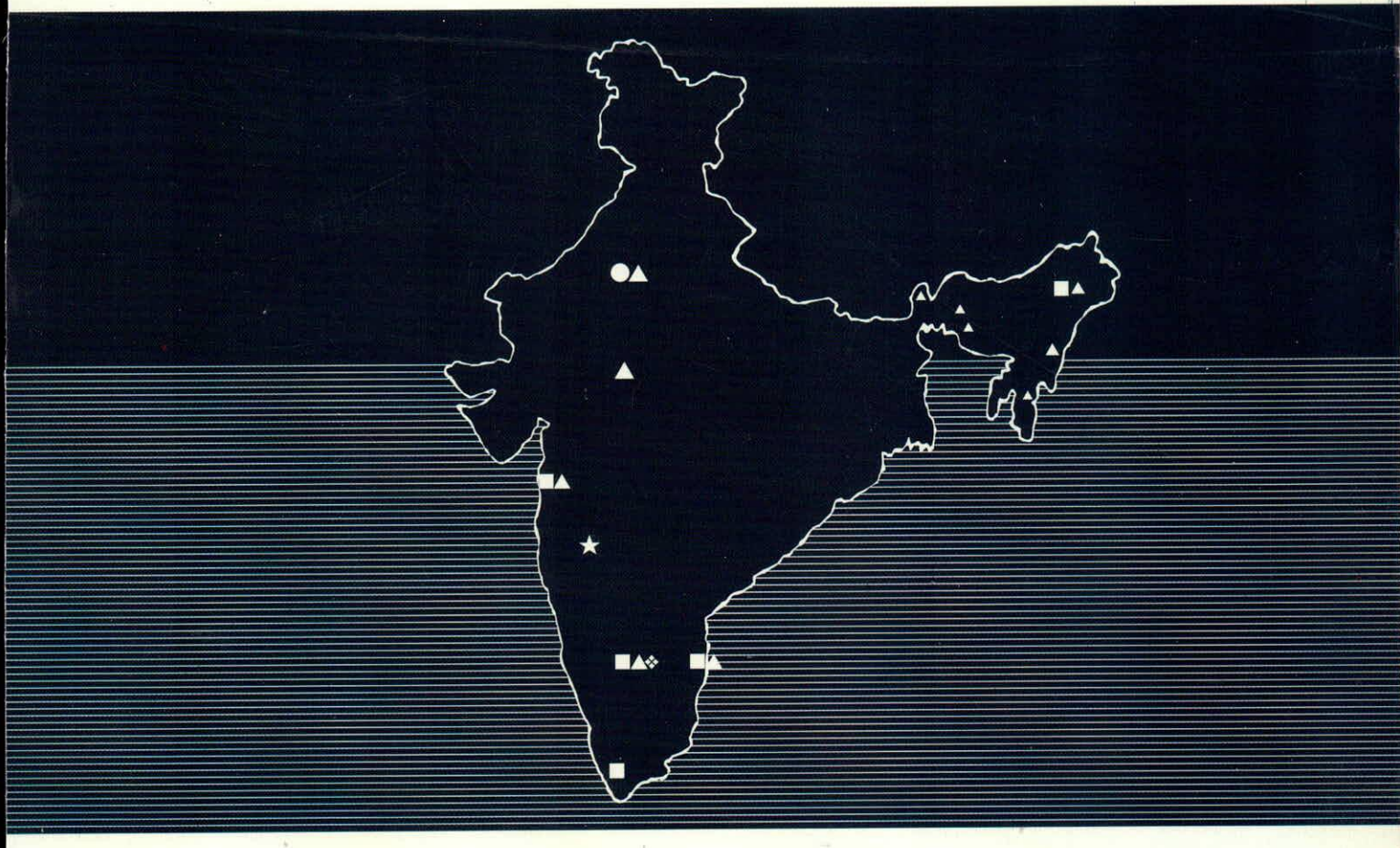
NATIONAL CANCER REGISTRY PROGRAMME

Five Year Consolidated Report of the Hospital Based Cancer Registries 1994-1998

An Assessment of the Burden and Care of Cancer Patients



Indian Council of Medical Research

New Delhi

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1994 - 1998

An Assessment of the Burden and Care of Cancer Patients

Prepared by

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Coordinating Unit of NCRP

Bangalore, INDIA.

November 2002

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 patterns in the country.

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**** Thiruvananthapuram is referred as Thi'puram in the tables and figures.***

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FOREWORD

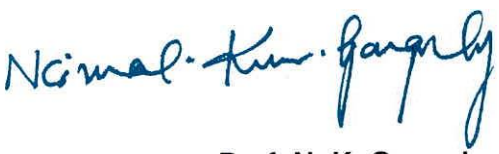
Hospital Based Cancer Registries (HBCRs) provide an idea of the magnitude and patterns of patient care in a given hospital. They help in planning the facilities required in the respective hospital and help in evaluation of outcome of treatment. They also contribute to the population based cancer registry in the given area and to undertake epidemiologic research.

This five year consolidated report of the hospital based cancer registries of the National Cancer Registry Programme (NCRP) for the years 1994 - 1998 is the result of work carried out by the five Hospital Based Cancer Registries located at the respective institutions in different parts of the country.

The report provides an insight into the complex issues involved in cancer patient care in the Indian context. In bringing about an assessment of the magnitude and care of cancer patients, the report has highlighted the need for systematic recording of clinical information. The report underscores the difficulties in obtaining follow-up details on a regular and sustained basis for evaluation of outcome of treatment.

A very high percentage of clinically spread disease is seen when the patients first attend for treatment leading to poor survival. This emphasizes the importance and need of early detection and organizing palliative care and pain relief clinics.

This report will hopefully, serve as a guide to the treating oncologist, researcher and health administrators to look deeper into various aspects in cancer patient management in our country. The registries and all of their staff, deserve thanks for the work they have put in and making available the data.



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23 July 2003

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Dr R.N. Visveswara and Dr Kumara Swamy as members of Printing Committee;

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National Cancer Registry Programme

Under the National Cancer Registry Programme (NCRP), the Indian Council of Medical Research commenced a network of cancer registries across the country in December 1981.

The programme was commenced with the following objectives:

1. To generate 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. To undertake epidemiologic research, such as case control or cohort studies based on observations of registry data;

3. Provide data base for developing appropriate strategies to aid in National Cancer Control Programme; this would be in the form of planning, monitoring and evaluation of activities under this programme;

4. Develop human resource in cancer registration and epidemiology.

Data collection commenced from 1 January 1982 in the population based cancer registries at Bangalore, Chennai and Mumbai, and also in the hospital based cancer registries at Chandigarh, Dibrugarh and Thiruvananthapuram. In order to extend the assessment of cancer patient care, hospital cancer registries were also started at Bangalore, Chennai and Mumbai in 1984. 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. To ensure uniformity in the data collected by different registries, code manuals separately for HBCRs (NCRP, 1987) and PBCRs (NCRP, 1987) were prepared. These code manuals are used for the data from 1st January 1986. Under the auspices of the World Health Organization, a project on "Development of an Atlas of Cancer in India" was commenced in 2001. As a fall out of this, a North Eastern Regional Cancer Registry 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 NCRP is a long-term activity of the Indian Council of Medical Research. The programme is one of the many major activities of the Division of Non-Communicable Diseases and an Officer-in-charge coordinates it. The Programme is assisted by a Steering Committee that meets periodically to oversee and guide its functioning. A review meeting is held annually, where the Principal Investigators and staff of the registries under the NCRP, present data and participate in the discussions.

Cancer registration in India is active. Staff of registries visit hospitals on routine basis and scrutinise the records in various departments that include pathology, radiology, radiotherapy, in-patient wards and out-patient clinics to elicit the desired information on reported cancer cases in a "common core proforma" that has been standardised for all cancer registries in India. Proforma contains items on patient identification, socio-demographic variables, diagnostic and treatment details. Coding of the disease is done according to International Classification of Diseases (WHO, 1975). This facilitates comparison of our data at International level. In addition, to facilitate the detailed histologic studies, coding is also done according to International Classification of Disease for Oncology (WHO, 1976). The hospitals include the main cancer hospitals, other general hospitals in both the government and private sector. Besides, pathology laboratories that routinely report cancer cases are also visited. Death certificates are also scrutinised from the municipal corporation units. Every attempt is made by registries to register all cancer patients in the registration area who are resident (at least one year) in the area in all hospitals and copy all death certificates in which cancer is mentioned.

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

A workshop is held annually, with the objectives of discussing the various aspects of working of the registry, problematic cases, use of coding and discussion on medical terminology, statistical and epidemiologic methods. About 2-3 senior and junior staff of all the registries under the NCRP, 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.

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.

Five-Year Consolidated Report of the Hospital Based Cancer Registries: 1994 - 1998

An Assessment of the Burden and Care of Cancer Patients

INTRODUCTION AND SUMMARY OF REPORT

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

1. GENERAL:

1.1 Assess Patient Care;

1.2 Participate in Clinical Research to Evaluate Therapy;

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

1.4 Help plan hospital facilities.

2. SPECIFIC:

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

2.2 Describe length and quality of survival in relation to site, stage and treatment;

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

2.4 Undertake epidemiologic 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 to assess quality of hospital care and cancer services in covered area.

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 - follow-up by registries has been difficult (Nandakumar, 1993). In the absence of follow-up of the majority of patients registered by the HBCR, obtaining stage and treatment based survival has not been possible.

The broad purpose of this Five Year (1994-98) Report of the Hospital Cancer Registries is to look into some of the functions of hospital cancer registries outlined above.

These essentially include observing the magnitude of the problem in terms of patient load, diagnostic and treatment provided by each of the centre where the HBCR is located. In presenting the results of the analysis these parameters have been classified along specified and accepted lines for hospital cancer registries, which basically is:

a) according to those diagnosed and treated before registration at the hospital where the registry is located, and;

b) those who were not previously treated with or without an earlier diagnosis.

The latter are generally called the 'Analytic Cases' for the HBCRs and are the main set of patients that are analysed when treatment aspects are considered.

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 the overall magnitude of the problem in terms 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.

Chapter 2 dwells on leading sites of cancer according to broad age groups. Different broad age groups have different sites of cancer that are more common.

Chapter 3 indicates the impact of the use of tobacco in the causation of cancer both in proportions and type 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. Microscopy constitutes the basis for establishing a diagnosis of cancer. However, since many patients in our country present at an advanced stage of the disease other methods of diagnosis assume importance.

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

The proportion of patients presenting at various clinical extents is shown in Chapter 6. Since clinical extent of disease at presentation of cancer is directly related to the type and effectiveness of treatment and with survival, it represents the acuteness of the cancer problem. This is one of the most important baseline indicators for initiating cancer control activity in the area. 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 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 8-13 summarize important selected sites of cancer with the comprehensive tables with the idea that the numbers in these tables of individual sites become more meaningful.

Chapter 14 deals with the relative proportions of histological types of cancer for certain specific sites.

Chapter 15 summarises the relative proportion of cases according to educational status, religion and language spoken.

In the text of the report, the term "patient(s)" has been used for aspects concerning diagnosis and treatment and the term "case(s) or cancer(s)" for instance(s) of disease (cancer) in the statistical or abstract sense.

From inability to let well alone;
from too much zeal for the new and contempt for what is old;
from putting knowledge before wisdom, science before art
and cleverness before common sense;
from treating patients as cases; and
from making the cure of disease more grievous than the endurance of the same,
Good Lord Deliver Us

- Sir Robert Hutchison
(1871-1960)

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INTRODUCTION

The Tata Memorial Centre (TMC) comprises of Tata Memorial Hospital (TMH) and Cancer Research Institute (CRI). This Centre is a grant-in-aid institution under the administrative control of Dept. of Atomic Energy, Government of India. The main activities of the Centre are diagnosis, treatment and research in cancer as well as training and education to provide the highest standard of patient care.

This report briefly outlines the Hospital facilities available for patient care and working of the Hospital Cancer Registry during the period 1994-1998.

TATA MEMORIAL HOSPITAL

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

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

The Hospital initiated the Bone Marrow Transplantation programme in 1982 and 29 patients underwent BMT in the year 1998.

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

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

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

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

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

TMH is a post-graduate teaching centre, affiliated to the University of Mumbai, National Board of Examinations, New Delhi and Maharashtra University of Health Sciences, Nashik. The Post-graduates courses (M.D.) in Pathology, Radiodiagnosis, Radiotherapy, Anaesthesia (DA), Radiodiagnosis(DMRD) and Radiotherapy (DMRT) are available and over 50 students were registered during the year 1998.

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

CANCER REGISTRY

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

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

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

The standard international code such as International Classification of Disease for Oncology (ICD-O-1, ICD-O-2, ICD-9, TNM (UICC) are used to classify the disease (topography & morphology), clinical extent of disease etc. and codes for demographic variables are also being used. As cancer is not a notifiable disease, information about patient's health status is obtained through active follow-up of patients mostly by postal inquiry.

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

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

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Department of Bio-statistics and Cancer Registry

INTRODUCTION

Kidwai Memorial Institute of Oncology (KMIO) is a comprehensive and regional centre for cancer research and treatment in Karnataka with the state of art facilities for the diagnosis, treatment and research. It is an autonomous, non-profit Institution and has in-patient bed strength of 429. In addition to these inpatient beds, the Dharmashala, a unique project of its kind in the country provides accommodation to about 250 ambulatory patients along with 250 patients' attendants. These patients and attendants at the Dharmashala are provided with free food through perpetual free feeding endowment donation scheme.

As community outreach programme, the mobile cancer education and detection Unit (Department of Community Oncology) organizes cancer detection and education camps in rural, semi urban and urban areas of Karnataka and in the neighbouring areas of others States with support from voluntary organizations. KMIO as an apex body for the overall cancer control in the State has initiated several cancer control programmes/activities at different places. The Institute has been recognized as a National Centre of Excellence. Medical and paramedical personnel from all over the Country come for training in various specialties /branches of oncology. The Institute has its sub-centres (Peripheral Cancer Centres) at Mandya and Gulbarga. 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 B.Sc. Medical Technology (Laboratory/Radiotherapy/Radio Diagnosis). These courses are affiliated to Rajiv Gandhi University of Health Sciences.

In order to provide anti-cancer drugs at reasonably reduced prices, the Kidwai Cancer Drug Foundation Trust has been established where, the cost of 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 Medical Relief Fund.

The Hospital Based Cancer Registry has been functioning since the inception of the Institute (1973). However, this registry has come under the network of the National Cancer Registry Programme of ICMR from 1st January 1984. In view of the facilities available at the Insitute and at concessional rates 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 turnover of patients has been steadily increasing every year. Annually, over 14000 new cases are registered as new cases and over 200,000 follow-up visits are recorded per annum. Staff of the Registry collects information on each and every new case at the time of registration and the required data on medical items are abstracted from the case records using standard proforma. The information so collected are coded and entered into the computer. The validity and consistency checks are performed by the statistical staff for unlikely combinations of age, sex, site, morphology and other factors using special software programmes developed by the Department. The clean data are then sent to the Coordinating Unit for the uniform analysis and reporting. The registry brings out Annual/ Biennial, scientific reports based on the registry data every year. The faculty of the registry are involved in several research projects undertaken by the Institute in collaboration with National /International research organizations / firms.

Other Staff of Hospital Based Cancer Registry, Bangalore

Mr. D.J.Jayaram	:	Senior Investigator
Mr. V.Bhadraiah	:	Assistant Social Scientist
Mr. A.V.Srinivasa Gowda	:	Assistant Social Scientist
Mr. R.Lingaraju	:	Assistant Social Scientist
Mr. M.K.M. Gowda	:	Assistant Social Scientist
Mrs. B.J.Kumudini	:	Assistant Social Scientist
Mr. Balakrishnoji Rao	:	Field / Medico Social Worker
Mr. A.Subramani	:	Coding Clerk
Mrs. A.K.Jyothi	:	Stenographer
Mr. B.M.Gangaiah	:	Data Entry Operator
Mr. V.M.Mahadevappa	:	Attender (Up to November 2002)
Mr. A.P. Babu	:	Attender (from December 2002)

HOSPITAL BASED CANCER REGISTRY

Cancer Institute (WIA), Adyar, Chennai (Madras)

Dr. V.Shanta, Principal Investigator, HBCR and Executive Chairman

Dr. R. Swaminathan, Co-Investigator, HBCR and Senior Bio-Statistician

Mrs. R.Rama, Statistical Assistant

About the base institution

The Cancer Institute (W.I.A.) is the first comprehensive cancer care center to be established in South India and is the second in India. It comprises a hospital, a research center, a center of preventive oncology and the Dr. Muthulakshmi College of Oncologic Sciences. It is the seat of both demographic and hospital cancer registries. The hospital has 423 beds and more than 50% of the patients are boarded, lodged and treated free of cost. Being a Regional Cancer Center for Cancer Research and Treatment in the Ministry of Health & Family Welfare of the Government of India, this autonomous, non-profit organization draws attendances from all over the country. It offers state of art facilities for cancer diagnosis, treatment and research. The proportion (%) of patients attending the institute from Southern India accounts for 95%: Tamil Nadu (64%), Andhra Pradesh (28%) and Kerala (3%). The research departments are recognized by the University of Madras, Anna University and the Dr. M.G.R. Medical University, for doctoral and super specialty degrees.

About the registry

The hospital cancer registry is functioning at the Cancer Institute (W.I.A.) since its inception in 1955. Data collection on the lines of ICMR 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 and 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 total number of new patients (malignant and non-malignant) registered during the years 1994-1998 was 45,804. Of these, 30,250 (66%) were cancer cases with the male-female ratio of 1:1.16. The average age at the time of diagnosis in male (51) was higher than female (48). The leading cancers

among males are oral cavity (UICC), oropharynx (UICC) and stomach. Among females, cancers of cervix and breast continue to be the leading ones with a decreasing trend in the percentage of cervix cancers and increasing trend in the percentage of the breast cancers.

Follow-up

The major focus of the hospital cancer registry is on the continued well-being and care of the patient. This is achieved by the life time follow-up of all treated patients. An efficient follow-up system is inherent in the functioning of the registry. A study was conducted to evaluate the availability of follow up information in 549 cases of cancer cervix and 316 cases of female breast cancer treated in 1995. Information on follow up was obtained by passive and active follow up methods: patient visits to OPD, postal/ telephone/house visit enquiries. Complete follow up information at five years from diagnosis was available in 73% of cervix and 77% of breast cancers. Passive follow up accounted for 17-18% while the rest of 56-59% was made possible only by active follow up. Follow up increased with the income level. Follow up of patients who owned a house compared to those who lived in rented houses and patients from urban areas compared to rural areas was not significantly different. Hence the follow up system has accounted for migration effectively.

Activities

Hospital cancer registry publishes reports on various hospital statistics periodically. Workshops on 'Techniques for early detection of cancer' for Medical Officers and ANM staff from all over Tamil Nadu were organized. A Registry Training Workshop for RCC personnel to start new cancer registries and training for students of IARC courses were also conducted. Various epidemiological and survival studies on different cancers have been carried out and results were published in international scientific journals. The registry assists in the conduct of several randomized clinical trials.

Other notable activities of the Cancer Institute (WIA) are as follows: Early detection of cancers of the cervix, breast and oral cavity in a selected area in Chennai; Tobacco cessation clinic is helping out the tobacco users to quit tobacco; a hereditary cancer clinic is offering services to the kith and kin of cancer patients with a significant history of cancer in their families.

Staff of the Hospital Cancer Registry – ICMR

Mrs. R. Rama	:	Statistical Assistant
Mr. R. Selvakumaran	:	Statistical Assistant
Mrs. Rajakumari Pandian	:	Typist

HOSPITAL BASED CANCER REGISTRY

Regional Cancer Centre, Thiruvananthapuram (Trivandrum)

Dr. M. Krishnan Nair, Director and Principal Investigator, HBCR

Mr. P. Gangadharan, Co-Principal Investigator and Emeritus Medical Scientist

Dr. Cherian Varghese, Associate Professor in Epidemiology & Clinical Research

The Hospital Based Cancer Registry (HBCR), at the Regional Cancer Centre (RCC) Trivandrum had continued data collection on cancer patients reporting to the RCC, Medical College Hospital, SAT hospital for women and children, Trivandrum. During the period 1994-1996 and from 1997 onwards the data were collected only from the RCC. The registry records around 8000 new cases annually.

The HBCR has made significant achievements in data abstraction. The first part (demographic details) of the core-proforma is entered into computer at the time of new patient registration at RCC. The second part (diagnostic and treatment details) is coded and entered into computer after retrieving case-sheets from the medical records. To ensure whether valid codes are entered, a series of range checks to compare the values of certain variables against others and a series of consistency checks are done using an in-house software. After the necessary corrections, the data are sent to the coordinating unit of NCRP and reports are generated every year.

The HBCR maintains a follow-up system for all cancer patients reported at RCC. Generally all follow-up visits are through prior appointments. An in-house software has been developed for scheduling appointment of patients. Date and disease status for each follow-up visit are entered into computer regularly. There are numerous problems in obtaining complete follow-up information of cancer patients. The follow-up loss is a serious setback for survival and end result reporting. So a computerized tracking system has been developed to identify the follow-up loss. Vital status of the lost patients are obtained by using reply-paid letters (with instructions written in Malayalam) as well as telephone enquiry and the information obtained from these two systems is used for updating the records. Treatment results and survival of cancer patients are estimated routinely.

The HBCR has set up a population-based cancer registry covering the areas of Trivandrum city (urban) and three adjoining community development blocks (rural) to generate cancer incidence and mortality rates in Trivandrum. The bulk of the information (around 90%) is obtained from the HBCR, Trivandrum. The hospital registry supports another population-based rural cancer registry at Karunagappally.

The HBCR routinely conducts epidemiologic studies. The following 3 studies were conducted during the periods 1994-1998.

1. Case-control study on occupational exposure and cancer: A multi centric study in collaboration with the International Agency for Research on Cancer, Lyon, France.
2. Exposure to pesticides and the risk of breast cancer - collaboration with the National Cancer Institute, US.
3. Molecular epidemiology of paediatric leukemia and lymphoma in Kerala – collaboration with the University of Leeds, UK.

The HBCR, is involved in evaluating the District Cancer Control Programmes in Kerala. Further, the registry established a good system to deliver cancer care at Pathanamthitta. Patients from the district hospital at Pathanamthitta are using the much needed laboratory services established as part of this programme.

Based on the registry data, a number of scientific papers on epidemiology and survival of common and rare cancers have been published in peer-reviewed journals.

Human resource generation is another priority area and the registry has conducted 3 training programmes on cancer registration with support from University of California, SanFrancisco, Emory university, Atlanta, National Cancer Institute, US, and Indian Council of Medical Research, New Delhi during 1994-1998. On an average 20-25 participants from other cancer registries participated in each of these programmes.

The official newsletter of the National Cancer Registry Programme of India, 'CRAB' is being published by the HBCR, Trivandrum.

Other Staff of Hospital Based Cancer Registry,
Thiruvananthapuram (Trivandrum)

Dr. Aleyamma Mathew	:	Asst. Professor in Epidemiology & Statistics
Ms. Padmakumari G	:	Lecturer in Statistics
Ms. Anitha Nayar	:	Social Investigator Gr. I
Ms. Jalaja Kumari V	:	Clerk Gr. I
Ms. Asha N.M	:	Clerk

HOSPITAL BASED CANCER REGISTRY
Assam Medical College, Dibrugarh

Dr. (Mrs) Nandita Choudhury, Principal-cum-Chief Superintendent, Assam Medical College & Hospital, Principal Investigator, Hospital Based Cancer Registry, Dibrugarh

Dr. M.S. Ali, Co-Principal Investigator, Senior Bio-statistician and Officer-in-Charge

Hospital Cancer Registry at Assam Medical College, Dibrugarh which was initially established in 1982 by the ICMR in collaboration with the Government of Assam, has completed 21 years of its successful existence in February 2003. It is one of the sister organization of the network of registries functioning all over the country under the banner "National Cancer Registry Programme of ICMR".

