	0.1	8	0.1	0	0.0	7	0.1	20	2.2
<b>Total</b>	<b>21121</b>	<b>100.0</b>	<b>12636</b>	<b>100.0</b>	<b>12417</b>	<b>100.0</b>	<b>11745</b>	<b>100.0</b>	<b>910</b>	<b>100.0</b>

**Table 16.3: Number(#) and Relative Proportion(%) of Cancer patients by Religion (2001-03)**

Religion	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Hindu	22632	82.6	9489	87.9	9586	88.2	7744	59.1	1438	89.8
Muslim	3519	13.0	1085	10.0	839	7.7	2451	18.7	114	7.1
Christian	634	2.3	208	1.9	424	3.9	2897	22.1	24	1.5
Sikh	115	0.4	2	0.0	2	0.0	1	0.0	1	0.1
Jain	168	0.6	7	0.1	15	0.1	0	0.0	1	0.1
Neo-Buddhist	221	0.8	3	0.0	0	0.0	0	0.0	22	1.4
Parsi	25	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Others	32	0.1	2	0.0	0	0.0	0	0.0	2	0.1
Unknown	2	0.0	3	0.0	0	0.0	6	0.0	0	0.0
<b>Total</b>	<b>27078</b>	<b>100.0</b>	<b>10799</b>	<b>100.0</b>	<b>10866</b>	<b>100.0</b>	<b>13099</b>	<b>100.0</b>	<b>1602</b>	<b>100.0</b>
<b>FEMALES</b>										
Hindu	17636	83.5	11296	89.4	11012	88.7	7341	62.5	817	89.8
Muslim	2281	10.8	1065	8.4	804	6.5	1812	15.4	69	10.6
Christian	633	3.0	250	2.0	577	4.6	2585	22.0	9	1.0
Sikh	109	0.5	5	0.0	0	0.0	1	0.0	4	0.4
Jain	155	0.7	9	0.1	22	0.2	0	0.0	0	0.0
Neo-Buddhist	244	1.2	6	0.0	2	0.0	0	0.0	11	1.2
Parsi	35	0.2	3	0.0	0	0.0	0	0.0	0	0.0
Others	25	0.1	1	0.0	0	0.0	0	0.0	0	0.0
Unknown	3	0.0	1	0.0	0	0.0	6	0.1	0	0.0
<b>Total</b>	<b>21121</b>	<b>100.0</b>	<b>12636</b>	<b>100.0</b>	<b>12417</b>	<b>100.0</b>	<b>11745</b>	<b>100.0</b>	<b>910</b>	<b>100.0</b>

**Table 16.4: Number(#) and Relative Proportion(%) by Language Spoken (All Sites of Cancer) 2001-2003**

Language Spoken	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
<b>MALES</b>										
Assamese	487	1.8	2	0.0	332	3.1	9	0.1	1092	68.2
Bengali	2850	10.5	32	0.3	64	0.6	5	0.0	136	8.5
Gujarati	1346	5.0	12	0.1	24	0.2	11	0.1	0	0.0
Hindi	10292	38.0	102	0.9	148	1.4	12	0.1	124	7.7
Kannada	342	1.3	6272	58.1	43	0.4	3	0.0	0	0.0
Kashmiri	49	0.2	0	0.0	0	0.0	1	0.0	0	0.0
Malayalam	337	1.2	156	1.4	461	4.2	12236	93.4	0	0.0
Marathi	7288	26.9	150	1.4	20	0.2	0	0.0	0	0.0
Oriya	631	2.3	9	0.1	24	0.2	0	0.0	95	5.9
Punjabi	280	1.0	4	0.0	3	0.0	0	0.0	5	0.3
Sanskrit	7	0.0	1	0.0	0	0.0	0	0.0	1	0.1
Sindhi	237	0.9	1	0.0	1	0.0	0	0.0	1	0.1
Tamil	219	0.8	871	8.1	6484	59.7	744	5.7	3	0.2
Telugu	371	1.4	1893	17.5	2956	27.2	2	0.0	0	0.0
Urdu	1259	4.6	1018	9.4	246	2.3	15	0.1	69	4.3
English	118	0.4	9	0.1	9	0.1	0	0.0	45	2.8
Others	512	1.9	201	1.9	51	0.5	58	0.4	31	1.9
Unknown	453	1.7	66	0.6	0	0.0	3	0.0	0	0.0
<b>Total</b>	<b>27078</b>	<b>100.0</b>	<b>10799</b>	<b>100.0</b>	<b>10866</b>	<b>100.0</b>	<b>13099</b>	<b>100.0</b>	<b>1602</b>	<b>100.0</b>
<b>FEMALES</b>										
Assamese	259	1.2	5	0.0	117	0.9	6	0.1	608	66.8
Bengali	1995	9.4	27	0.2	44	0.4	2	0.0	72	7.9
Gujarati	1090	5.2	9	0.1	21	0.2	7	0.1	0	0.0
Hindi	6478	30.7	95	0.8	137	1.1	8	0.1	62	6.8
Kannada	287	1.4	6803	53.8	44	0.4	1	0.0	0	0.0
Kashmiri	42	0.2	4	0.0	1	0.0	6	0.1	0	0.0
Malayalam	278	1.3	134	1.1	377	3.0	10882	92.7	0	0.0
Marathi	7389	35	172	1.4	19	0.2	1	0.0	0	0.0
Oriya	332	1.6	11	0.1	11	0.1	0	0.0	83	9.1
Punjabi	258	1.2	11	0.1	3	0.0	1	0.0	5	0.5
Sanskrit	5	0.0	3	0.0	0	0.0	0	0.0	0	0.0
Sindhi	335	1.6	2	0.0	5	0.0	1	0.0	1	0.1
Tamil	266	1.3	1310	10.4	7340	59.1	732	6.2	0	0.0
Telugu	312	1.5	2774	22.0	3918	31.6	4	0.0	0	0.0
Urdu	825	3.9	1002	7.9	315	2.5	20	0.2	46	5.1
English	121	0.6	6	0.0	17	0.1	1	0.0	18	2.0
Others	414	2.0	191	1.5	48	0.4	72	0.6	15	1.6
Unknown	435	2.1	77	0.6	0	0.0	1	0.0	0	0.0
<b>Total</b>	<b>21121</b>	<b>100.0</b>	<b>12636</b>	<b>100.0</b>	<b>12417</b>	<b>100.0</b>	<b>11745</b>	<b>100.0</b>	<b>910</b>	<b>100.0</b>

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