Over the years the Dibrugarh registry has been able to generate and project the prevalent pattern of cancer of this region including some interesting aetiological findings to undertake control and preventive measures of predominant cancers of the region.

The registry successfully conducted two ad-hoc projects of case control studies on cancer pharynx and cancer esophagus during the period 1988-1991. Dr. M.S. Ali and Mrs. P.Dutta attended IARC training programme on cancer registration and occupational cancers held at Ahmedabad in November 1992. Dr. M.S. Ali and Dr. (Ms) R. Akhtar had participated in the Annual Meeting of IACR held at Bangalore on 25-28 October 1994. Two scientific papers namely Oesophagus Cancer in Assam its magnitude and aetiology and cancer of Hypopharynx in Assam and its high risk factors, based on the findings of the above mentioned case control studies were presented in that meeting. Dr (Mrs) R. Akhtar was awarded UICC-ICRETT fellowship to attend IARC Summer School on Cancer Epidemiology and registration held at Lyon, France during August 1996.

The registry has also been engaged in the development of human resource in the field of cancer epidemiology. Dr (Ms) R. Akhtar of this unit and Dr. R.K. Phukan of RMRC, Dibrugarh have already obtained their respective Ph.D degrees by utilizing the data and expertise of the registry.

Two scientific papers namely-Betel nut Tobacco chewing, potential risk factors of cancer of the oesophagus in Assam, India and Role of Dietary Habits in Development of Esophageal Cancer in Assam, the North Eastern Region of India by Ali, M.S. and Phukan, R.P. et al have been published in the British Journal of Cancer and in the Nutrition and Cancer respectively in 2001. Apart from these, several scientific papers and popular articles have been published from time to time in the local news papers for public awareness.

Dibrugarh registry is one of the participating centres in the WHO sponsored national programme on "Development of An Atlas of Cancer in India". 2001 data of our registry have already been submitted and the 2002 data are being completed.

The Dibrugarh registry has recently been entrusted to conduct an ad-hoc project on Population Based Cancer Registry for Dibrugarh District from March 2003. The project has already been initiated under the active leadership of Dr. (Mrs). Nandita Choudhury, Principal-cum-Chief Superintendent, AMCH, Dibrugarh who is also the Principal Investigator of the project. The process of recruitment of two additional posts of Social Investigator and computer operator and the installation of a computer are being completed.

Other staff of HBCR, Dibrugarh

Dr. (Ms) R.Akhtar	:	Research Officer
Mrs. P. Dutta	:	Medical Record Officer
Mrs. S. Ahmed	:	Social Investigator
Mrs. S. Neog	:	Social Investigator
Mr. K. Saikia	:	Clerk
Mrs. I. Baruah	:	Clerk
Mr. S. R. Nath	:	Clerk
Mrs. R. Begum	:	Clerk
Mrs. J. Sonowal	:	Coding Clerk
Mr. P. Deuri	:	Typist
Sri B. Moch	:	Helper

Chapter 1

MAGNITUDE AND LEADING SITES OF CANCER

This chapter gives the overall magnitude of the problem in terms of cancers diagnosed at the respective centres. It gives the relative frequencies of the leading sites of cancer.

During the five-year period (1994-98) 1,79,969 new cases of cancer (Table 1.1) were registered at the five hospital based cancer registries, at Tata Memorial Hospital, Mumbai, Kidwai Memorial Institute of Oncology, Bangalore, Cancer Institute, Chennai, Regional Cancer Centre, Thiruvananthapuram, and Assam Medical College, Dibrugarh. Tata Memorial Hospital contributed 42.6% of these cases and Assam Medical College 2.3% of cases. The sex ratio percent shows as during earlier years a slightly higher proportion of female cancers in Bangalore and Chennai whereas it is the other way round in Mumbai and Thiruvananthapuram. Dibrugarh has consistently reported a higher proportion of male cancers, though this has declined from 222% during 1984-93 (NCRP, 2001) to 177% during 1994-98.

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

Registry	Males		Females		Sex* Ratio%	Total Cases	Rel. Prop.
	#	%	#	%			
Mumbai	43006	56.0	33722	44.0	128	76728	42.6
Bangalore	15926	46.2	18552	53.8	86	34478	19.2
Chennai	13413	46.3	15581	53.7	86	28994	16.1
Thi'puram	18978	53.3	16648	46.7	114	35626	19.8
Dibrugarh	2645	63.8	1498	36.2	177	4143	2.3
All Registries	**93968**	**52.2**	**86001**	**47.8**	**109**	**179969**	**100.0**

** Number of male patients per 100 female patients*

Fig. 1.1: Trends in total number of cancers registered (both sexes) 1984-98

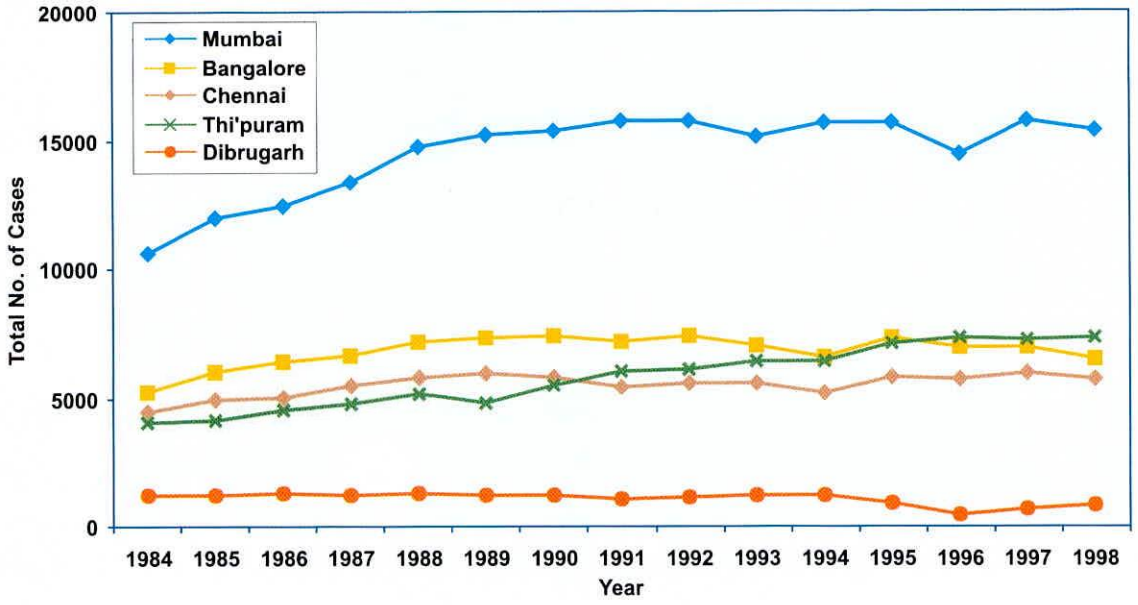


Figure 1.1 gives the trends in the total number of cancers registered by each hospital cancer registry since 1984. All registries located at the regional cancer centres have recorded a rise with this being more in Mumbai and Thiruvananthapuram.

The number, relative proportion and rank of ten leading sites of cancer for males and females are presented in Table 1.2 and graphically represented in Figure 1.2. In the following description the leading sites of cancer in the different registries in this report (1994-98) are compared with the leading sites of cancer in the previously printed 1984-93 report.

Males:

In *Mumbai,* cancers of the oral cavity and tongue are the leading sites as in the previous 1984-93 report. However, cancer of the lung, which was only the fifth leading site in that period is the third leading site constituting 7.3% of all cancers in males. Cancer of the rectum, which was not among the ten leading sites of cancer, is the tenth leading site in this period.

In *Bangalore,* there is no change in the ten leading sites of cancer and the rank and relative proportions are also more or less the same, when compared to the previous report.

In *Chennai,* cancer of the oral cavity continues as the leading site of cancer, but cancer of the stomach, which was earlier the fourth leading site, is the second leading site. Like in Mumbai, cancer of the rectum has appeared as one of ten leading sites and this was not seen in the earlier report of 1984-93.

In *Thiruvananthapuram,* cancer of the lung has replaced cancer of the oral cavity as the leading site of cancer.

In *Dibrugarh,* cancer of the hypo-pharynx has replaced cancer of the oesophagus as the leading site of cancer.

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

MALES

Sites	Mumbai			Bangalore			Chennai			Thi'puram			Dibrugarh		
	#	%	R	#	%	R	#	%	R	#	%	R	#	%	R
Oral Cavity	4783	11.1	1	911	5.7	3	1303	9.7	1	1946	10.3	2	174	6.6	6
Tongue	3311	7.7	2	874	5.5	5	1020	7.6	4	1120	5.9	3	190	7.2	4
Lung	3158	7.3	3	910	5.7	4	897	6.7	6	2505	13.2	1	121	4.6	7
Hypopharynx	2891	6.7	4	1729	10.9	1	1041	7.8	3	578	3.0	9	442	16.7	1
Oesophagus	2870	6.7	5	1592	10.0	2	963	7.2	5	1094	5.8	4	360	13.6	2
Larynx	2420	5.6	6	653	4.1	8	581	4.3	7	977	5.1	5	101	3.8	9
Non-Hodgkin's	2091	4.9	7	669	4.2	7	527	3.9	8	910	4.8	6	77	2.9	10
Leuk Myeloid	1585	3.7	8	581	3.6	10	373	2.8	*	496	2.6	*	34	1.3	*
Leuk Lymph.	1517	3.5	9	453	2.8	*	203	1.5	*	622	3.3	8	25	0.9	*
Rectum	1420	3.3	10	432	2.7	*	455	3.4	9	415	2.2	*	35	1.3	*
Stomach	1224	2.8	*	864	5.4	6	1067	8.0	2	728	3.8	7	113	4.3	8
Oropharynx	1334	3.1	*	622	3.9	9	430	3.2	10	564	3.0	10	180	6.8	5
Sec Lymph N	1226	2.9	*	500	3.1	*	428	3.2	*	406	2.1	*	276	10.4	3
Total	**29830**	**69.4**		**10790**	**67.8**		**9288**	**69.2**		**12361**	**65.1**		**2128**	**80.5**	
All sites	**43006**	**100.0**		**15926**	**100.0**		**13413**	**100.0**		**18978**	**100.0**		**2645**	**100.0**	

FEMALES

Sites	Mumbai			Bangalore			Chennai			Thi'puram			Dibrugarh		
	#	%	R	#	%	R	#	%	R	#	%	R	#	%	R
Breast	8849	26.2	1	2304	12.4	3	2808	18.0	2	4236	25.4	1	188	12.6	2
Cervix	7401	21.9	2	6546	35.3	1	6001	38.5	1	2642	15.9	2	204	13.6	1
Ovary	1793	5.3	3	633	3.4	5	577	3.7	4	1082	6.5	4	107	7.1	4
Oral Cavity	1712	5.1	4	2330	12.6	2	1036	6.6	3	1064	6.4	5	80	5.3	5
Oesophagus	1483	4.4	5	1190	6.4	4	510	3.3	5	293	1.8	*	175	11.7	3
Tongue	892	2.6	6	194	1.0	*	274	1.8	9	592	3.6	6	51	3.4	10
Non-Hodgkin's	792	2.3	7	279	1.5	10	215	1.4	*	438	2.6	7	23	1.5	*
Leuk Myeloid	756	2.2	8	378	2.0	7	244	1.6	*	349	2.1	9	19	1.3	*
Thyroid Gland	708	2.1	9	476	2.6	6	263	1.7	*	1314	7.9	3	10	0.7	*
Lung	695	2.1	10	173	0.9	*	143	0.9	*	261	1.6	*	38	2.5	*
Stomach	431	1.3	*	347	1.9	8	409	2.6	6	197	1.2	*	61	4.1	7
Rectum	643	1.9	*	310	1.7	9	268	1.7	10	274	1.6	*	26	1.7	*
Vagina	238	0.7	*	240	1.3	*	341	2.2	7	130	0.8	*	14	0.9	*
Hypopharynx	597	1.8	*	276	1.5	*	330	2.1	8	110	0.7	*	56	3.7	9
Brain	315	0.9	*	237	1.3	*	53	0.3	*	350	2.1	8	3	0.2	*
Leuk Lymphatic	546	1.6	*	174	0.9	*	106	0.7	*	346	2.1	10	12	0.8	*
Gall Bladder	659	2.0	*	47	0.3	*	70	0.4	*	38	0.2	*	76	5.1	6
Sec Lymph N	366	1.1	*	153	0.8	*	136	0.9	*	123	0.7	*	57	3.8	8
Total	**28876**	**85.6**		**16287**	**87.8**		**13784**	**88.5**		**13839**	**83.1**		**1200**	**80.1**	
All sites	**33722**	**100.0**		**18552**	**100.0**		**15581**	**100.0**		**16648**	**100.0**		**1498**	**100.0**	

* Rank not within first ten

Females

In *Mumbai,* cancers of the breast and cervix have become the first and second leading sites. Cancer of the ovary, which was the fifth leading site of cancer is now the third leading site. Cancers of the thyroid gland and lung, which were hitherto not among the ten leading sites, now respectively constitute the ninth and tenth leading site among all female cancers.

In *Bangalore,* there is little change in the leading sites though there is a slight decline in the relative proportion of cancer of the cervix and a marginal increase in the relative proportion of cancer of the breast.

In *Chennai* also, as in Bangalore, the slight changes in the relative proportions of cancers of the cervix and breast are noticed. In addition, cancer of the rectum, which was not among the ten leading sites of cancer in females, is now a leading site.

In *Thiruvananthapuram,* cancer of the breast not only continues as the leading site but the relative proportion of this site of cancer has shown an increase with a corresponding decline in cancer of the cervix. Cancer of the thyroid gland, which was the fourth leading site earlier, is the third leading site with an increase in the relative proportion from 5.7 to 7.9%. Likewise, cancer of the ovary has shown a one percent increase, from 5.5 to 6.5% and is the fourth leading site.

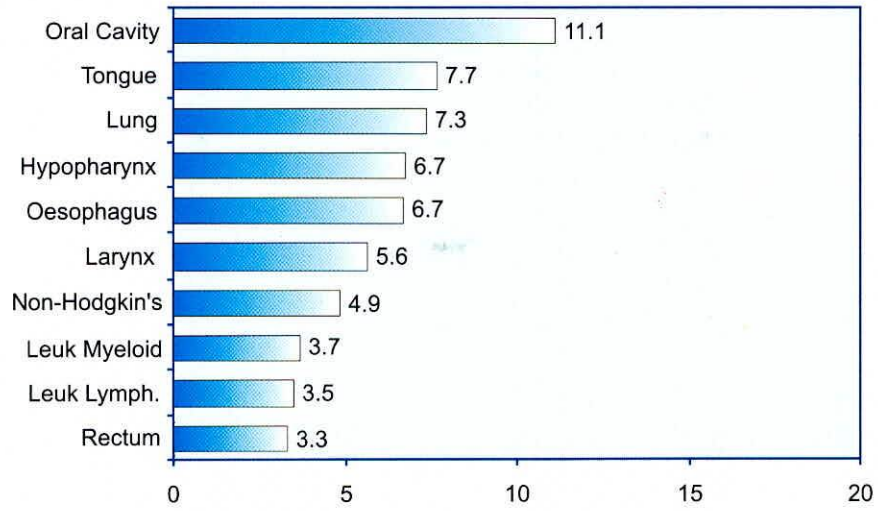
In *Dibrugarh,* as in Bangalore and Chennai, cancer of the cervix has shown a decline in the relative proportion with an increase in the relative proportion of cancer of the breast, which is the second leading site. Cancer of the ovary, which was sixth leading site, is now the fourth leading site. Cancer of the gall bladder, which was not among the ten leading sites of cancer earlier, is now the sixth leading site.

In males, cancer of the rectum, becoming one of ten leading sites in Mumbai and Chennai and cancer of the lung surging ahead in Mumbai and Thiruvananthapuram are the notable changes.

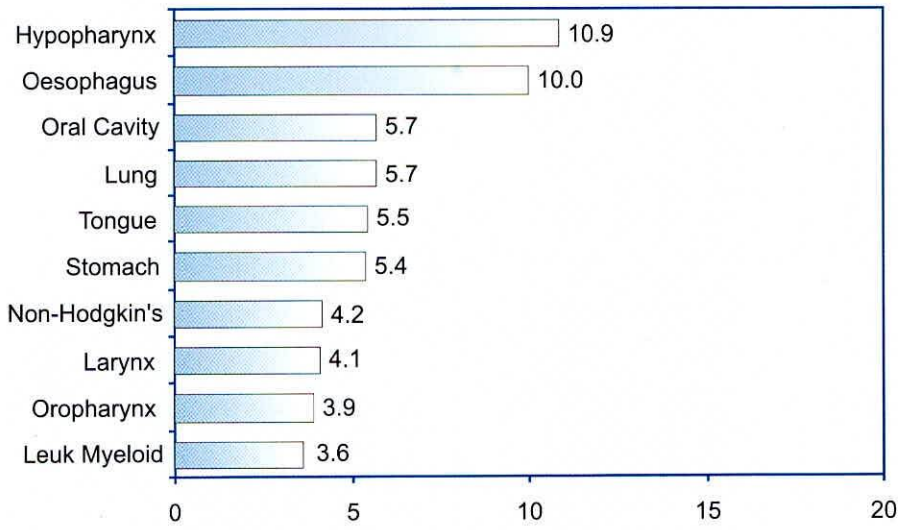
In females, cancer the thyroid gland in Mumbai, cancer of the rectum in Chennai and cancer of the gall bladder in Dibrugarh are making their first appearance among the ten leading sites.

Fig. 1.2(a) : Ten Leading Sites of Cancer - Males

Mumbai



Bangalore



Chennai

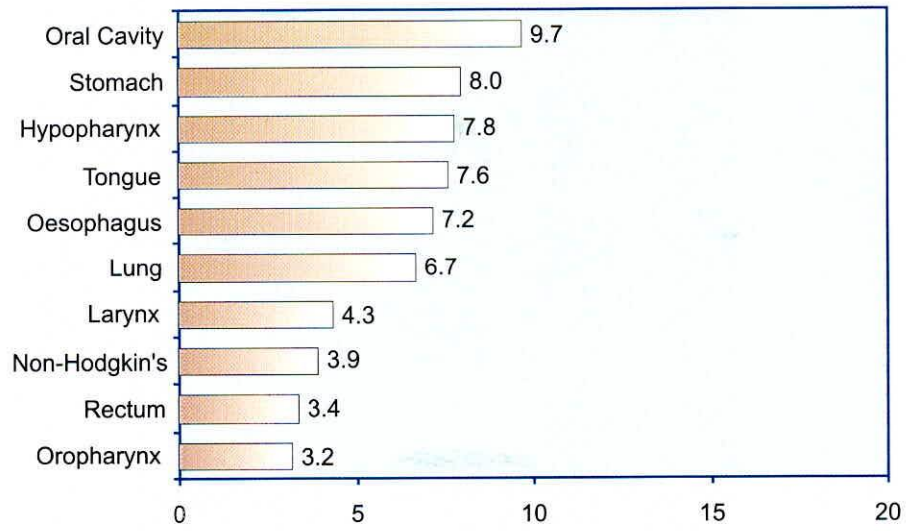
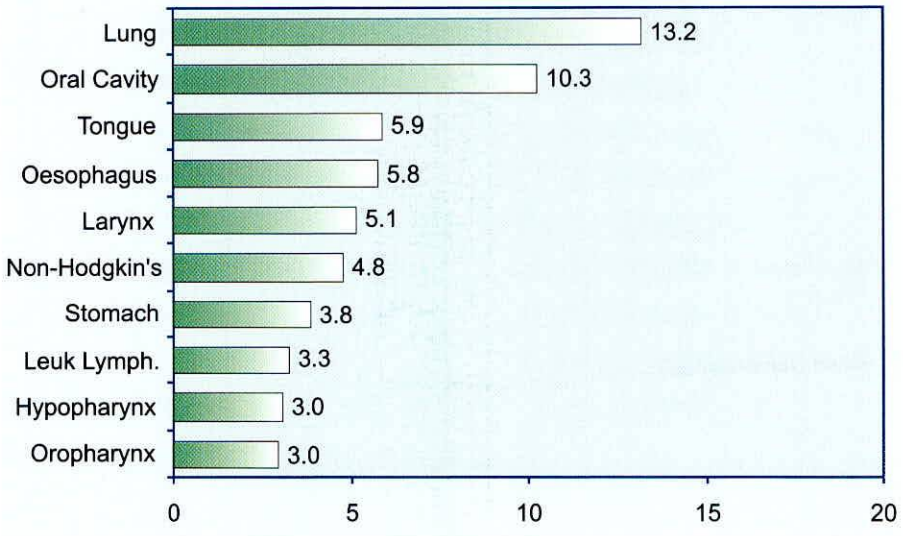


Fig. 1.2(a) : Ten Leading Sites of Cancer - Males (Contd..)

Thiruvananthapuram



Dibrugarh

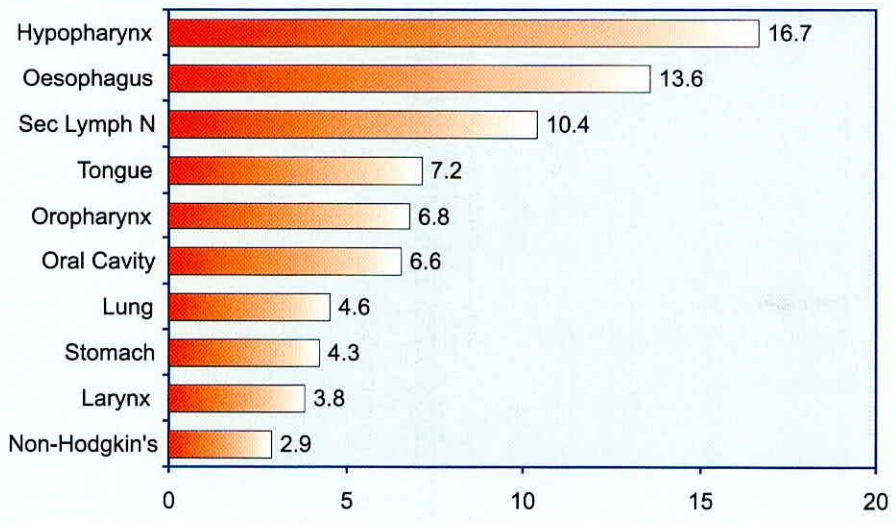
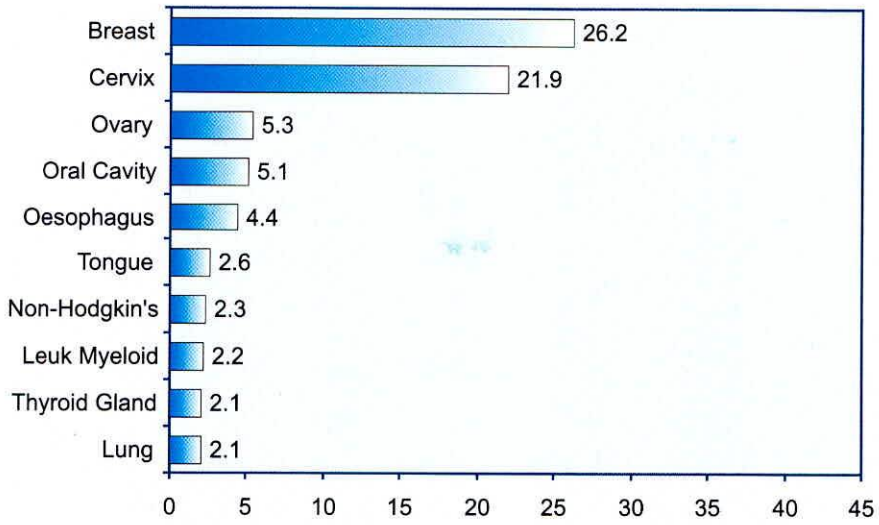
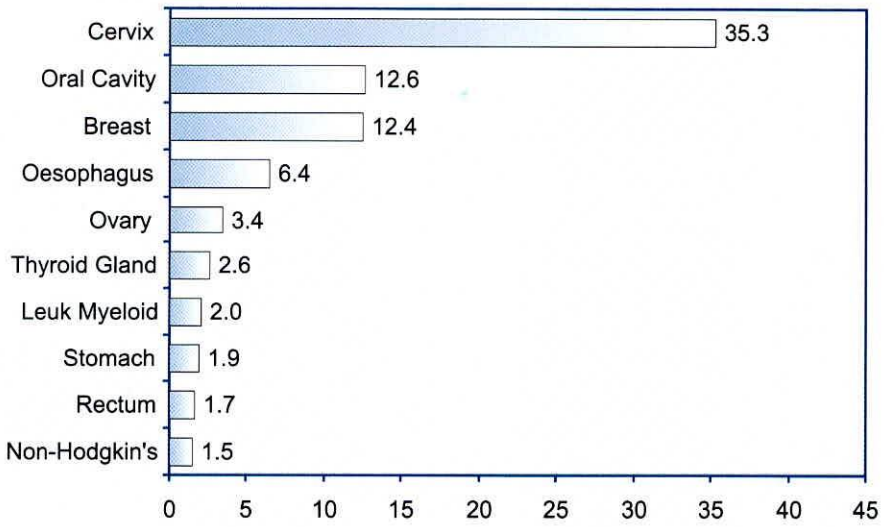


Fig. 1.2(b) : Ten Leading Sites of Cancer - Females

Mumbai



Bangalore



Chennai

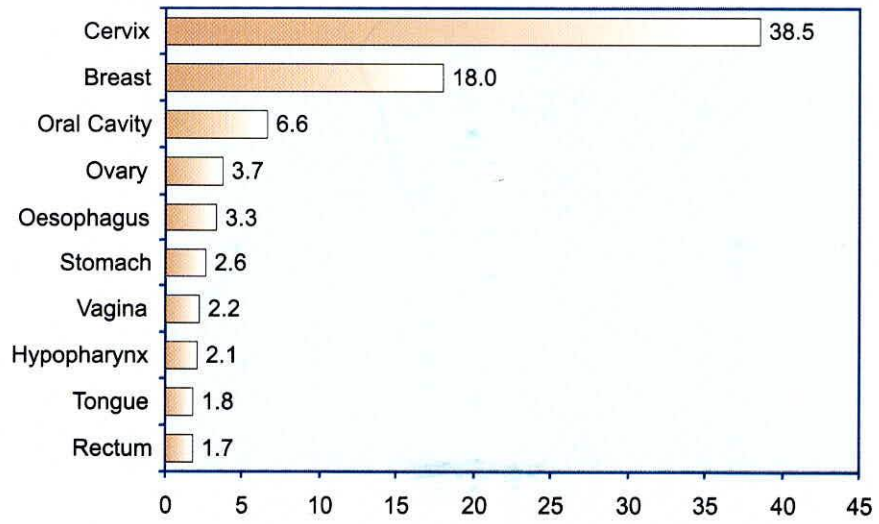
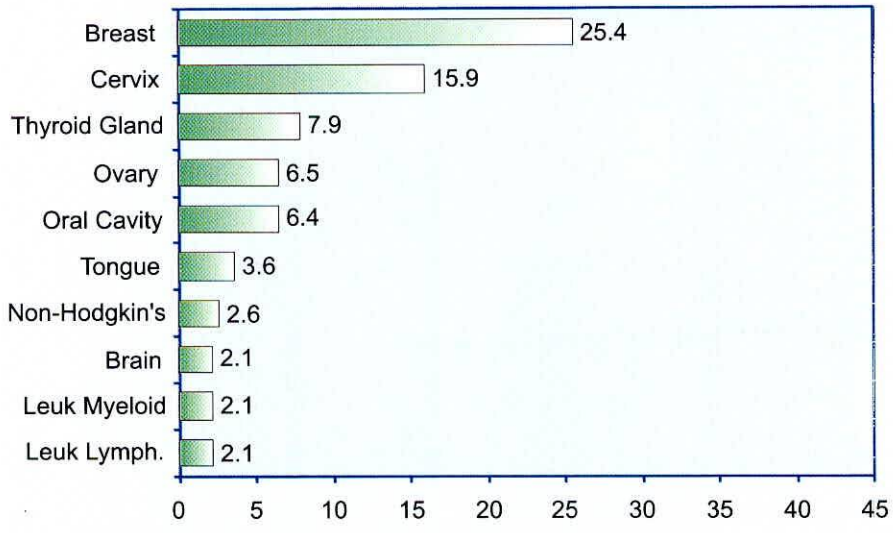
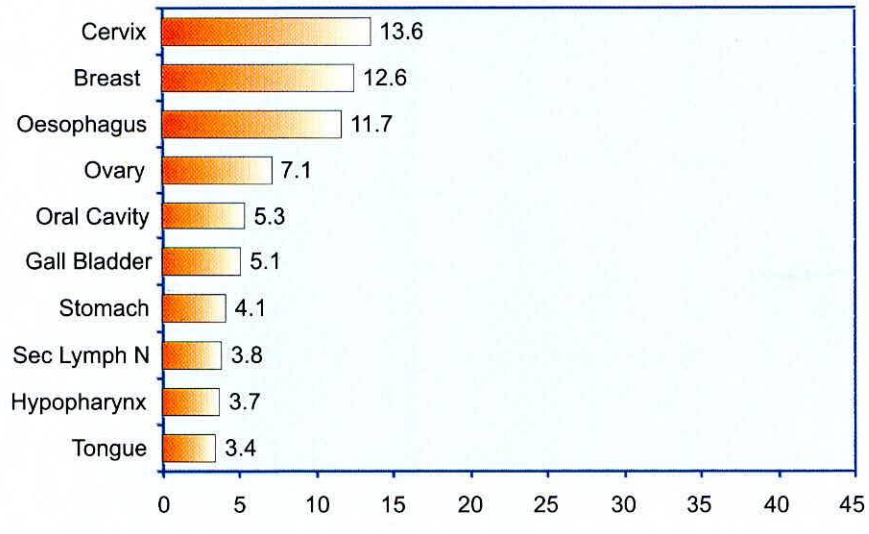


Fig. 1.2(b) : Ten Leading Sites of Cancer - Females (Contd..)

Thiruvananthapuram



Dibrugarh



Chapter 2

CANCERS IN BROAD AGE GROUPS

The proportion and types of cancer vary according to age. This chapter provides the number and proportion of the leading sites of cancer in different broad age groups.

The numbers and relative proportions of cancers, in the broad age groups 0-14, 15-34, 35-64 and 65 plus years of age, for both sexes across registries are shown in Table 2.1 and Figure 2.1.

Table 2.1: Number (#) and Proportion(%) of Cancers by Broad Age Groups

Males

Registry	00-14		15-34		35-64		65+		All Ages
	#	%	#	%	#	%	#	%	#
Mumbai	2288	5.3	5338	12.4	26411	61.4	8916	20.7	43006 *
Bangalore	1031	6.5	1603	10.1	9588	60.2	3704	23.3	15926
Chennai	483	3.6	1429	10.7	8653	64.5	2848	21.2	13413
Thi'puram	878	4.6	1793	9.4	10838	57.1	5469	28.8	18978
Dibrugarh	67	2.5	198	7.5	1832	69.3	548	20.7	2645

Females

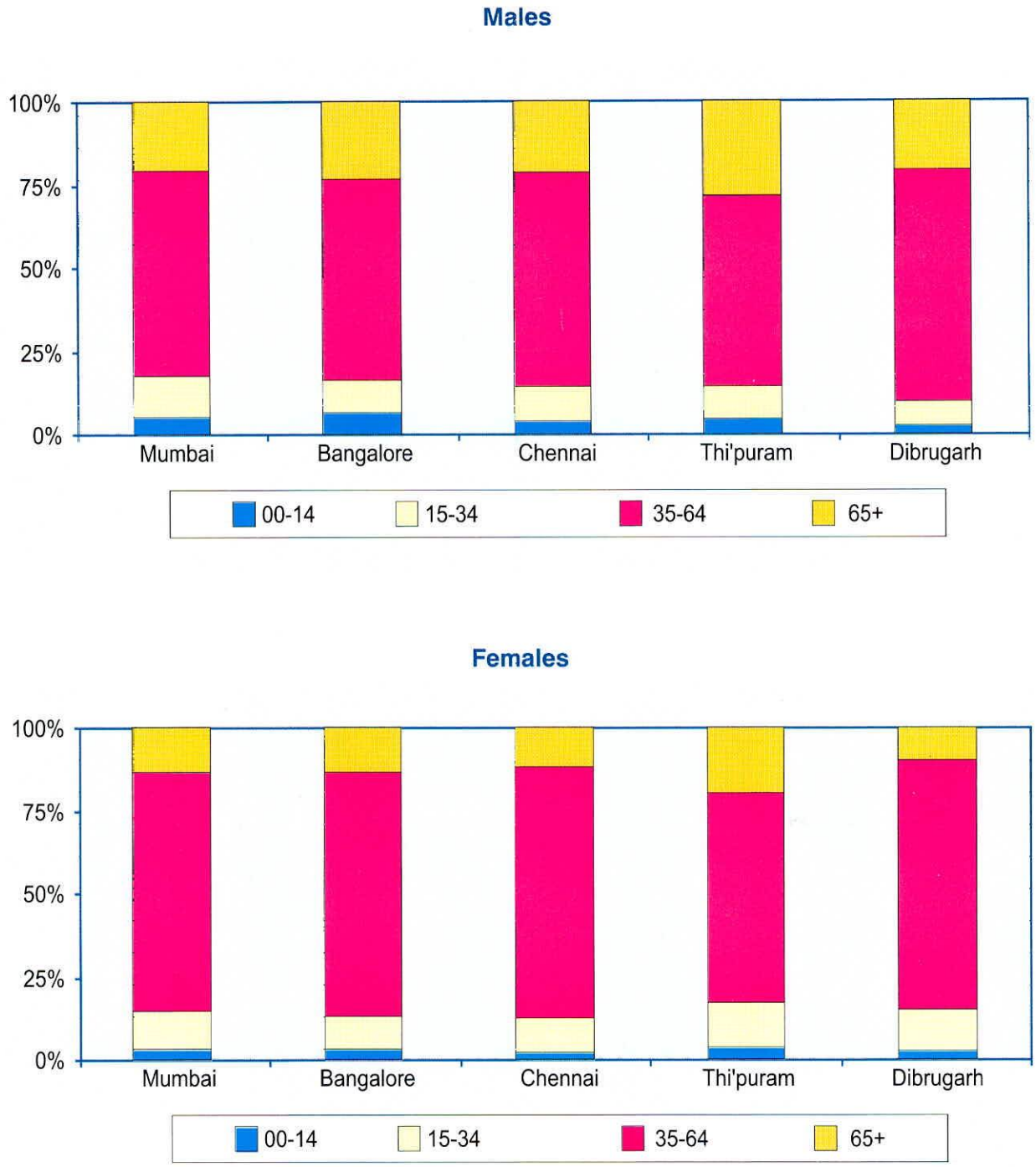
Registry	00-14		15-34		35-64		65+		All Ages
	#	%	#	%	#	%	#	%	#
Mumbai	1090	3.2	3921	11.6	24116	71.5	4549	13.5	33722 *
Bangalore	554	3.0	1891	10.2	13567	73.1	2540	13.7	18552
Chennai	316	2.0	1628	10.4	11752	75.4	1885	12.1	15581
Thi'puram	651	3.9	2192	13.2	10508	63.1	3297	19.8	16648
Dibrugarh	42	2.8	184	12.3	1126	75.2	146	9.7	1498

Both Sexes

Registry	00-14		15-34		35-64		65+		All Ages
	#	%	#	%	#	%	#	%	#
Mumbai	3378	4.4	9259	12.1	50527	65.9	13465	17.5	76728 *
Bangalore	1585	4.6	3494	10.1	23155	67.2	6244	18.1	34478
Chennai	799	2.8	3057	10.5	20405	70.4	4733	16.3	28994
Thi'puram	1529	4.3	3985	11.2	21346	59.9	8766	24.6	35626
Dibrugarh	109	2.6	382	9.2	2958	71.4	694	16.8	4143

** Includes 0.1% Age- Unknown cases*

Fig. 2.1: Proportion of Cancers By Broad Age Groups



Childhood: 0-14 Year Age Group

Overall childhood cancers (0-14 year age group) constitute 2.5 to 6.5% of all cancers with the proportion being slightly more in males compared to females. In the three individual five-year age groups (0-4, 5-9 and 10-14 years) of childhood cancer, the relative proportion shows only slight variation (Table 2.2).

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

Males

Registry	0-4 Age Group		5-9 Age Group		10-14 Age Group		All Childhood Cancers
	#	%	#	%	#	%	
Mumbai	682	29.8	761	33.3	845	36.9	2288
Bangalore	325	31.5	381	37.0	325	31.5	1031
Chennai	139	28.8	158	32.7	186	38.5	483
Thi'puram	354	40.3	248	28.2	276	31.4	878
Dibrugarh	27	40.3	24	35.8	16	23.9	67

Females

Registry	0-4 Age Group		5-9 Age Group		10-14 Age Group		All Childhood Cancers
	#	%	#	%	#	%	
Mumbai	328	30.1	338	31.0	424	38.9	1090
Bangalore	163	29.4	197	35.6	194	35.0	554
Chennai	88	27.8	85	26.9	143	45.3	316
Thi'puram	241	37.0	152	23.3	258	39.6	651
Dibrugarh	15	35.7	12	28.6	15	35.7	42

Both Sexes

Registry	0-4 Age Group		5-9 Age Group		10-14 Age Group		All Childhood Cancers
	#	%	#	%	#	%	
Mumbai	1010	29.9	1099	32.5	1269	37.6	3378
Bangalore	488	30.8	578	36.5	519	32.7	1585
Chennai	227	28.4	243	30.4	329	41.2	799
Thi'puram	595	38.9	400	26.2	534	34.9	1529
Dibrugarh	42	38.5	36	33.0	31	28.4	109

Table 2.3: Number (#) and Relative Proportion (%) of Broad Types of Cancers in childhood

Males

Broad Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I Leukaemias	972	42.50	417	40.45	139	28.78	469	44.41	17	25.37
II Lymphomas	449	19.63	203	19.69	125	25.88	124	11.74	13	19.40
III C.N.S. Tumours	186	8.13	96	9.31	17	3.52.	111	10.51	3	4.48
IV S.N.S. Tumours	63	2.75	49	4.75	13	2.69	61	5.78	0	0.00
V Retinoblastoma	68	2.97	42	4.07	51	10.56	43	4.07	8	11.94
VI Renal Tumours	67	2.93	43	4.17	9	1.86	25	2.37	9	13.43
VII Hepatic Tumours	21	0.92	9	0.87	5	1.04	9	0.85	0	0.00
VIII Bone Tumours	149	6.52	48	4.66	47	9.73	55	5.21	4	5.97
IX Soft-tissue Sarcomas	179	7.83	58	5.63	35	7.25	49	4.64	8	11.94
X Germ-cell Tumours	46	2.01	11	1.07	8	1.66	16	1.52	1	1.49
XI Other Carcinomas	71	3.10	45	4.36	26	5.38	26	2.46	2	2.99
XII Others	16	0.70	10	0.96	8	1.66	68	6.44	2	2.99
All Types	**2287**	**100.00**	**1031**	**100.00**	**483**	**100.00**	**1056**	**100.00**	**67**	**100.00**

Females

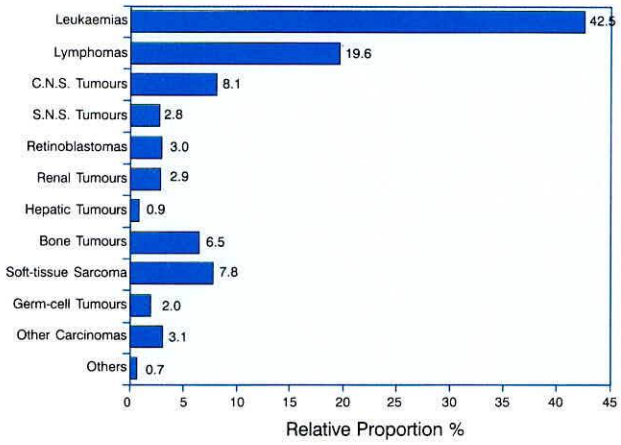
Broad Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I Leukaemias	437	40.13	208	37.55	93	29.43	283	35.96	10	23.81
II Lymphomas	115	10.56	54	9.75	35	11.08	58	7.37	1	2.38
III C.N.S. Tumours	90	8.26	52	9.39	13	4.11	106	13.47	0	0.00
IV S.N.S. Tumours	35	3.21	18	3.25	9	2.85	47	5.97	1	2.38
V Retinoblastoma	58	5.33	38	6.86	38	12.03	18	2.29	8	19.05
VI Renal Tumours	48	4.41	28	5.05	9	2.85	21	2.67	4	9.52
VII Hepatic Tumours	9	0.83	5	0.90	4	1.27	5	0.64	1	2.38
VIII Bone Tumours	89	8.17	54	9.75	33	10.44	58	7.37	3	7.14
IX Soft-tissue Sarcomas	90	8.26	35	6.32	32	10.13	54	6.86	4	9.52
X Germ-cell Tumours	67	6.15	26	4.69	23	7.28	33	4.19	7	16.67
XI Other Carcinomas	43	3.95	27	4.87	20	6.33	26	3.30	2	4.76
XII Others	8	0.73	9	1.62	7	2.22	78	9.91	1	2.38
All Types	**1089**	**100.00**	**554**	**100.00**	**316**	**100.00**	**787**	**100.00**	**42**	**100.00**

Table 2.3 and the corresponding Fig. 2.2 give the number and relative proportion of the broad types of childhood cancer, while table 2.4 give the number and relative proportion of the specific types of childhood cancer. To maintain a standard interpretation and comparison, an International Classification Scheme for Childhood Cancers has been followed (Parkin et al, 1988).

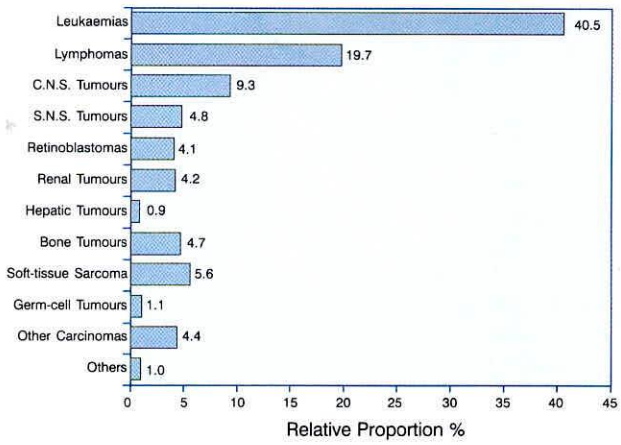
Fig. 2.2(a): Proportion of Broad Types of Childhood Cancers

Males

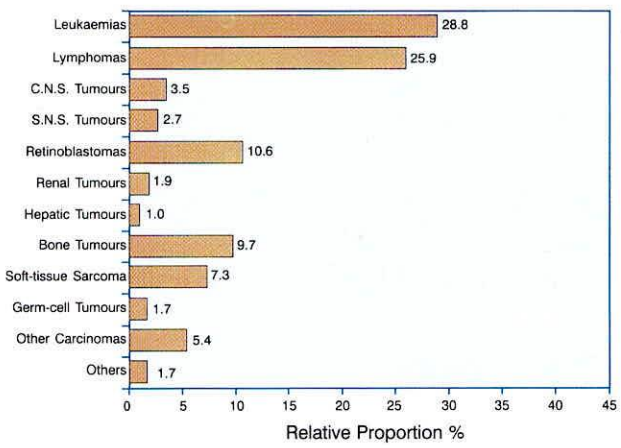
Mumbai



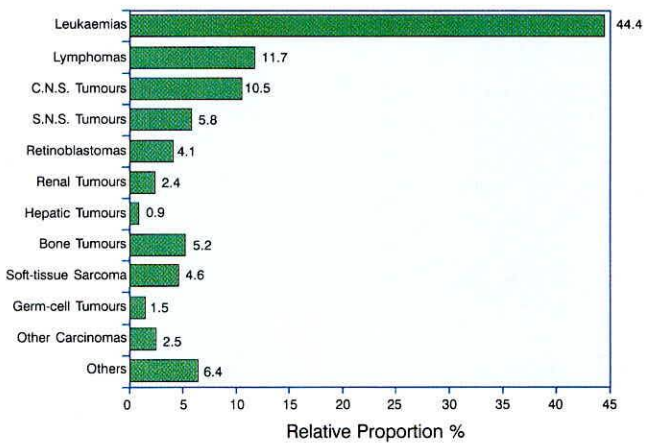
Bangalore



Chennai



Thi'puram



Dibrugarh

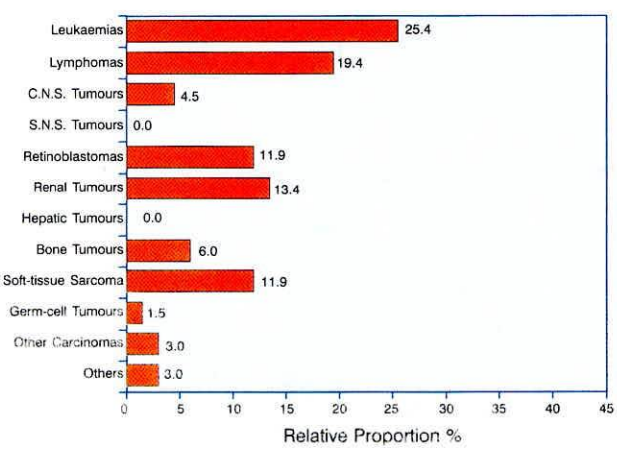
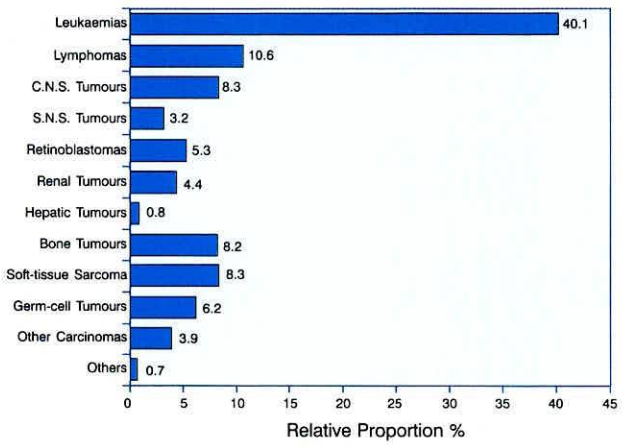


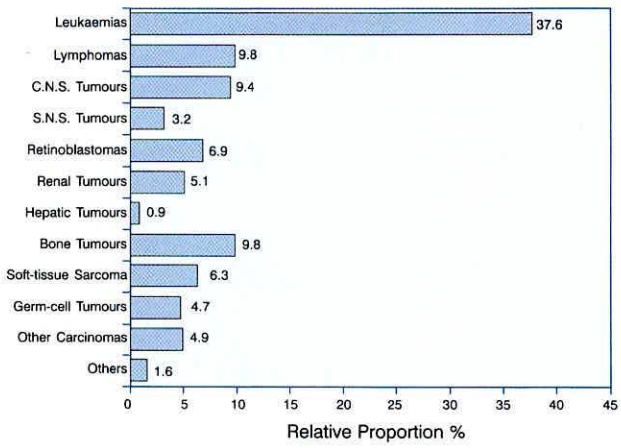
Fig. 2.2(b): Proportion of Broad Types of Childhood Cancers

Females

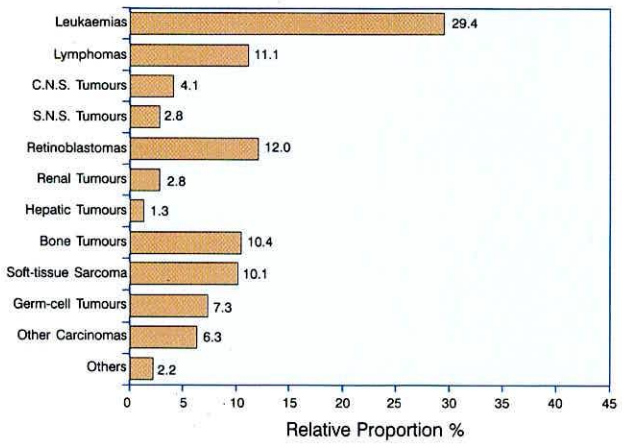
Mumbai



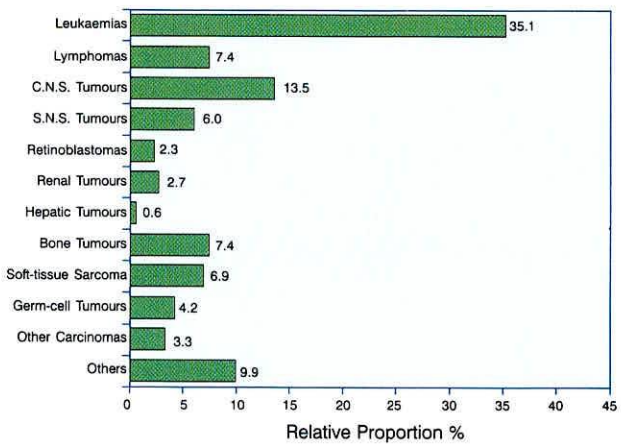
Bangalore



Chennai



Thi'puram



Dibrugarh

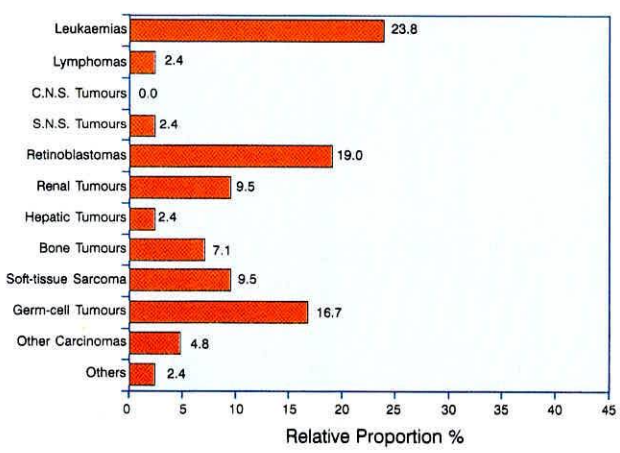


Table 2.4(a): Number(#) and Relative Proportion(%) of Specific Types of cancer in childhood

Males

Specific Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I. Leukaemias	972	42.50	417	40.45	139	28.78	469	44.41	17	25.37
a) Acute lymphocytic	730	31.92	261	25.32	92	19.05	399	37.78	12	17.91
b) Other lymphoid	0	0.00	4	0.39	0	0.00	0	0.00	0	0.00
c) Acute non-lymphocytic	152	6.65	87	8.44	35	7.25	59	5.59	4	5.97
d) Chronic myeloid	46	2.01	19	1.84	4	0.83	8	0.76	1	1.49
e) Others	44	1.92	46	4.46	8	1.66	3	0.28	0	0.00
II. Lymphomas	449	19.63	203	19.69	125	25.88	124	11.74	13	19.40
a) Hodgkin's	268	11.72	102	9.89	70	14.49	65	6.16	2	2.99
b) Non-Hodgkin's	124	5.42	46	4.46	49	10.14	41	3.88	10	14.93
c) Burkitt's	30	1.31	25	2.42	2	0.41	7	0.66	0	0.00
d) Unspecified	27	1.18	26	2.52	4	0.83	6	0.57	0	0.00
e) Histiocytosis	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
f) Others	3	0.13	4	0.39	0	0.00	5	0.47	1	1.49
III. C.N.S. Tumours	186	8.13	96	9.31	17	3.52.	111	10.51	3	4.48
a) Ependymoma	18	0.79	7	0.68	1	0.21	4	0.38	0	0.00
b) Astrocytoma	67	2.93	38	3.69	3	0.62	43	4.07	3	4.48
c) Medulloblastoma	73	3.19	29	2.81	4	0.83	22	2.08	0	0.00
d) Other gliomas	22	0.96	15	1.45	4	0.83	21	1.99	0	0.00
e) Others	6	0.26	7	0.68	5	1.04	21	1.99	0	0.00
IV. S.N.S. Tumours	63	2.75	49	4.75	13	2.69	61	5.78	0	0.00
a) Neuroblastomas	62	2.71	48	4.66	13	2.69	60	5.68	0	0.00
b) Others	1	0.04	1	0.10	0	0.00	1	0.09	0	0.00
V. Retinoblastoma	68	2.97	42	4.07	51	10.56	43	4.07	8	11.94
VI. Renal Tumours	67	2.93	43	4.17	9	1.86	25	2.37	9	13.43
a) Wilms' tumour	64	2.80	42	4.07	8	1.66	22	2.08	8	11.94
b) Renal Carcinoma	1	0.04	0	0.00	1	0.21	2	0.19	1	1.49
c) Others	2	0.09	1	0.10	0	0.00	1	0.09	0	0.00
VII. Hepatic Tumours	21	0.92	9	0.87	5	1.04	9	0.85	0	0.00
a) Hepatoblastoma	17	0.74	5	0.48	2	0.41	6	0.57	0	0.00
b) Hepatic Carcinoma	4	0.17	3	0.29	2	0.41	2	0.19	0	0.00
c) Others	0	0.00	1	0.10	1	0.21	1	0.09	0	0.00
VIII. Bone Tumours	149	6.52	48	4.66	47	9.73	55	5.21	4	5.97
a) Oesteosarcoma	87	3.80	27	2.62	28	5.80	42	3.98	0	0.00
b) Chondrosarcoma	2	0.09	1	0.10	0	0.00	0	0.00	0	0.00
c) Ewing's Sarcoma	46	2.01	17	1.65	17	3.52	12	1.14	3	4.48
d) Others	14	0.61	3	0.29	2	0.41	1	0.09	1	1.49
IX. Soft-tissue Sarcomas	179	7.83	58	5.63	35	7.25	49	4.64	8	11.94
a) Rhabdomyosarcoma	72	3.15	32	3.10	19	3.93	34	3.22	3	4.48
b) Fibrosarcoma	10	0.44	3	0.29	3	0.62.	6	0.57	1	1.49
c) Others	97	4.24	23	2.23	13	2.69	9	0.85	4	5.97
X. Germ-cell Tumours	46	2.01	11	1.07	8	1.66	16	1.52	1	1.49
a) Non-gonadal germ-cell	18	0.79	5	0.48	1	0.21	4	0.38	0	0.00
b) Gonadal germ-cell	27	1.18	6	0.58	7	1.45	11	1.04	1	1.49
c) Gonadal carcinomas	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
d) Others	1	0.04	0	0.00	0	0.00	1	0.09	0	0.00
XI. Other Carcinomas	71	3.10	45	4.36	26	5.38	26	2.46	2	2.99
a) Adrenocortical carcinoma	5	0.22	1	0.10	0	0.00	4	0.38	0	0.00
b) Thyroid carcinoma	5	0.22	5	0.48	3	0.62	8	0.76	0	0.00
c) Nasopharyngeal carcinoma	25	1.09	12	1.16	15	3.11	1	0.09	0	0.00
d) Melanomatous tumours	2	0.09	1	0.10	0	0.00	0	0.00	0	0.00
e) Others	34	1.49	26	2.52	8	1.66	13	1.23	2	2.99
XII. Others	16	0.70	5	0.48	7	1.45	65	6.16	0	0.00
All Types	**2287**	**100.00**	**1031**	**100.00**	**483**	**100.00**	**1056**	**100.00**	**67**	**100.00**

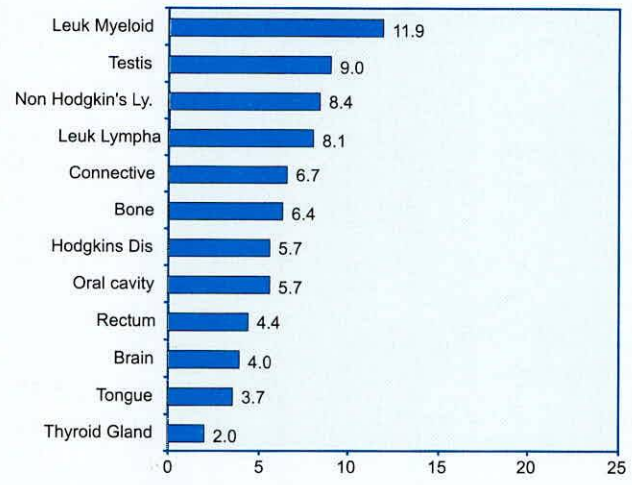
Table 2.4(b): Number(#) and Relative Proportion(%) of Specific Types of cancer in childhood

Females

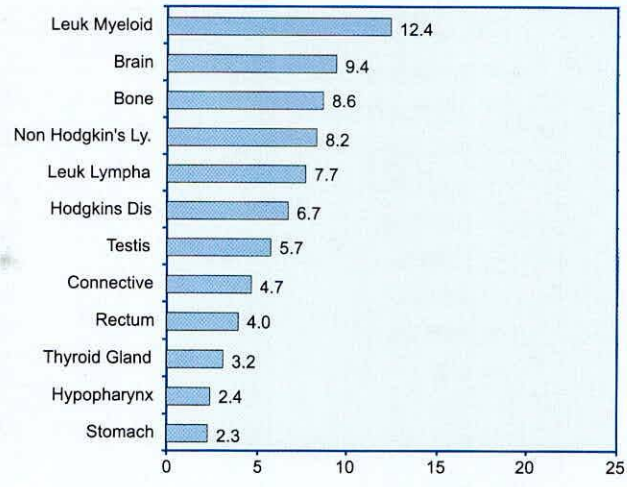
Specific Types of Cancers in Childhood	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
I. Leukaemias	437	40.13	208	37.55	93	29.43	283	35.96	10	23.81
a) Acute lymphocytic	327	30.03	120	21.66	52	16.46	209	26.56	7	16.67
b) Other lymphoid	0	0.00	0	0.00	0	0.00	2	0.25	0	0.000
c) Acute non-lymphocytic	76	6.98	52	9.39	18	5.70	56	7.12	1	2.38
d) Chronic myeloid	21	1.93	13	2.35	12	3.80	11	1.40	2	4.76
e) Others	13	1.19	23	4.15	11	3.48	5	0.64	0	0.00
II. Lymphomas	115	10.56	54	9.75	35	11.08	58	7.37	1	2.38
a) Hodgkin's	59	5.42	26	4.69	18	5.70	20	2.54	0	0.00
b) Non-Hodgkin's	36	3.31	11	1.99	11	3.48	31	3.94	1	2.38
c) Burkitt's	12	1.10	6	1.08	2	0.63	1	0.13	0	0.00
d) Unspecified	9	0.83	10	1.81	2	0.63	3	0.38	0	0.00
e) Histiocytosis	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
f) Others	0	0.00	1	0.18	2	0.63	3	0.38	0	0.00
III. C.N.S. Tumours	90	8.26	52	9.39	13	4.11	106	13.47	0	0.00
a) Ependymoma	7	0.64	2	0.36	2	0.63	4	0.51	0	0.00
b) Astrocytoma	32	2.94	23	4.15	4	1.27	36	4.57	0	0.00
c) Medulloblastoma	26	2.39	13	2.35	5	1.58	17	2.16	0	0.00
d) Other gliomas	20	1.84	7	1.26	2	0.63	27	3.43	0	0.00
e) Others	5	0.46	7	1.26	0	0.00	22	2.80	0	0.00
IV. S.N.S. Tumours	35	3.21	18	3.25	9	2.85	47	5.97	1	2.38
a) Neuroblastomas	34	3.12	18	3.25	8	2.53	46	5.84	1	2.38
b) Others	1	0.09	0	0.00	1	0.32	1	0.13	0	0.00
V. Retinoblastoma	58	5.33	38	6.86	38	12.03	18	2.29	8	19.05
VI. Renal Tumours	48	4.41	28	5.05	9	2.85	21	2.67	4	9.52
a) Wilms' tumour	40	3.67	28	5.05	8	2.53	18	2.29	4	9.52
b) Renal Carcinoma	4	0.37	0	0.00	1	0.32	1	0.13	0	0.00
c) Others	4	0.37	0	0.00	0	0.00	2	0.25	0	0.00
VII. Hepatic Tumours	9	0.83	5	0.90	4	1.27	5	0.64	1	2.38
a) Hepatoblastoma	7	0.64	4	0.72	2	0.63	3	0.38	0	0.00
b) Hepatic Carcinoma	2	0.18	1	0.18	1	0.32	1	0.13	1	2.38
c) Others	0	0.00	0	0.00	1	0.32	1	0.13	0	0.00
VIII. Bone Tumours	89	8.17	54	9.75	33	10.44	58	7.37	3	7.14
a) Oesteosarcoma	57	5.23	26	4.69	20	6.33	37	4.70	3	7.14
b) Chondrosarcoma	2	0.18	0	0.00	0	0.00	0	0.00	0	0.00
c) Ewing's Sarcoma	22	2.02	22	3.97	11	3.48	19	2.41	0	0.00
d) Others	8	0.73	6	1.08	2	0.63	2	0.25	0	0.00
IX. Soft-tissue Sarcomas	90	8.26	35	6.32	32	10.13	54	6.86	4	9.52
a) Rhabdomyosarcoma	38	3.49	23	4.15	9	2.85	42	5.34	0	0.00
b) Fibrosarcoma	7	0.64	2	0.36	7	2.22	3	0.38	0	0.00
c) Others	45	4.13	10	1.81	16	5.06	9	1.14	4	9.52
X. Germ-cell Tumours	67	6.15	26	4.69	23	7.28	33	4.19	7	16.67
a) Non-gonadal germ-cell	15	1.38	6	1.08	0	0.00	14	1.78	1	2.38
b) Gonadal germ-cell	50	4.59	19	3.43	21	6.65	19	2.41	2	4.76
c) Gonadal carcinomas	2	0.18	0	0.00	2	0.63	0	0.00	4	9.52
d) Others	0	0.00	1	0.18	0	0.00	0	0.00	0	0.00
XI. Other Carcinomas	43	3.95	27	4.87	20	6.33	26	3.30	2	4.76
a) Adrenocortical carcinoma	3	0.28	0	0.00	0	0.00	2	0.25	0	0.00
b) Thyroid carcinoma	13	1.19	4	0.72	2	0.63	13	1.65	0	0.00
c) Nasopharyngeal carcinoma	9	0.83	2	0.36	7	2.22	1	0.13	0	0.00
d) Melanomatous tumours	3	0.28	1	0.18	0	0.00	0	0.00	0	0.00
e) Others	15	1.38	20	3.61	11	3.48	10	1.27	2	4.76
XII. Others	8	0.73	6	1.08	4	1.27	75	9.53	0	0.00
All Types	**1089**	**100.00**	**554**	**100.00**	**316**	**100.00**	**787**	**100.00**	**42**	**100.00**

Fig. 2.3(a): Leading Sites in Broad Age Group (15 - 34 Years) - Males

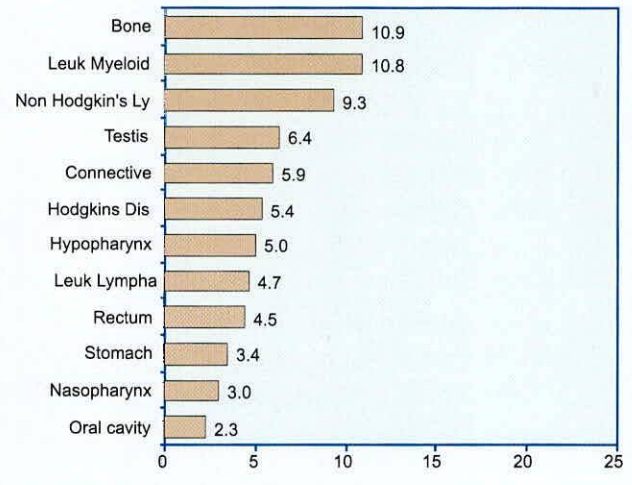
Mumbai



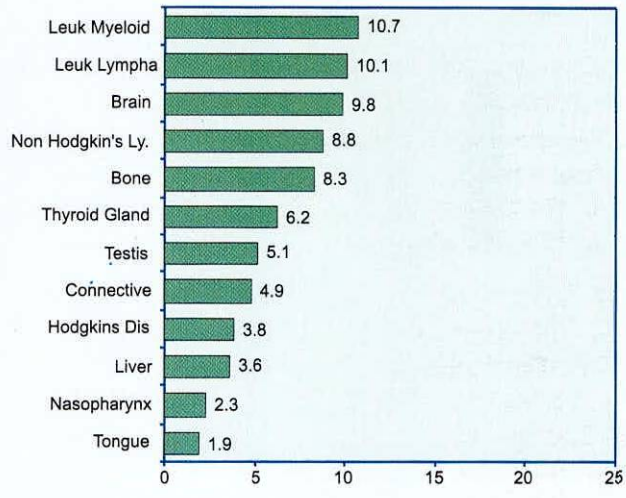
Bangalore



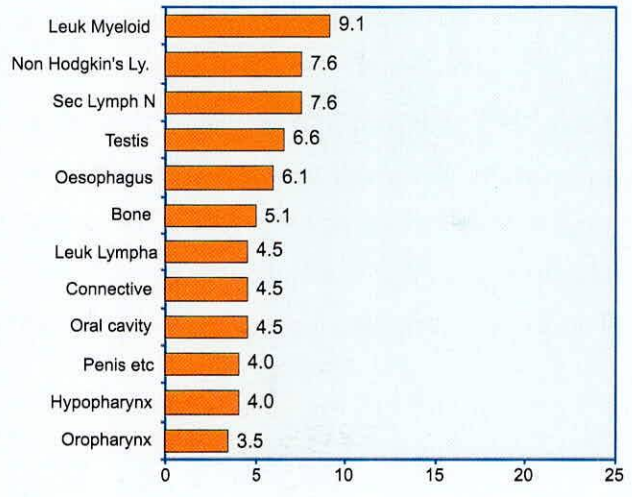
Chennai



Thiruvananthapuram



Dibrugarh

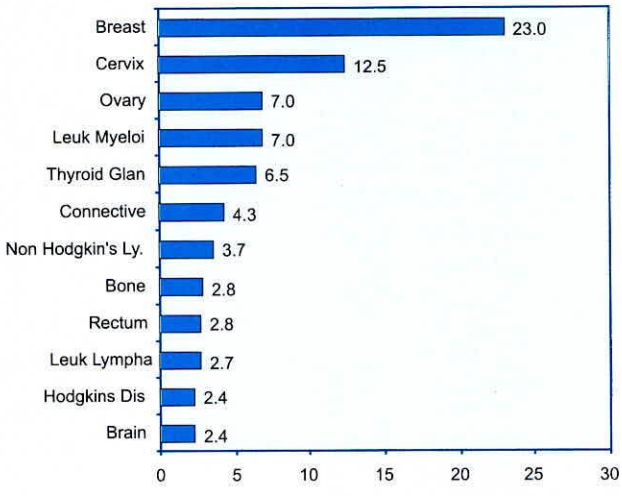


Young Adult: 15-34 Year Age Group

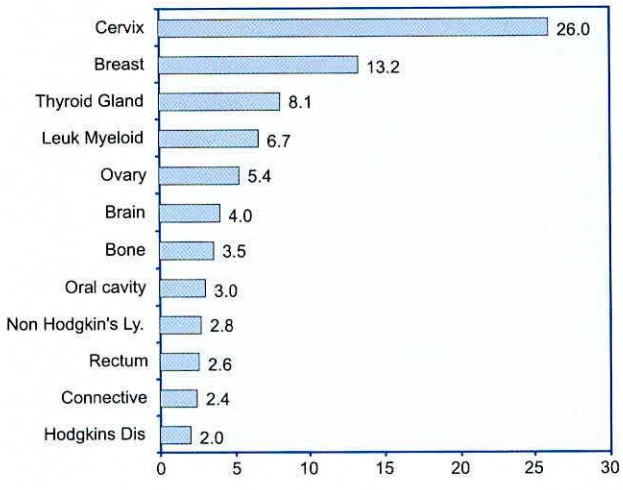
Males [Fig. 2.3 (a)]: In the young male adults (15-34 year age group), leukaemias and lymphomas, particularly myeloid leukaemia, cancers of the bone and brain and testicular tumours are common. The changes from the previous report concern the slight increase in the relative proportion of cancers of the rectum in Mumbai, Bangalore and Chennai.

Fig. 2.3(b): Leading Sites in Broad Age Group (15 - 34 Years) - Females

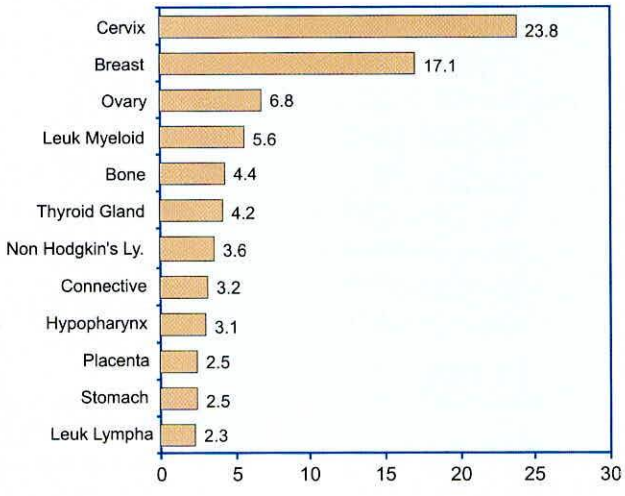
Mumbai



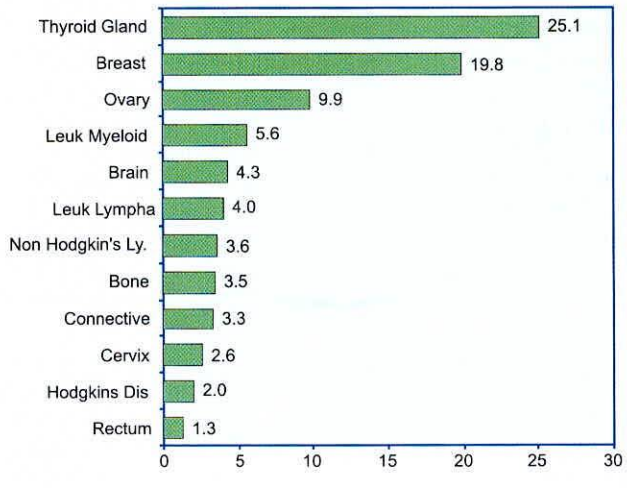
Bangalore



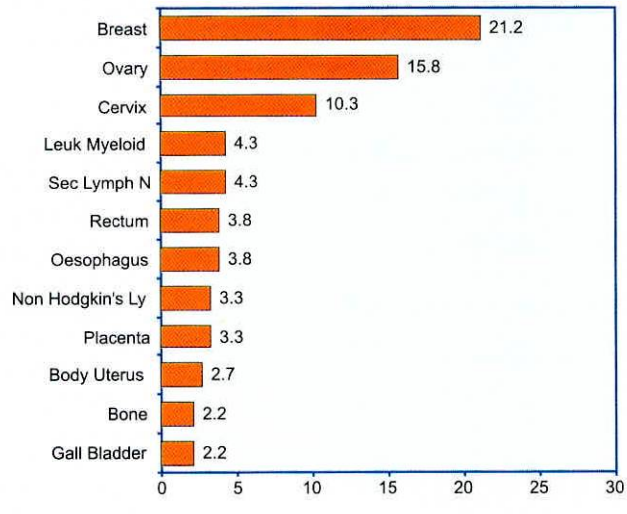
Chennai



Thiruvananthapuram



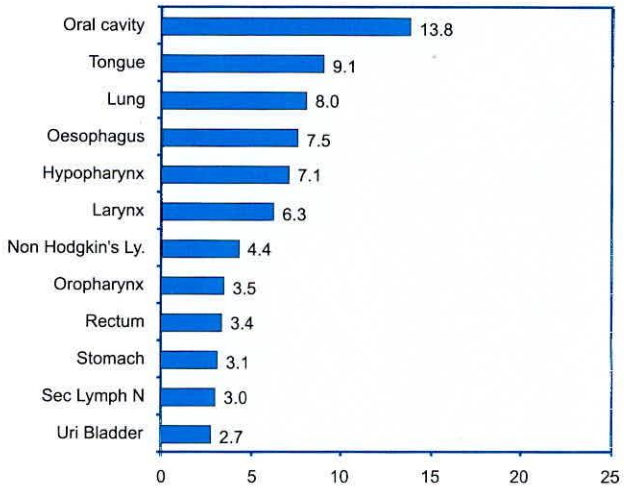
Dibrugarh



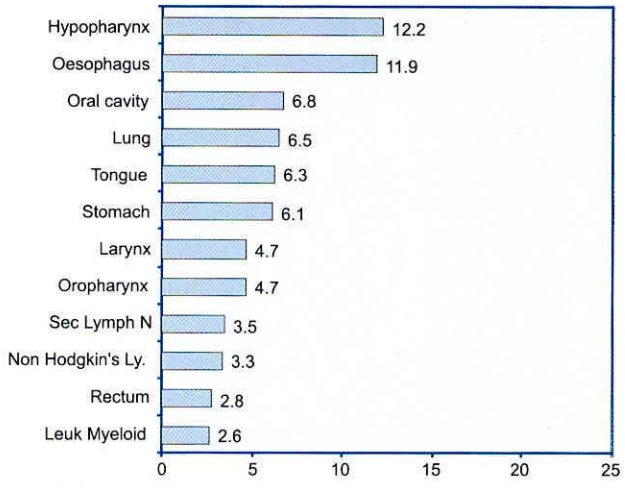
Females [Fig. 2.3 (b)]: In females, the relative proportion of thyroid cancers has shown a slight increase compared to the previous report in Mumbai, Bangalore and Thiruvananthapuram.

Fig. 2.4(a): Leading Sites in Broad Age Group (35 - 64 Years) - Males

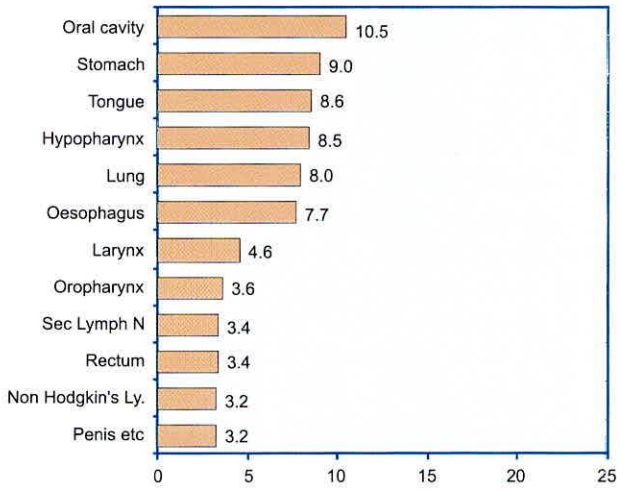
Mumbai



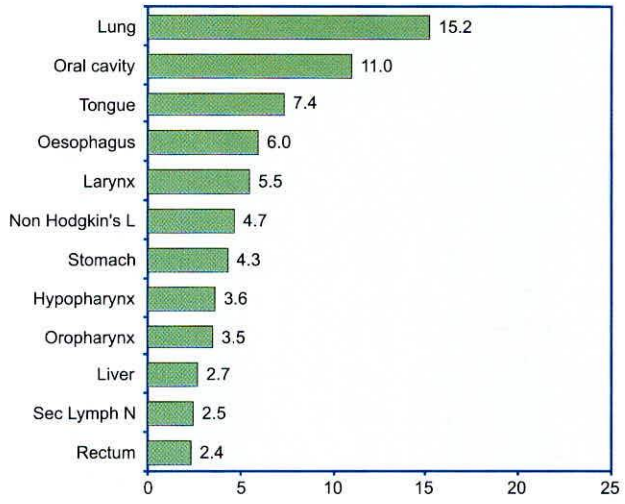
Bangalore



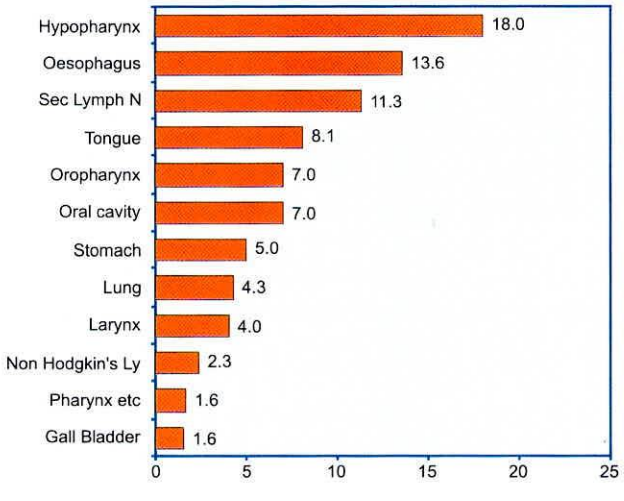
Chennai



Thiruvananthapuram



Dibrugarh

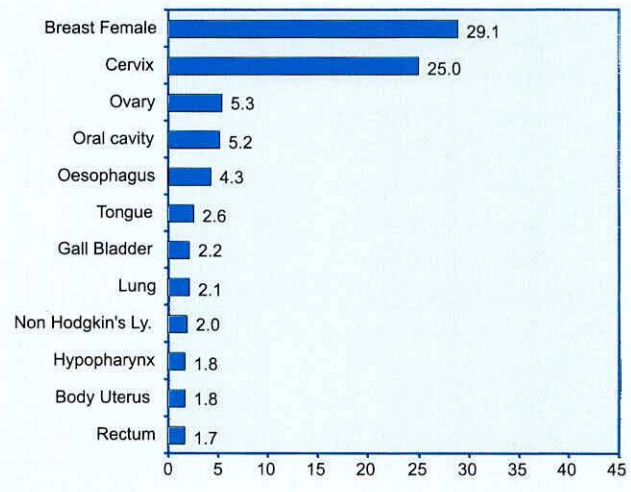


Older Adult: 35-64 Year Age Group

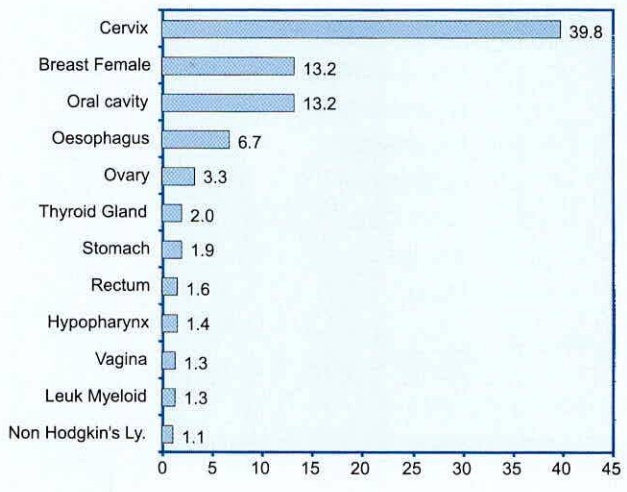
Males [Fig. 2.4 (a)]: In this truncated, older male adult (35-64 year age) group, the predominant cancers are of those sites known to be associated with use of tobacco. These sites include tongue, other mouth, oropharynx, hypopharynx, oesophagus, lung and larynx.

Fig. 2.4(b): Leading Sites in Broad Age Group (35 - 64 Years) - Females

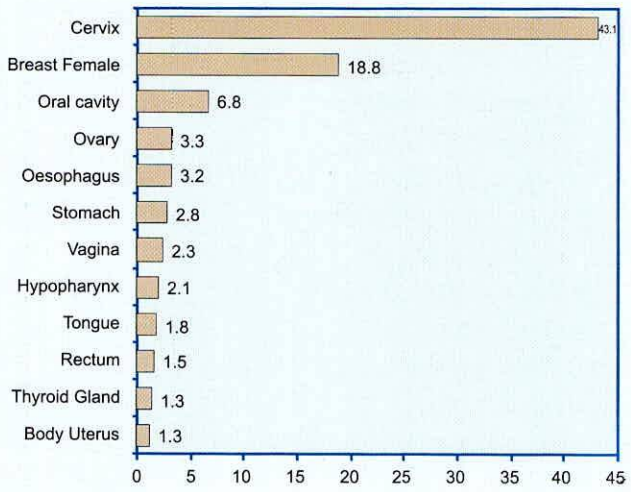
Mumbai



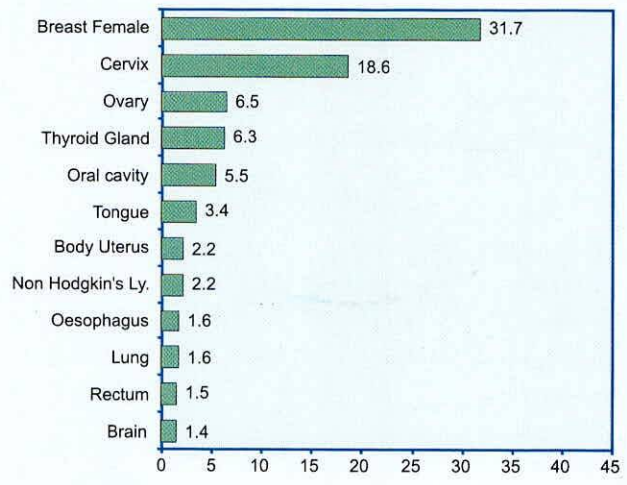
Bangalore



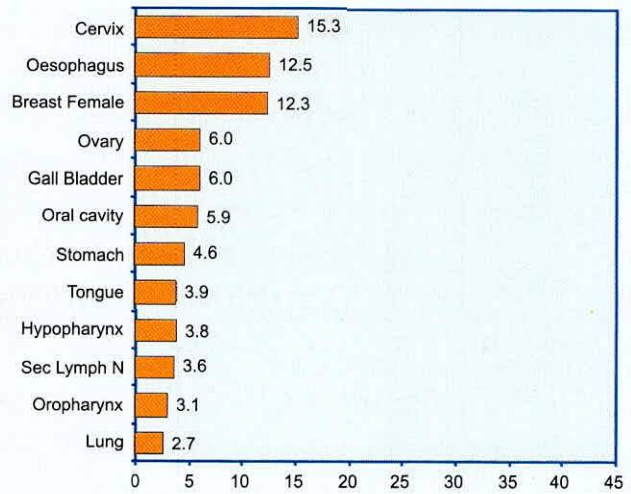
Chennai



Thiruvananthapuram



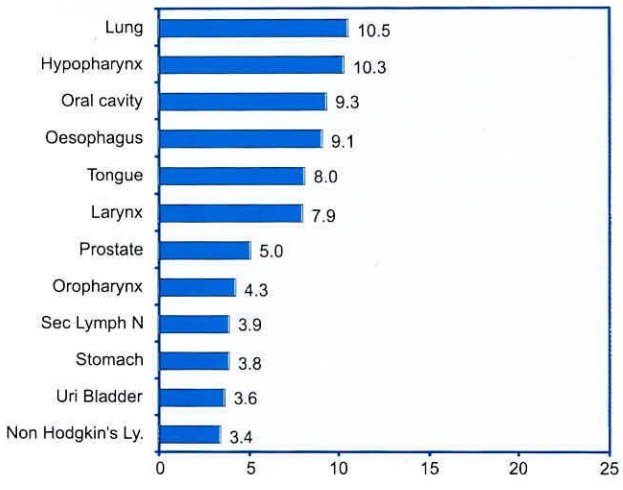
Dibrugarh



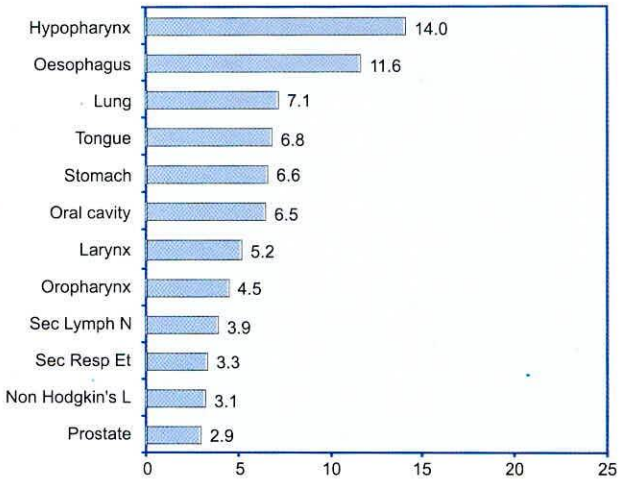
Females [Fig. 2.4 (b)]: Among females in this age group, cancer of the cervix was leading site in Bangalore, Chennai and Dibrugarh, whereas, in Mumbai and Thiruvananthapuram, it was breast. Besides, cancer of the ovary, cancer of the oesophagus was one of five leading sites in all centres except at Thiruvananthapuram, where it was ninth leading site. Cancer of the thyroid is one of ten leading sites of cancer in this age group at Bangalore, Chennai and Thiruvananthapuram.

Fig. 2.5(a): Leading Sites in Broad Age Group (65 Years and above) - Males

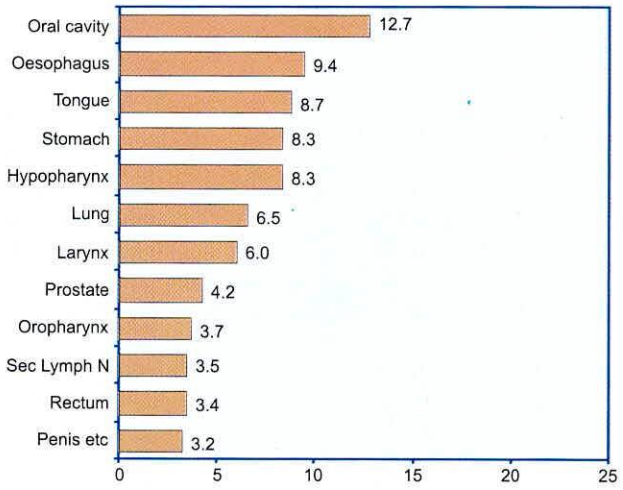
Mumbai



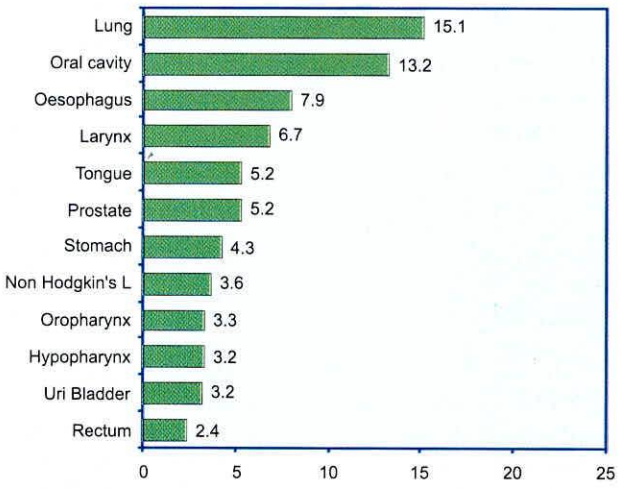
Bangalore



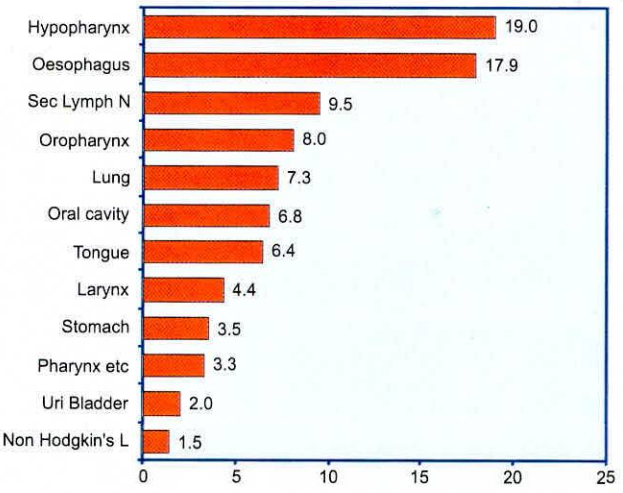
Chennai



Thiruvananthapuram



Dibrugarh

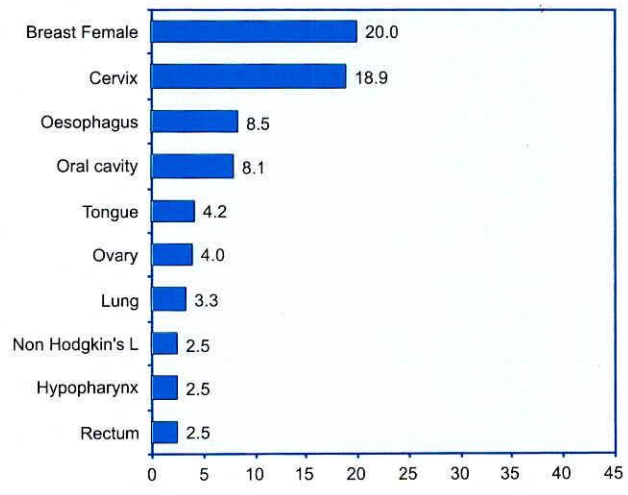


Elderly: 65 Year and above Age Group

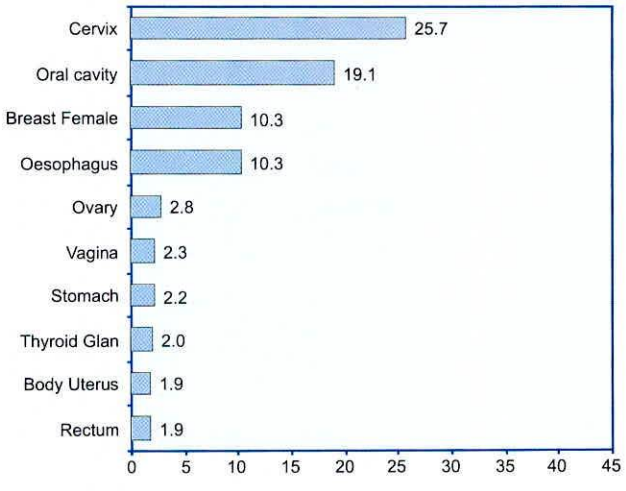
Males [Fig. 2.5 (a)]: There appears to be little difference among registries in the most frequent cancers in this elderly (above 64 years of age) group as compared with the previous age group in either sex. However, the emergence of cancer of the prostate as a frequent cancer site and possibly that of rectum are the salient features in males.

Fig. 2.5(b): Leading Sites in Broad Age Group (65 Years and above) - Females

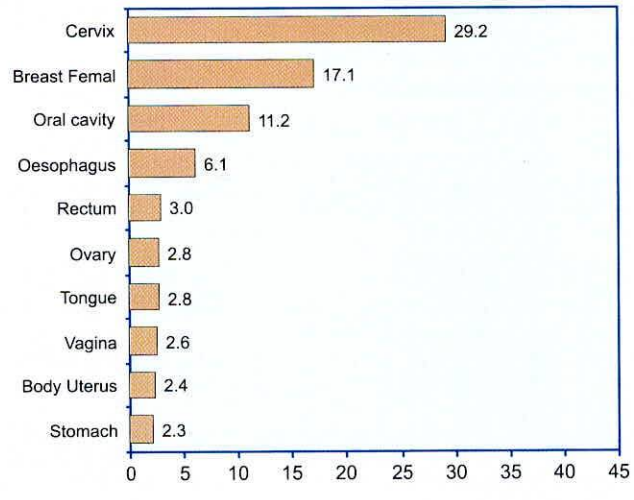
Mumbai



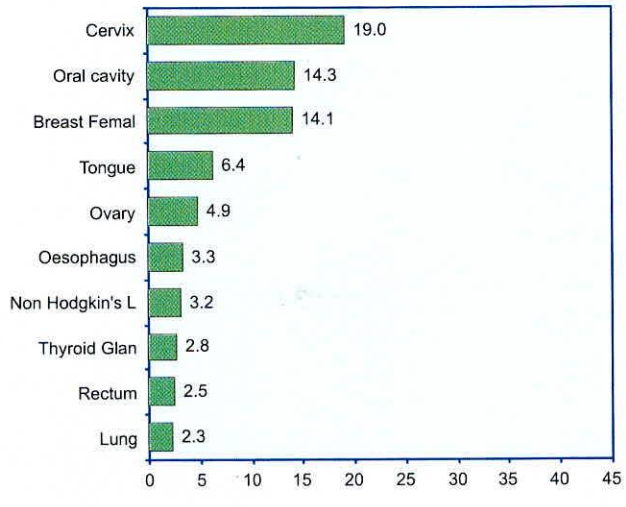
Bangalore



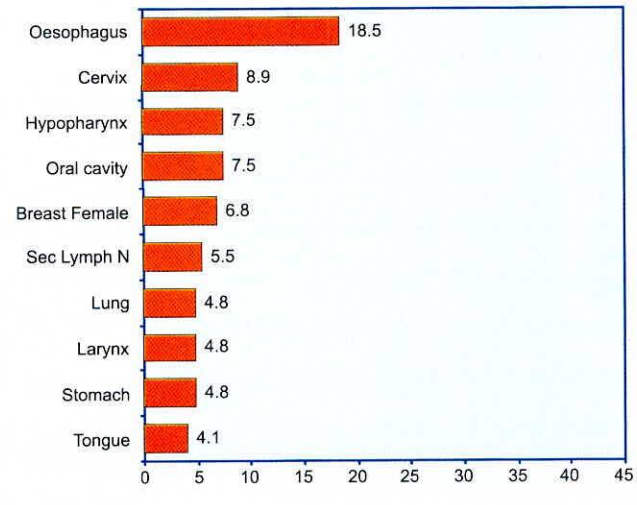
Chennai



Thiruvananthapuram



Dibrugarh



Females [Fig. 2.5 (b)]: In females, cancer of the oesophagus is the leading site in Dibrugarh and cancer breast has replaced cancer cervix in Mumbai. Overall, compared to the previous report a slight increase in the relative proportion of these cancers is observed.

Chapter 3

SITES OF CANCER ASSOCIATED WITH USE OF TOBACCO

Cancers of sites associated with use of tobacco as a group are easily the most important in any cancer centre. Hence a separate chapter on these sites denoting the relative importance of each is necessary.

Sites of cancer that have been associated with use of tobacco [Tobacco Related Cancers (TRC)] include, lip, tongue, oral cavity, oropharynx, hypopharynx, pharynx, oesophagus, larynx, lung and urinary bladder.

Table 3.1 and Figure 3.1 give the number and relative proportion of these sites of cancer as a whole in different registries. As in earlier years, the highest relative proportion of these sites in either sex (63.1 and 33.7%) was in Dibrugarh. In the other registries, it is around 50% of all cancers in males and varies from 15-24% among females.

Tables 3.2 and 3.3 and Fig 3.2 give the number and relative proportion according to the specific sites of TRC indicated above. The proportion relative to all sites of cancer, and the proportion relative to all tobacco related sites are given in the tables.

Table 3.4 and Figure 3.3 show the age distribution of these sites of cancer put together. All registries in either sex show similarity in the distribution. The relative proportion increases from age 30-34 years, reaching a peak at about 60 years of age in males and 55 years in females, except that in Thiruvananthapuram. Here especially in females the age at onset of these cancers appears to be slightly higher. This was seen in the report of previous years as well.

Table 3.1 : Number(#) & Proportion(%) of cancers associated with use of tobacco relative to all sites of cancer

Registry	Males			Females		
	All sites	#	%	All sites	#	%
Mumbai	43006	22039	51.2	33722	6056	18.0
Bangalore	15926	7729	48.5	18552	4503	24.3
Chennai	13413	6518	48.6	15581	2507	16.1
Thi'puram	18978	9256	48.8	16648	2550	15.3
Dibrugarh	2645	1668	63.1	1498	505	33.7
All Registries	**93968**	**47210**	**50.2**	**86001**	**16121**	**18.7**

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

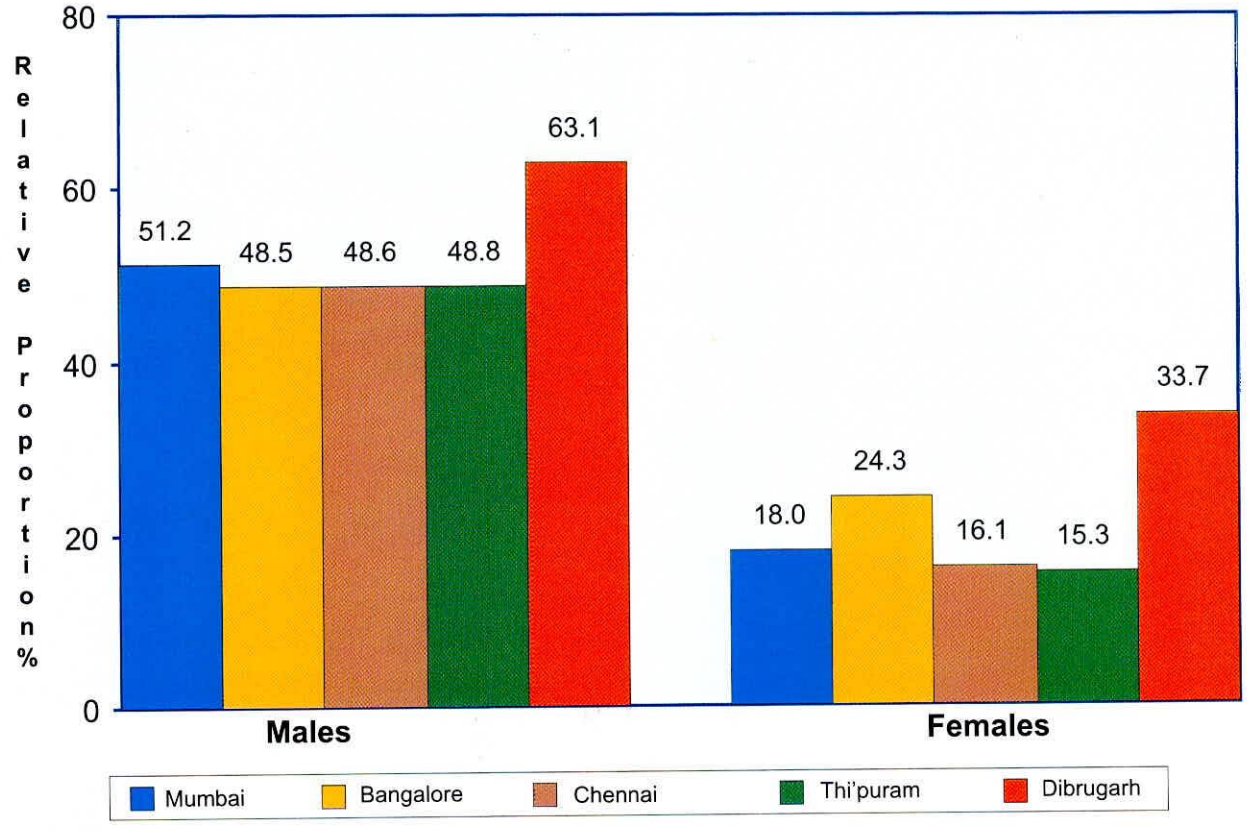


Fig. 3.2: Proportion of Specific Tobacco Related Sites Relative to All Tobacco Related Cancers

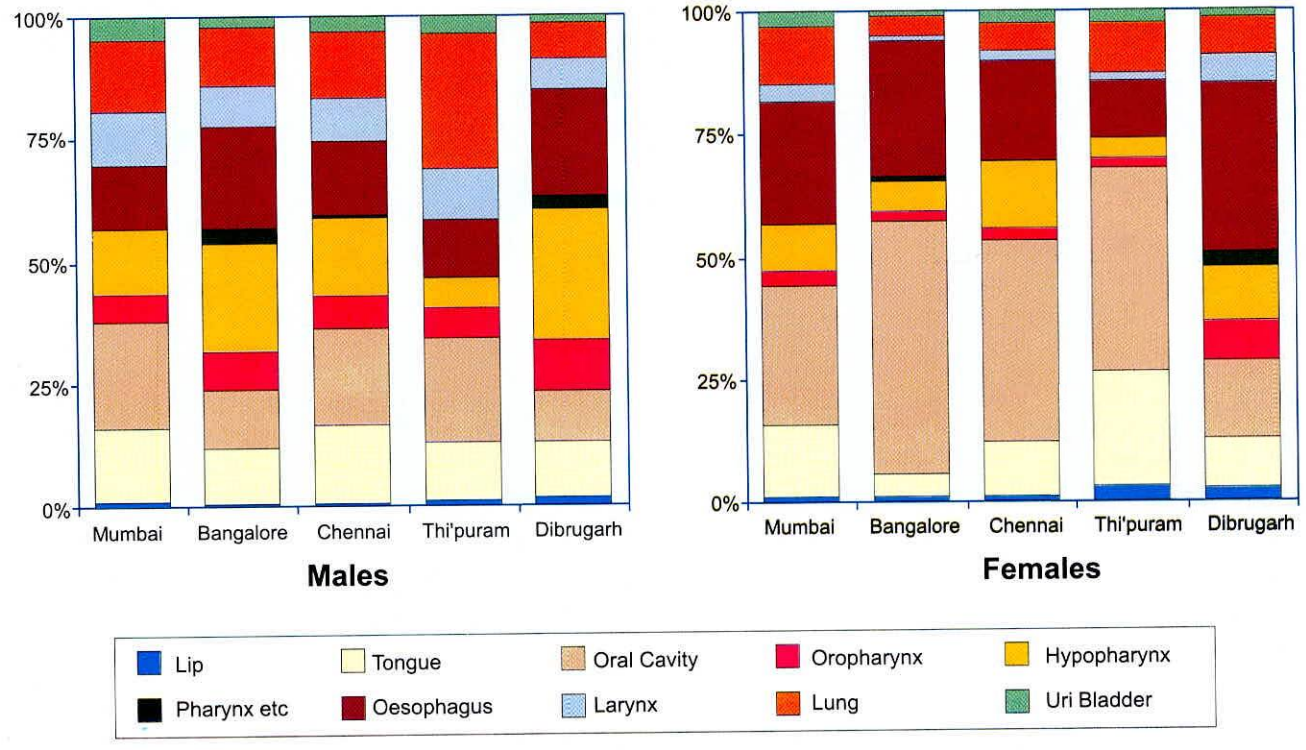


Table 3.2 : Number(#) & Proportion(%) of specific sites of cancer related to use of tobacco relative to all sites of cancer

Males

Sites of Cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	187	0.4	42	0.3	45	0.3	87	0.5	22	0.8
Tongue	3311	7.7	874	5.5	1020	7.6	1120	5.9	190	7.2
Oral Cavity	4783	11.1	911	5.7	1303	9.7	1946	10.3	174	6.6
Oropharynx	1334	3.1	622	3.9	430	3.2	564	3.0	180	6.8
Hypopharynx	2891	6.7	1729	10.9	1041	7.8	578	3.0	442	16.7
Pharynx etc	3	0.0	226	1.4	45	0.3	36	0.2	48	1.8
Oesophagus	2870	6.7	1592	10.0	963	7.2	1094	5.8	360	13.6
Larynx	2420	5.6	653	4.1	581	4.3	977	5.1	101	3.8
Lung	3158	7.3	910	5.7	897	6.7	2505	13.2	121	4.6
Uri Bladder	1082	2.5	170	1.1	193	1.4	349	1.8	30	1.1
TRC	22039	51.2	7729	48.5	6518	48.6	9256	48.8	1668	63.1
All sites	**43006**	**100.0**	**15926**	**100.0**	**13413**	**100.0**	**18978**	**100.0**	**2645**	**100.0**

Females

Sites of Cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	64	0.2	50	0.3	27	0.2	78	0.5	12	0.8
Tongue	892	2.6	194	1.0	274	1.8	592	3.6	51	3.4
Oral Cavity	1712	5.1	2330	12.6	1036	6.6	1064	6.4	80	5.3
Oropharynx	187	0.6	107	0.6	69	0.4	46	0.3	41	2.7
Hypopharynx	597	1.8	276	1.5	330	2.1	110	0.7	56	3.7
Pharynx etc	0	0.0	73	0.4	7	0.0	5	0.0	16	1.1
Oesophagus	1483	4.4	1190	6.4	510	3.3	293	1.8	175	11.7
Larynx	243	0.7	60	0.3	52	0.3	40	0.2	28	1.9
Lung	695	2.1	173	0.9	143	0.9	261	1.6	38	2.5
Uri Bladder	183	0.5	50	0.3	59	0.4	61	0.4	8	0.5
TRC	6056	18.0	4503	24.3	2507	16.1	2550	15.3	505	33.7
All sites	**33722**	**100.0**	**18552**	**100.0**	**15581**	**100.0**	**16648**	**100.0**	**1498**	**100.0**

Table 3.3 : Number(#) & Relative Proportion(%) of specific sites of cancer related to use of tobacco relative to all Tobacco Related Cancers (TRC)

Males

Sites of Cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	187	0.8	42	0.5	45	0.7	87	0.9	22	1.3
Tongue	3311	15.0	874	11.3	1020	15.6	1120	12.1	190	11.4
Oral Cavity	4783	21.7	911	11.8	1303	20.0	1946	21.0	174	10.4
Oropharynx	1334	6.1	622	8.0	430	6.6	564	6.1	180	10.8
Hypopharynx	2891	13.1	1729	22.4	1041	16.0	578	6.2	442	26.5
Pharynx etc	3	0.0	226	2.9	45	0.7	36	0.4	48	2.9
Oesophagus	2870	13.0	1592	20.6	963	14.8	1094	11.8	360	21.6
Larynx	2420	11.0	653	8.4	581	8.9	977	10.6	101	6.1
Lung	3158	14.3	910	11.8	897	13.8	2505	27.1	121	7.3
Uri Bladder	1082	4.9	170	2.2	193	3.0	349	3.8	30	1.8
TRC	**22039**	**100.0**	**7729**	**100.0**	**6518**	**100.0**	**9256**	**100.0**	**1668**	**100.0**

Females

Sites of Cancer	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Lip	64	1.1	50	1.1	27	1.1	78	3.1	12	2.4
Tongue	892	14.7	194	4.3	274	10.9	592	23.2	51	10.1
Oral Cavity	1712	28.3	2330	51.7	1036	41.3	1064	41.7	80	15.8
Oropharynx	187	3.1	107	2.4	69	2.8	46	1.8	41	8.1
Hypopharynx	597	9.9	276	6.1	330	13.2	110	4.3	56	11.1
Pharynx etc	0	0.0	73	1.6	7	0.3	5	0.2	16	3.2
Oesophagus	1483	24.5	1190	26.4	510	20.3	293	11.5	175	34.7
Larynx	243	4.0	60	1.3	52	2.1	40	1.6	28	5.5
Lung	695	11.5	173	3.8	143	5.7	261	10.2	38	7.5
Uri Bladder	183	3.0	50	1.1	59	2.4	61	2.4	8	1.6
TRC	**6056**	**100.0**	**4503**	**100.0**	**2507**	**100.0**	**2550**	**100.0**	**505**	**100.0**

Table 3.4: Number(#) and Relative Proportion(%) of Tobacco Related Cancers by five-year age groups

Males

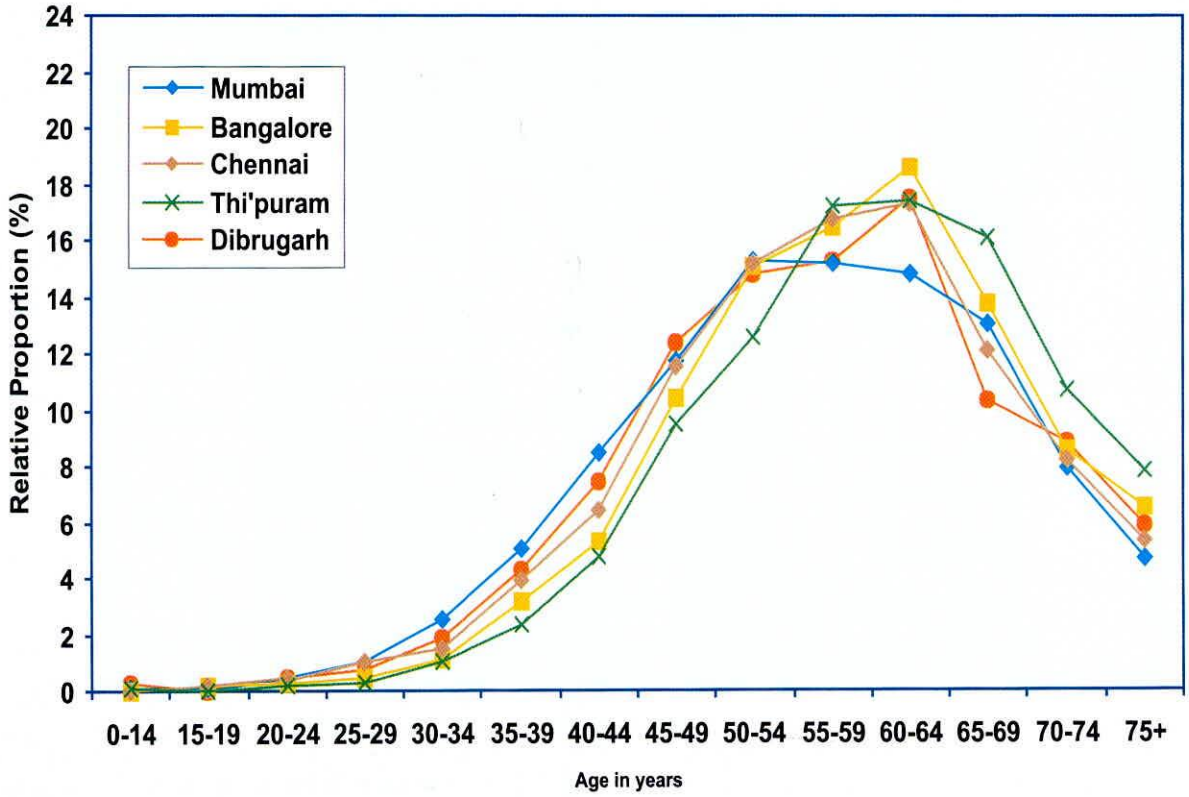
Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
00-14	11	0.0	3	0.0	3	0.0	5	0.1	4	0.2
15-19	12	0.1	13	0.2	14	0.2	4	0.0	0	0.0
20-24	78	0.4	21	0.3	29	0.4	14	0.2	7	0.4
25-29	227	1.0	39	0.5	69	1.1	29	0.3	13	0.8
30-34	551	2.5	84	1.1	100	1.5	93	1.0	31	1.9
35-39	1100	5.0	241	3.1	257	3.9	216	2.3	72	4.3
40-44	1859	8.4	412	5.3	417	6.4	439	4.7	124	7.4
45-49	2573	11.7	806	10.4	750	11.5	878	9.5	207	12.4
50-54	3358	15.2	1168	15.1	989	15.2	1164	12.6	247	14.8
55-59	3342	15.2	1270	16.4	1090	16.7	1596	17.2	255	15.3
60-64	3264	14.8	1439	18.6	1130	17.3	1611	17.4	291	17.4
65-69	2875	13.0	1065	13.8	789	12.1	1492	16.1	172	10.3
70-74	1736	7.9	665	8.6	533	8.2	993	10.7	148	8.9
75+	1030	4.7	503	6.5	348	5.3	722	7.8	97	5.8
ANS	23	0.1	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**22039**	**100.0**	**7729**	**100.0**	**6518**	**100.0**	**9256**	**100.0**	**1668**	**100.0**

Females

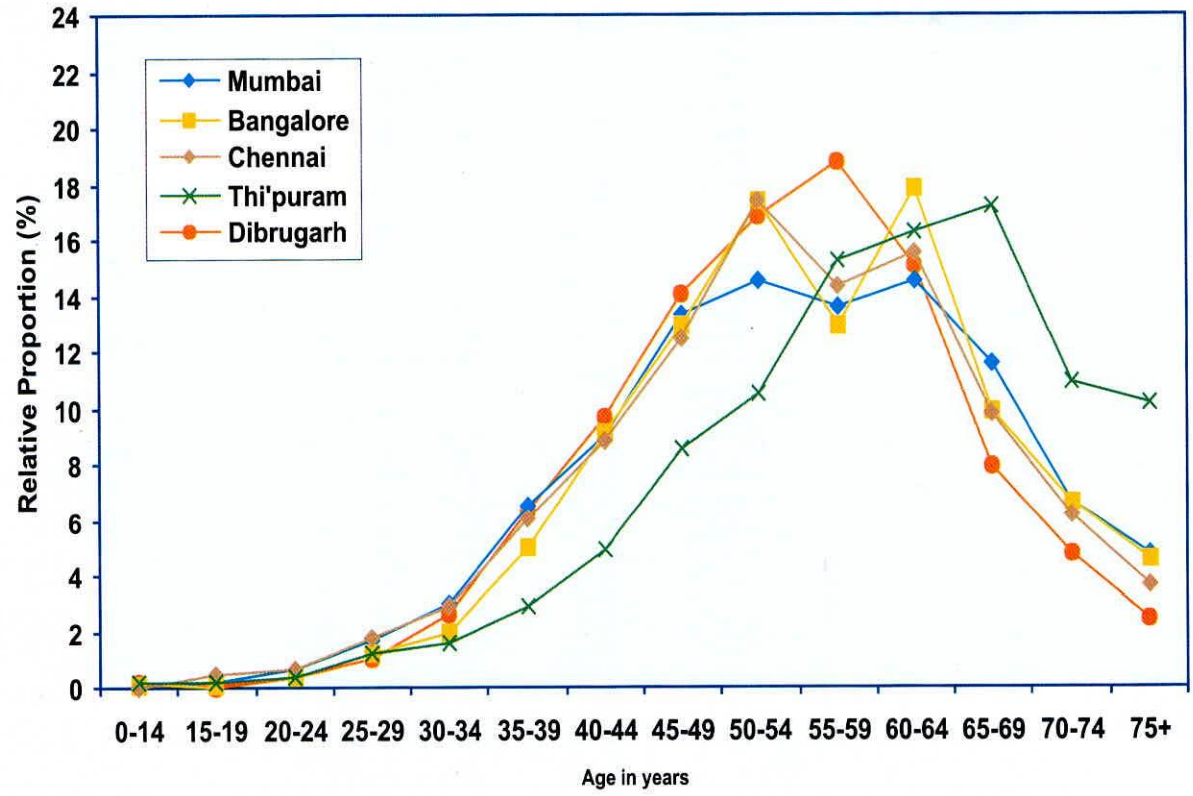
Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
00-14	3	0.0	5	0.1	1	0.0	4	0.2	1	0.2
15-19	11	0.2	4	0.1	12	0.5	4	0.2	0	0.0
20-24	41	0.7	15	0.3	17	0.7	9	0.4	2	0.4
25-29	100	1.7	54	1.2	44	1.8	31	1.2	5	1.0
30-34	183	3.0	87	1.9	72	2.9	40	1.6	13	2.6
35-39	397	6.6	228	5.1	152	6.1	73	2.9	32	6.3
40-44	546	9.0	410	9.1	222	8.9	125	4.9	49	9.7
45-49	804	13.3	582	12.9	312	12.4	219	8.6	71	14.1
50-54	879	14.5	783	17.4	436	17.4	267	10.5	85	16.8
55-59	825	13.6	583	12.9	360	14.4	388	15.2	95	18.8
60-64	879	14.5	805	17.9	390	15.6	415	16.3	76	15.0
65-69	696	11.5	444	9.9	244	9.7	438	17.2	40	7.9
70-74	400	6.6	297	6.6	154	6.1	278	10.9	24	4.8
75+	288	4.8	206	4.6	91	3.6	259	10.2	12	2.4
ANS	4	0.1	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**6056**	**100.0**	**4503**	**100.0**	**2507**	**100.0**	**2550**	**100.0**	**505**	**100.0**

Fig. 3.3 Relative Proportion(%) of Tobacco Related Cancers - By Five Year Age Group

Males



Females



Chapter 4

BASIS OF DIAGNOSIS

An index of reliability of the diagnosis in a cancer patient is the method by which it is ascertained. In general, a microscopic diagnosis of a smear or tissue establishes a diagnosis of cancer.

The basis of diagnosis of cancers registered at the various centres is shown in Table 4.1 and diagrammatically represented in Figure 4.1. All registries show only slight differences in proportion of microscopic confirmation of diagnosis in males and females.

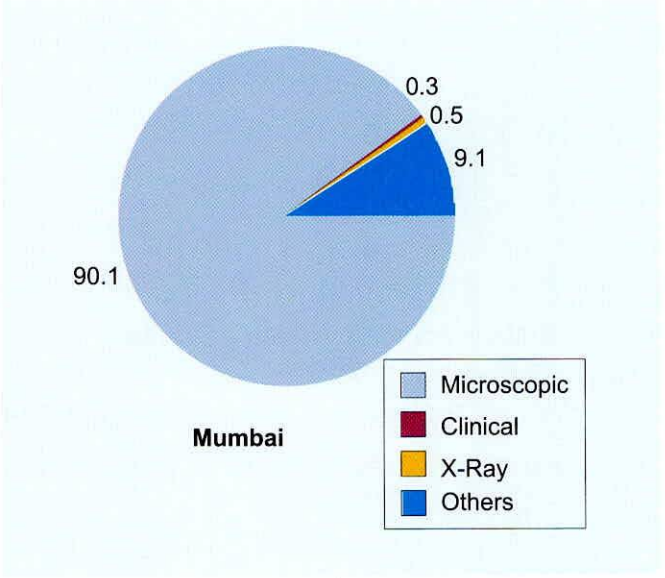
Table 4.1 : Number(#) & Relative Proportion(%) of cancers based on different methods of diagnosis

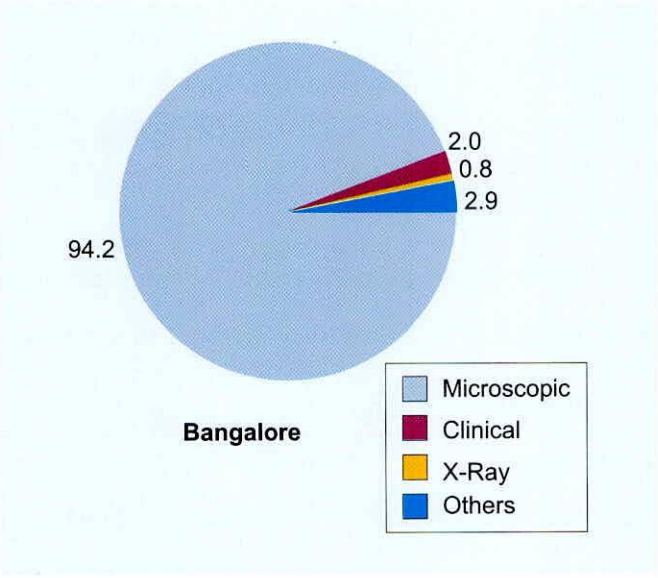
Registry	Microscopic		Clinical		X-ray		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Males										
Mumbai	38756	90.1	116	0.3	228	0.5	3906	9.1	43006	100.0
Bangalore	15008	94.2	325	2.0	127	0.8	466	2.9	15926	100.0
Chennai	10270	76.6	2224	16.6	217	1.6	702	5.2	13413	100.0
Thi'puram	16973	89.4	502	2.6	525	2.8	978	5.2	18978	100.0
Dibrugarh	2484	93.9	4	0.2	119	4.5	38	1.4	2645	100.0
Females										
Mumbai	30208	89.6	76	0.2	90	0.3	3348	9.9	33722	100.0
Bangalore	17757	95.7	353	1.9	73	0.4	369	2.0	18552	100.0
Chennai	12995	83.4	2160	13.9	54	0.3	372	2.4	15581	100.0
Thi'puram	15675	94.2	486	2.9	102	0.6	385	2.3	16648	100.0
Dibrugarh	1369	91.4	6	0.4	80	5.3	43	2.9	1498	100.0

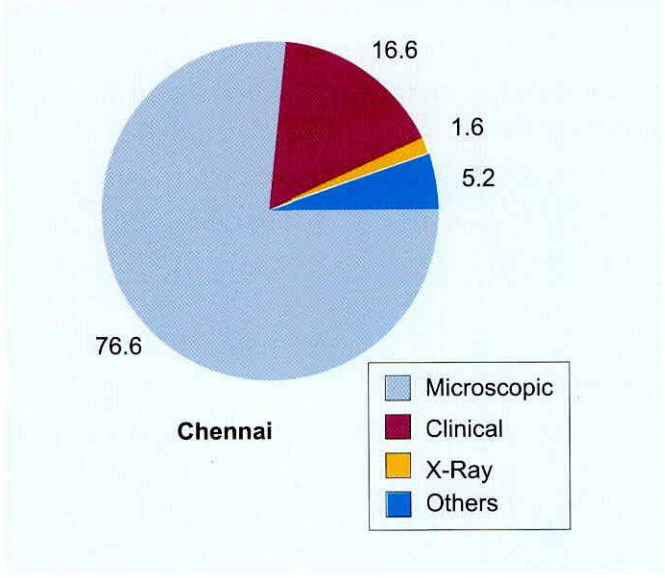
The degree of microscopic confirmation varies from 76.6 percent in males in Chennai to 95.7 percent among females in Bangalore.

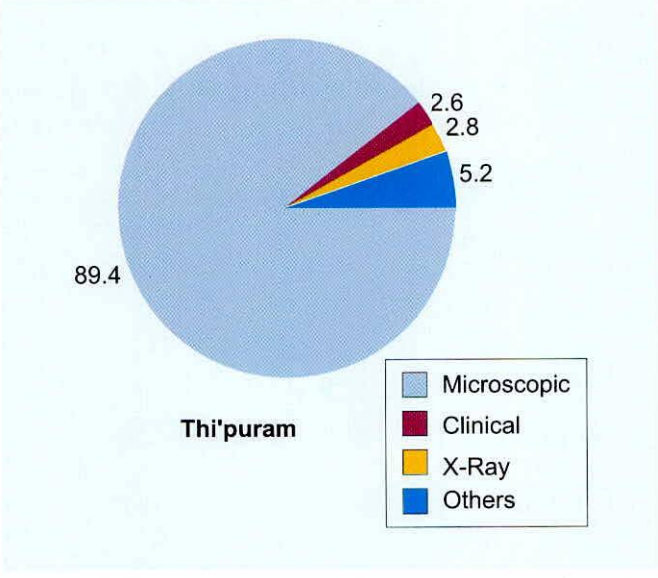
Fig. 4.1(a): Proportion (%) of Patients according to Method of Diagnosis

Males









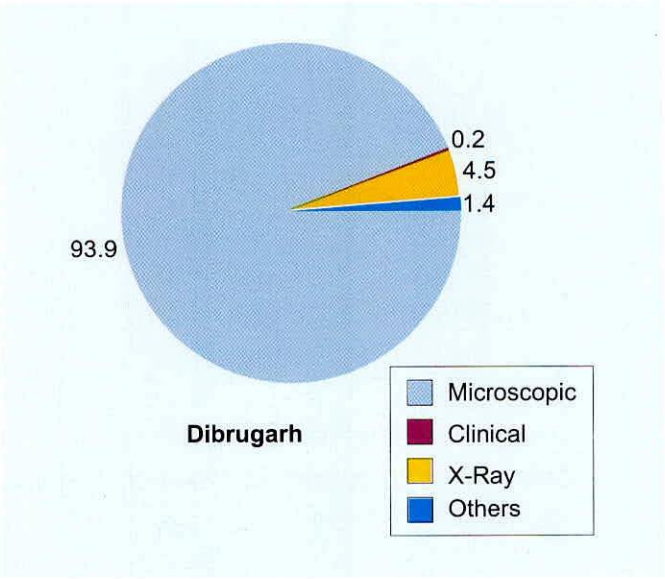
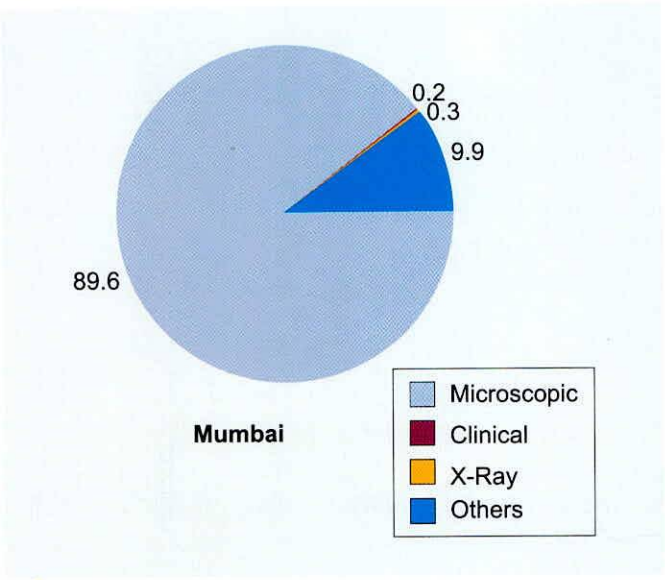
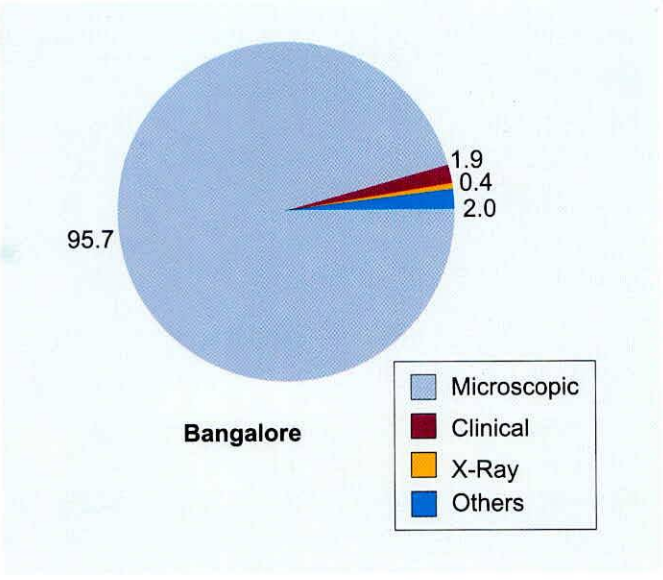
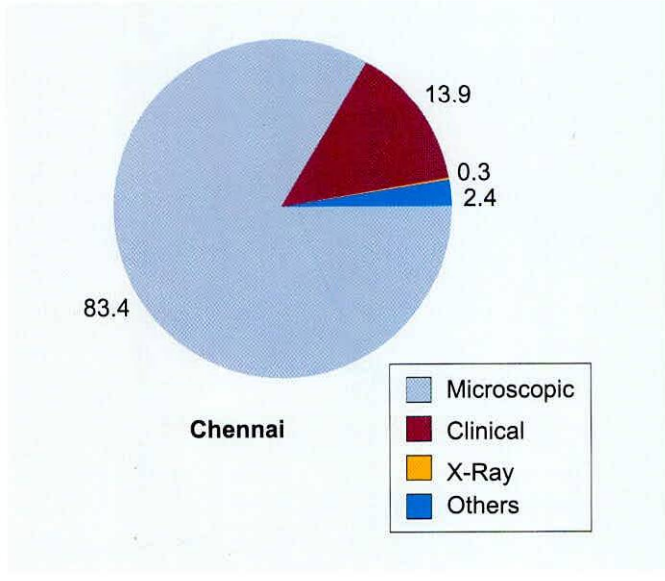


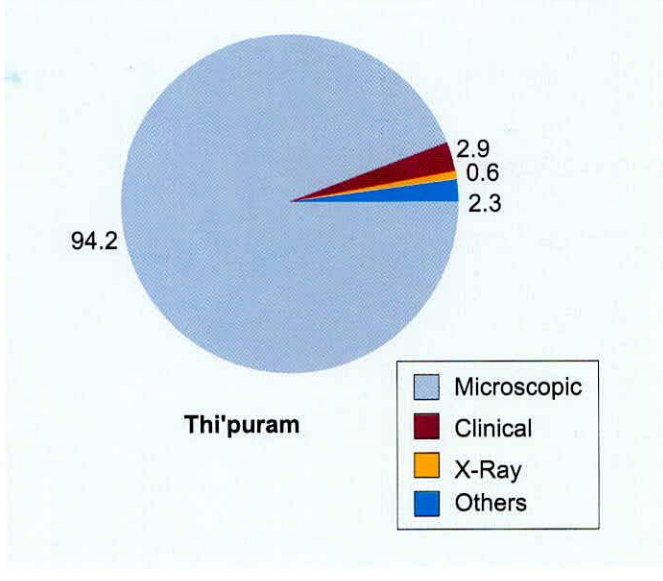
Fig. 4.1(b): Proportion (%) of Patients according to Method of Diagnosis

Females









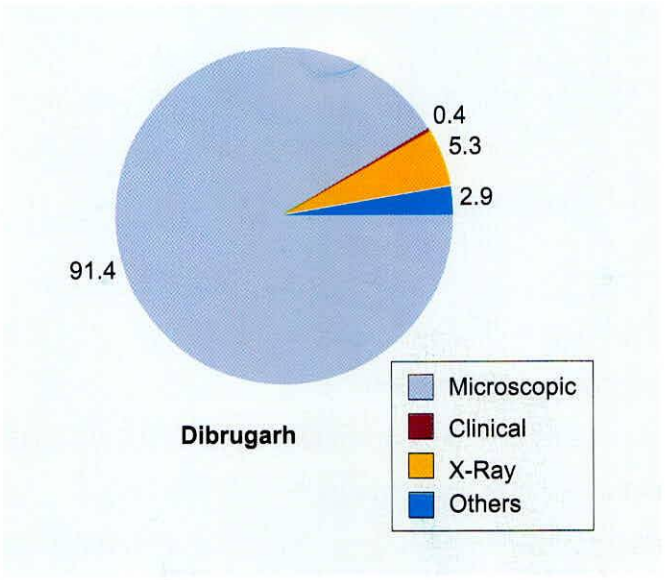


Table 4.2: Number (#) & Relative Proportion (%) of cancers based on different types of Microscopic Diagnosis

Males

Type of Microscopic Diagnosis	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Primary Histology	28560	73.7	9896	65.9	8347	81.3	12531	73.8	1850	74.5
Secondary Histology	1695	4.4	333	2.2	706	6.9	823	4.8	363	14.6
Cytology	5109	13.2	3548	23.6	486	4.7	2178	12.8	201	8.1
Peripheral Blood	27	0.1	69	0.5	0	0.0	15	0.1	18	0.7
Bone Marrow	3365	8.7	1162	7.7	731	7.1	1425	8.4	52	2.1
All microscopic	**38756**	**100.0**	**15008**	**100.0**	**10270**	**100.0**	**16972**	**100.0**	**2484**	**100.0**

Females

Type of Microscopic Diagnosis	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Primary Histology	25015	82.8	15011	84.5	11632	89.5	13286	84.8	1128	82.4
Secondary Histology	802	2.7	197	1.1	303	2.3	345	2.2	98	7.2
Cytology	2990	9.9	1893	10.7	612	4.7	1145	7.3	104	7.6
Peripheral Blood	10	0.0	52	0.3	0	0.0	14	0.1	7	0.5
Bone Marrow	1391	4.6	604	3.4	448	3.4	885	5.6	32	2.3
All microscopic	30208	100.0	17757	100.0	12995	100.0	15675	100.0	1369	100.0

Table 4.2 and Figure 4.2 give further details of the number and proportion of different types of microscopic diagnosis. In Bangalore, Mumbai and Thiruvananthapuram, the proportion of diagnoses based on cytology is relatively more especially in males. Dibrugarh has a high proportion of cases based on secondary histology.

Table 4.3 gives the number and relative proportion of microscopic diagnosis across the calendar years from 1994 to 1998. Chennai has shown an increase in this proportion over the years. Other centres, except Mumbai have also shown a slight increase in this proportion between the time periods 1984-93 and 1994-98 (Table 4.4). Thiruvananthapuram and Dibrugarh have shown an increase in the relative proportion of cytological diagnosis during the two time periods 1984-93 and 1994-98 (Fig 4.5).

Fig. 4.2(a): Proportion(%) of Microscopically Diagnosed patients according to specific Microscopic Diagnosis

Males

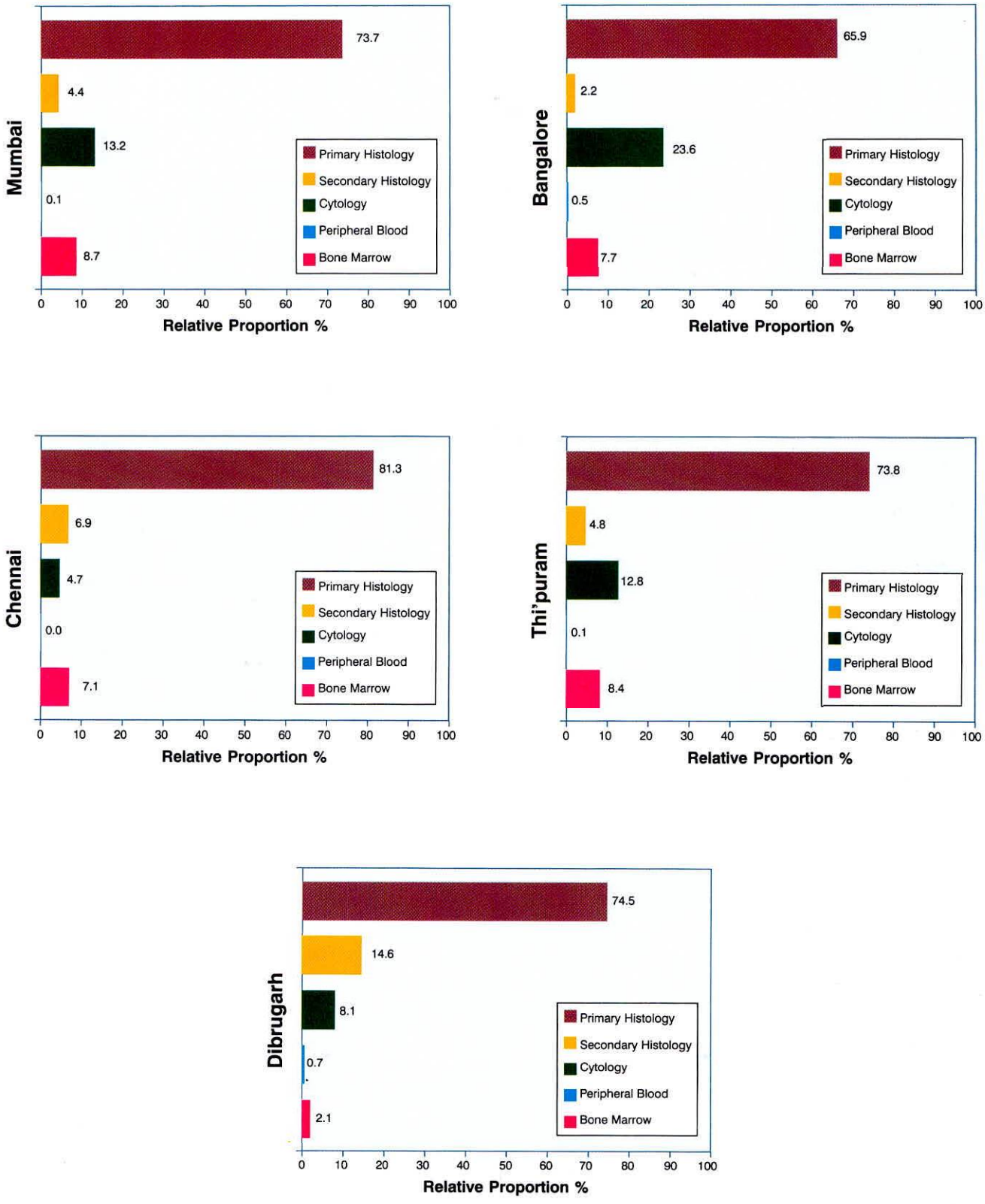
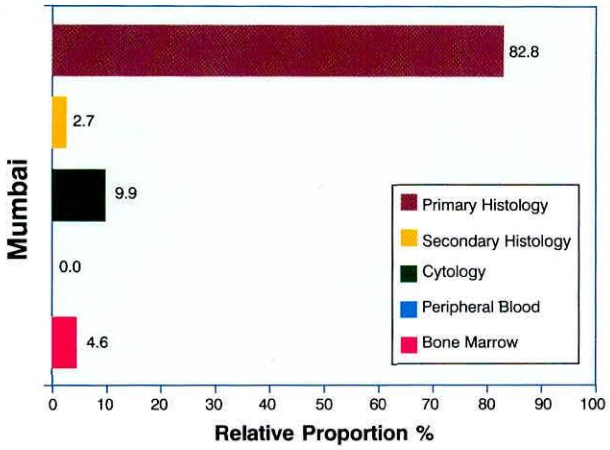
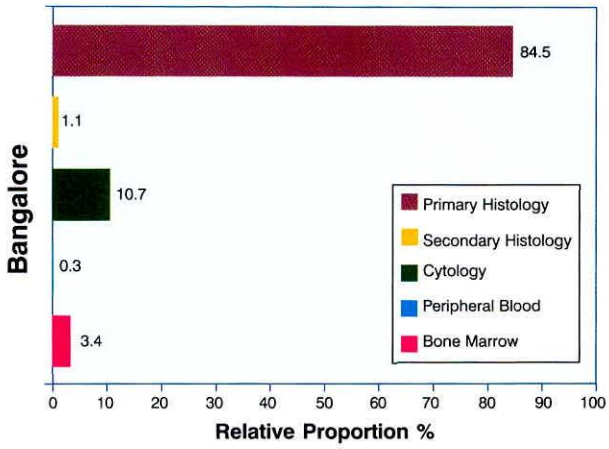
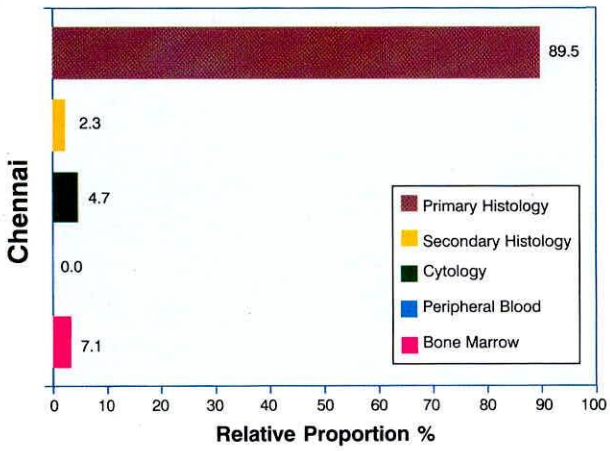


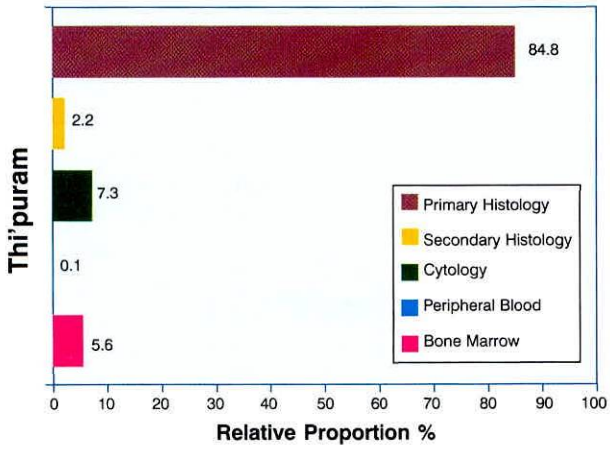
Fig. 4.2(b): Proportion(%) of Microscopically Diagnosed patients according to specific Microscopic Diagnosis

Females









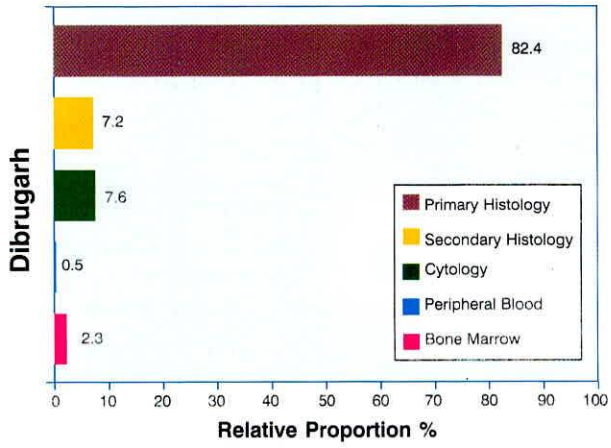


Table 4.3 : Number(#) & Relative Proportion(%) of Microscopic Diagnosis across different years of diagnosis

Year of Diagnosis	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
1994	7914	90	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	2838	95.1	2027	78.4	3540	91.6	513	96.2
1994-98	**38756**	**90.1**	**15008**	**94.2**	**10270**	**76.6**	**16973**	**89.4**	**2484**	**93.9**
FEMALES										
1994	6098	89.2	3485	94.8	2521	81.4	2921	93	397	90.2
1995	6113	88.8	3780	96	2592	83	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
1994-98	**30208**	**89.6**	**17757**	**95.7**	**12995**	**83.4**	**15675**	**94.2**	**1369**	**91.4**

Table 4.4: Proportion(%) of Microscopic Diagnosis during the two periods 1984-93 and 1994-98

Registry	Males		Females	
	1984-93	1994-98	1984-93	1994-98
Mumbai	91.3	90.1	91.5	89.6
Bangalore	91.1	94.2	94.8	95.7
Chennai	69.5	76.6	71.5	83.4
Thi'puram	86.0	89.4	90.3	94.2
Dibrugarh	88.3	93.9	88.3	91.4

Table 4.5: Proportion(%) of Cytological Diagnosis during the two periods 1984-93 and 1994-98

Registry	Males		Females	
	1984-93	1994-98	1984-93	1994-98
Mumbai	13.3	13.2	8.2	9.9
Bangalore	23.2	23.6	8.5	10.7
Chennai	4.0	4.7	4.2	4.7
Thi'puram	9.6	12.8	5.6	7.3
Dibrugarh	2.6	8.1	3.6	7.6

Chapter 5

BROAD TREATMENT GROUPS

Patients who receive all of their Cancer Directed Treatment in one institution are a different set of patients comparative to those who receive treatment in more than one institution or those who have earlier received treatment elsewhere. This chapter essentially categorises these different sets of patients. The rationale for such categorisation is given in detail in the earlier report.

Table 5.1 and the corresponding Figure 5.1 give the number and relative proportion according to broad groups of treatment by sex in each registry. In looking into this aspect the relative proportions seen at Dibrugarh are not comparable, as that registry is located at a medical college, whereas, the other registries are at regional cancer centres. These (regional cancer centre registries) show that about 13 to 23% (first two groups combined) of male cancer patients receive prior treatment elsewhere, before registering at the reporting institution. In females this is slightly higher. The proportion of patients who receive treatment "Only at the Reporting Institution" varies from 31.1% in males at Chennai to 59.4% among males in Thiruvananthapuram.

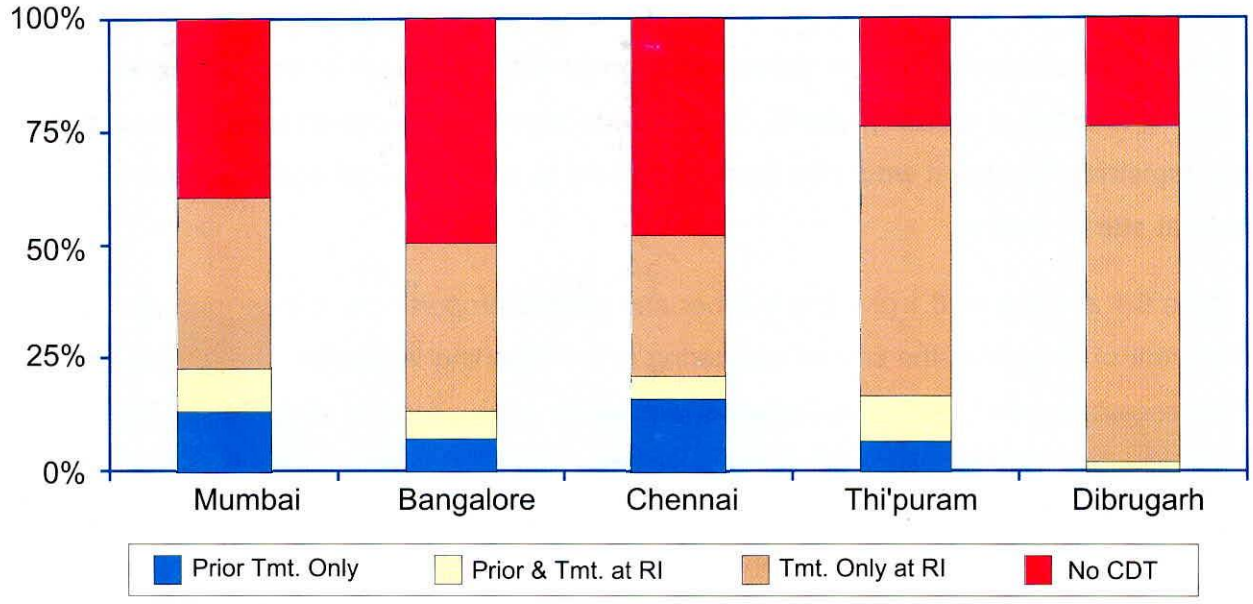
Table 5.1 : Number(#) & Relative Proportion(%) of cancer patients according to Broad Groups of Treatment (Tmt) at Reporting Institution (RI) and/or elsewhere

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Prior Tmt. Only	5753	13.4	1131	7.1	2181	16.3	1222	6.4	13	0.5
Prior & Tmt. at RI	4077	9.5	965	6.1	682	5.1	1988	10.5	46	1.7
Tmt. Only at RI	16230	37.7	5967	37.5	4173	31.1	11275	59.4	1954	73.9
No CDT*	16945	39.4	7863	49.4	6377	47.5	4493	23.7	632	23.9
Total Patients	**43005**	**100.0**	**15926**	**100.0**	**13413**	**100.0**	**18978**	**100.0**	**2645**	**100.0**
FEMALES										
Prior Tmt. Only	5349	15.9	1390	7.5	2110	13.5	1713	10.3	13	0.9
Prior & Tmt. at RI	5431	16.1	1555	8.4	1255	8.1	4372	26.3	41	2.7
Tmt. Only at RI	12524	37.1	8418	45.4	6031	38.7	8254	49.6	1073	71.6
No CDT*	10418	30.9	7189	38.8	6185	39.7	2309	13.9	371	24.8
Total Patients	**33722**	**100.0**	**18552**	**100.0**	**15581**	**100.0**	**16648**	**100.0**	**1498**	**100.0**

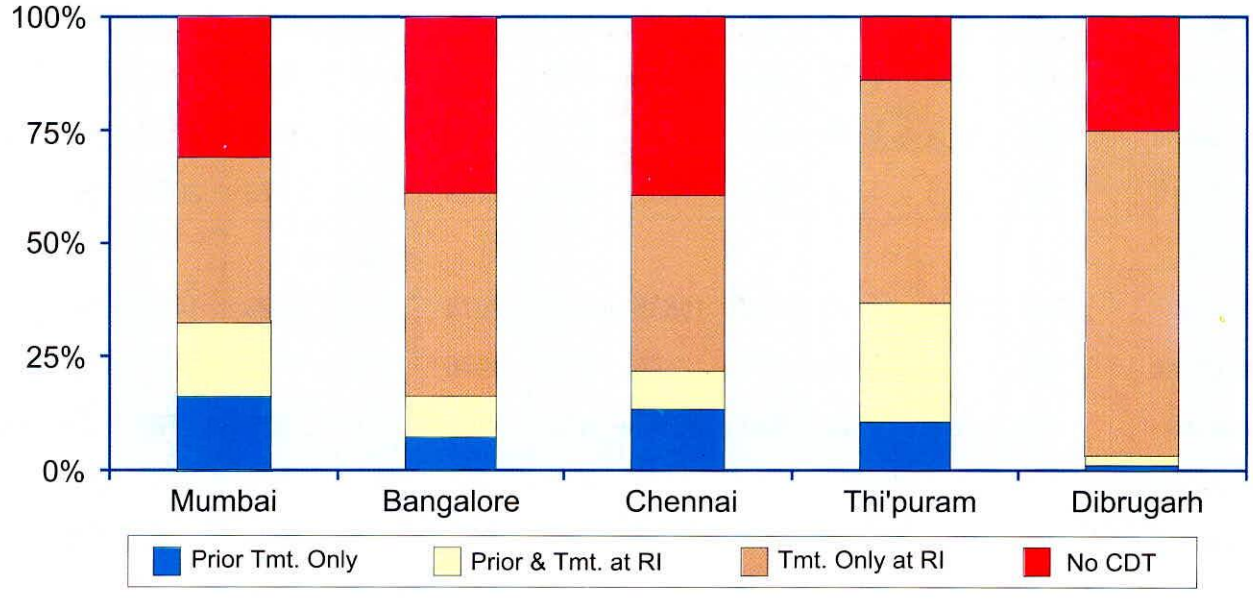
**CDT=Cancer Directed Treatment*

Fig. 5.1 : HCRs, Proportion(%) According To Broad Groups of Treatment(Tmt)

Males



Females



Chapter 7

TREATMENT ONLY AT REPORTING INSTITUTION

This chapter gives the details 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. They give an idea of the forms of treatment pursued in a given institution based on which the costs and outcome can be worked out.

This category is by far the most important of the broad treatment groups, since it best represents the contribution to the treatment aspect of patient care of a given registry/institution. A few summary tables of all sites of cancer combined are provided, however, this would be more meaningful when these same tables are examined separately for individual sites.

The first table (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. Table 7.1 is further diagrammatically represented in Figure 7.1.

TYPES OF TREATMENT

Table 7.2 and corresponding figures (figures 7.2 & 7.3) give the numbers and relative proportions of cancer patients 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 treatment (Combination Therapy) has been given. It also gives the overall number and relative proportion of any treatment with reference to the total patients treated.

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

Registry	Males			Females		
	Total Pts.	Total Proc.	Ratio	Total Pts.	Total Proc.	Ratio
Mumbai	16230	21587	1.33	12524	17938	1.43
Bangalore	5967	7533	1.26	8418	11097	1.32
Chennai	4173	5268	1.26	6031	9365	1.55
Thi'puram	11275	13817	1.23	8254	11202	1.36
Dibrugarh	1954	2117	1.08	1073	1267	1.18

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

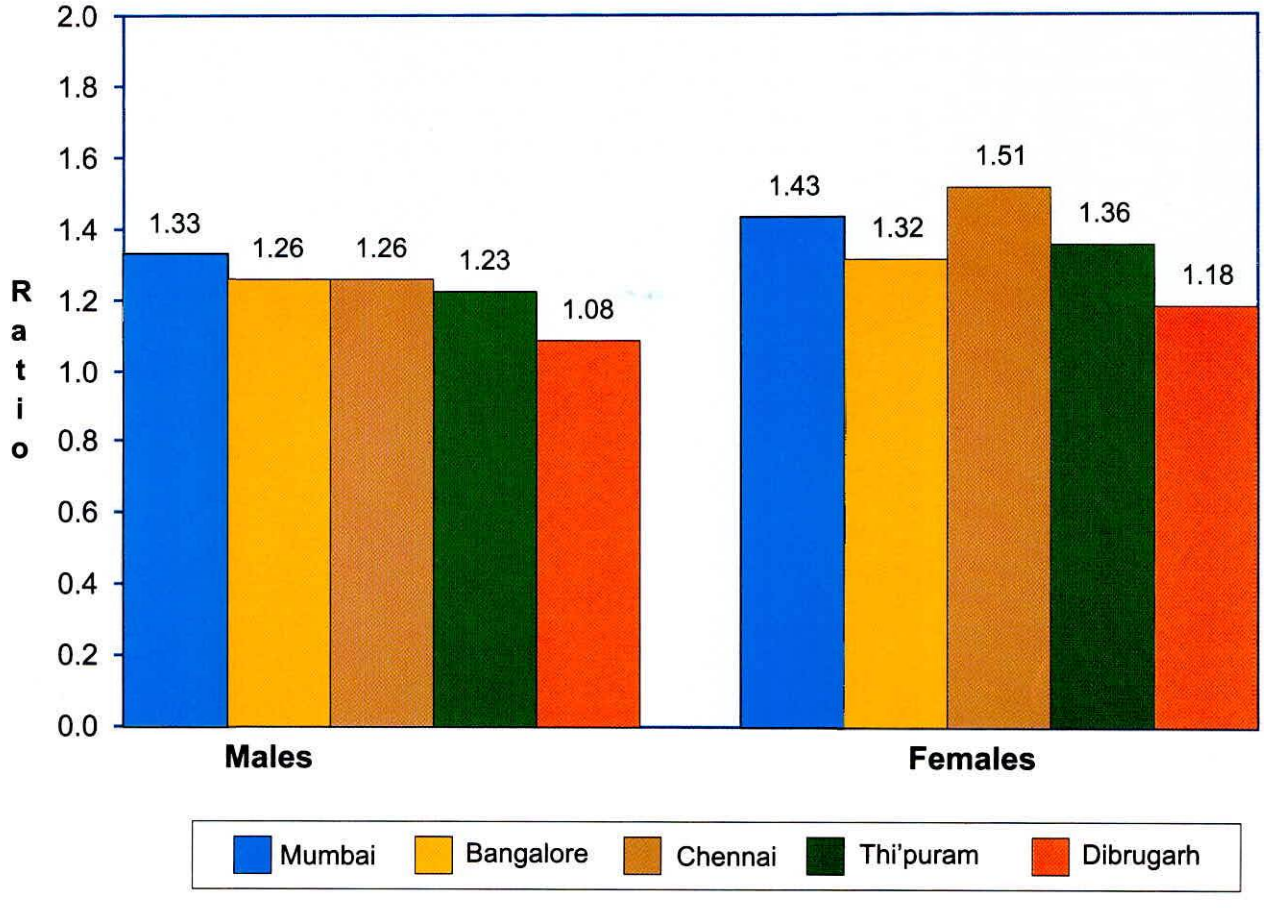


Fig. 7.2 : HCRs, Proportion of Different Types of Treatment (Patients Treated Only at Reporting Institution)

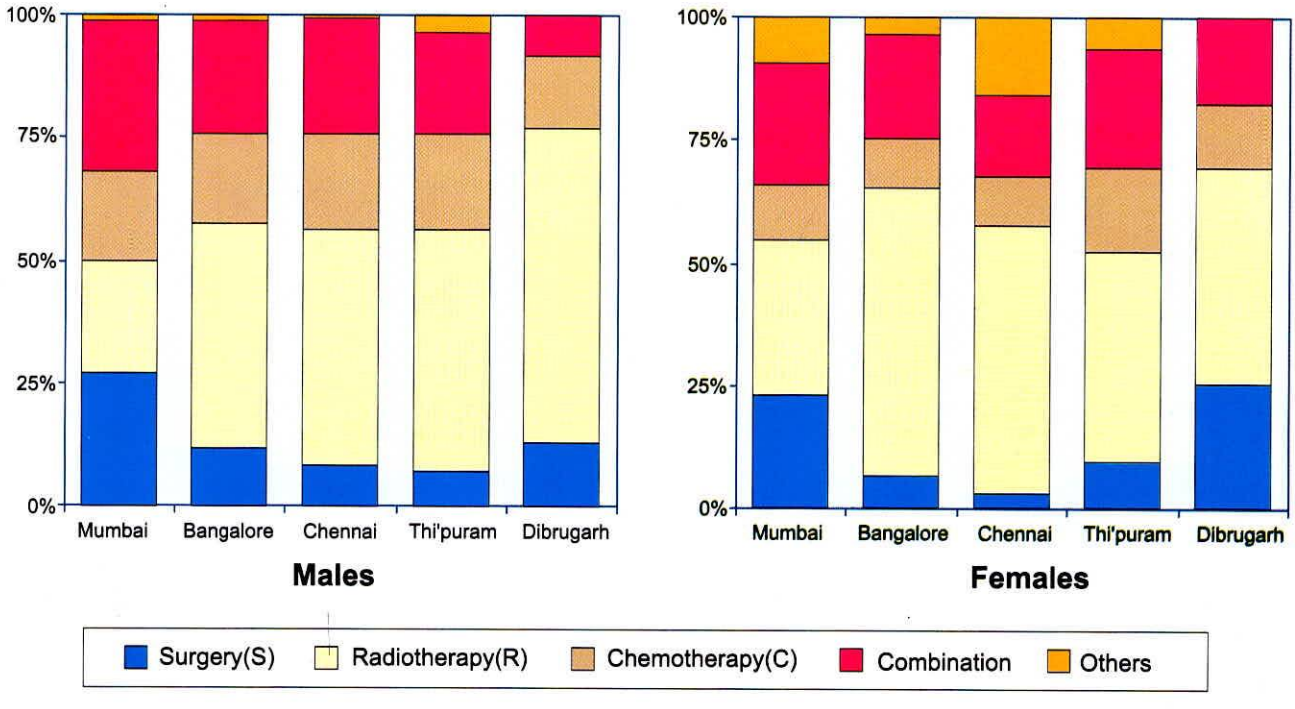


Table 7.2: Number (#) & Relative Proportion (%) of patients according to Type of Treatment given

Males

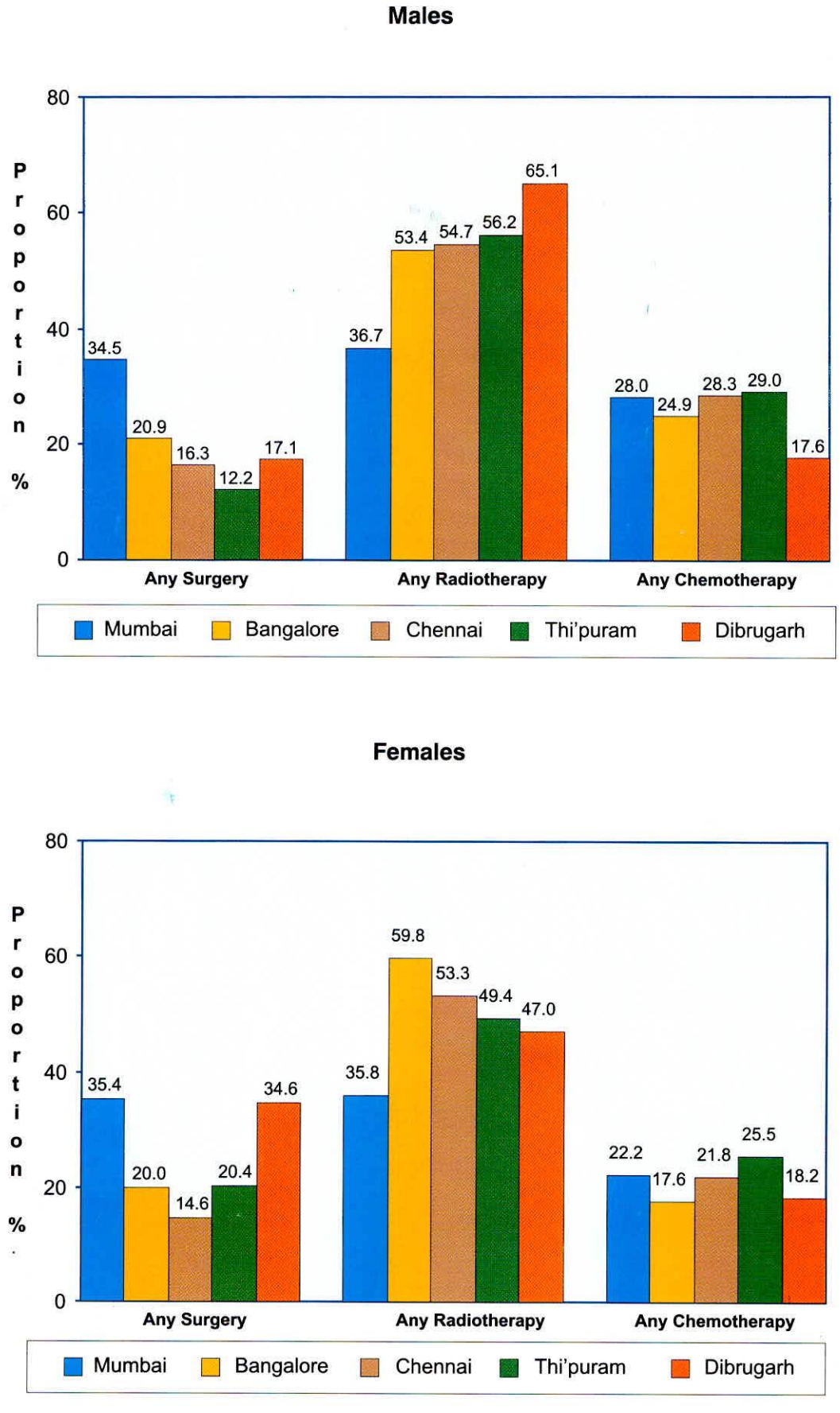
Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**16230**	**100.0**	**5967**	**100.0**	**4173**	**100.0**	**11275**	**100.0**	**1954**	**100.0**
Specific Treatments										
Surgery(S)	4409	27.2	699	11.7	344	8.2	808	7.2	247	12.6
Radiotherapy(R)	3692	22.7	2735	45.8	2012	48.2	5534	49.1	1252	64.1
Chemotherapy(C)	2992	18.4	1083	18.1	816	19.6	2194	19.5	292	14.9
S + R	1915	11.8	635	10.6	295	7.1	560	5.0	80	4.1
S + C	739	4.6	131	2.2	112	2.7	165	1.5	34	1.7
R + C	1942	12.0	534	8.9	466	11.2	1520	13.5	44	2.3
S + R + C	348	2.1	95	1.6	92	2.2	125	1.1	2	0.1
Others	193	1.2	55	0.9	36	0.9	369	3.3	3	0.2
Modality of therapy*										
Single	11093	68.3	4517	75.7	3172	76.0	8536	75.7	1791	91.7
Combination	4944	30.5	1395	23.4	965	23.1	2370	21.0	160	8.2
Type of Any Treatment*										
Any Surgery	7411	45.7	1560	26.1	843	20.2	1658	14.7	363	18.6
Any R	7897	48.7	3999	67.0	2865	68.7	7739	68.6	1378	70.5
Any C	6021	37.1	1843	30.9	1486	35.6	4004	35.5	372	19.0

Females

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**12524**	**100.0**	**8418**	**100.0**	**6031**	**100.0**	**8254**	**100.0**	**1073**	**100.0**
Specific Treatments										
Surgery(S)	2894	23.1	549	6.5	194	3.2	790	9.6	269	25.1
Radiotherapy(R)	3994	31.9	4962	58.9	3288	54.5	3527	42.7	478	44.5
Chemotherapy(C)	1381	11.0	845	10.0	594	9.8	1430	17.3	136	12.7
S + R	1042	8.3	818	9.7	377	6.3	656	7.9	94	8.8
S + C	1015	8.1	301	3.6	116	1.9	256	3.1	71	6.6
R + C	657	5.2	337	4.0	430	7.1	773	9.4	20	1.9
S + R + C	342	2.7	327	3.9	68	1.1	285	3.5	4	0.4
Others	1199	9.6	279	3.3	964	16.0	537	6.5	1	0.1
Modality of therapy*										
Single	8269	66.0	6356	75.5	4076	67.6	5747	69.6	883	82.3
Combination	3056	24.4	1783	21.2	991	16.4	1970	23.9	189	17.6
Type of Any Treatment*										
Any Surgery	5293	42.3	1995	23.7	755	12.5	1987	24.1	438	40.8
Any R	6035	48.2	6444	76.6	4163	69.0	5241	63.5	596	55.5
Any C	3395	27.1	1810	21.5	1208	20.0	2744	33.2	231	21.5

** Excludes specific treatment classified as 'Others'*

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



Radiotherapy alone or in combination with other modalities was the predominant form of treatment in either sex. Nearly 50% of patients in Mumbai and over two-thirds of patients in other centres received radiotherapy alone or in combination with other forms of cancer directed treatment. Except in males in Bangalore, there was a slight decline in the relative proportion of patients receiving radiotherapy singly or in combination in all centres. Forty two to Forty five percent of patients received surgery singly or in combination in Mumbai. In other centres this proportion was less than 25%. A little over one-third of male patients received chemotherapy alone or in combination in all centres. This was a little lower in females.

Except in males in Mumbai, the single and also predominant form of therapy received by patients at any centre is radiotherapy, which varies in relative proportion from 31.9% in females in Mumbai to 64.1 percent in males in Dibrugarh. The relative proportion of patients who received only surgery as a form of treatment was highest in males in Mumbai (27.2%). Chennai males had the highest relative proportion of patients receiving chemotherapy only (19.6%).

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

Registry	Any Surgery		Any Radiotherapy		Any Chemotherapy		Any Others		Total
	#	%	#	%	#	%	#	%	Proced.
MALES									
Mumbai	7442	34.5	7916	36.7	6036	28.0	193	0.9	21587
Bangalore	1576	20.9	4025	53.4	1877	24.9	55	0.7	7533
Chennai	861	16.3	2881	54.7	1490	28.3	36	0.7	5268
Thi'puram	1681	12.2	7759	56.2	4008	29.0	369	2.7	13817
Dibrugarh	363	17.1	1379	65.1	372	17.6	3	0.1	2117
FEMALES									
Mumbai	6346	35.4	6418	35.8	3975	22.2	1199	6.7	17938
Bangalore	2223	20.0	6637	59.8	1958	17.6	279	2.5	11097
Chennai	1370	14.6	4990	53.3	2041	21.8	964	10.3	9365
Thi'puram	2281	20.4	5530	49.4	2854	25.5	537	4.8	11202
Dibrugarh	439	34.6	596	47.0	231	18.2	1	0.1	1267

Chapter 8

ORAL CAVITY (ICD-9: 143-145)

The total number, relative proportion and rank of this site of cancer in males and females for the years 1994-98 is given in Table 8.1.

Table 8.1(a) : Number(#), Relative Proportion(%) and Rank(R) of cancers of the oral cavity

Registry	Males				Females			
	Total	#	%	R	Total	#	%	R
Mumbai	43006	4783	11.1	1	33722	1712	5.1	4
Bangalore	15926	911	5.7	3	18552	2330	12.6	2
Chennai	13413	1303	9.7	1	15581	1036	6.6	3
Thi'puram	18978	1946	10.3	2	16648	1064	6.4	5
Dibrugarh	2645	174	6.6	6	1498	80	5.3	5

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

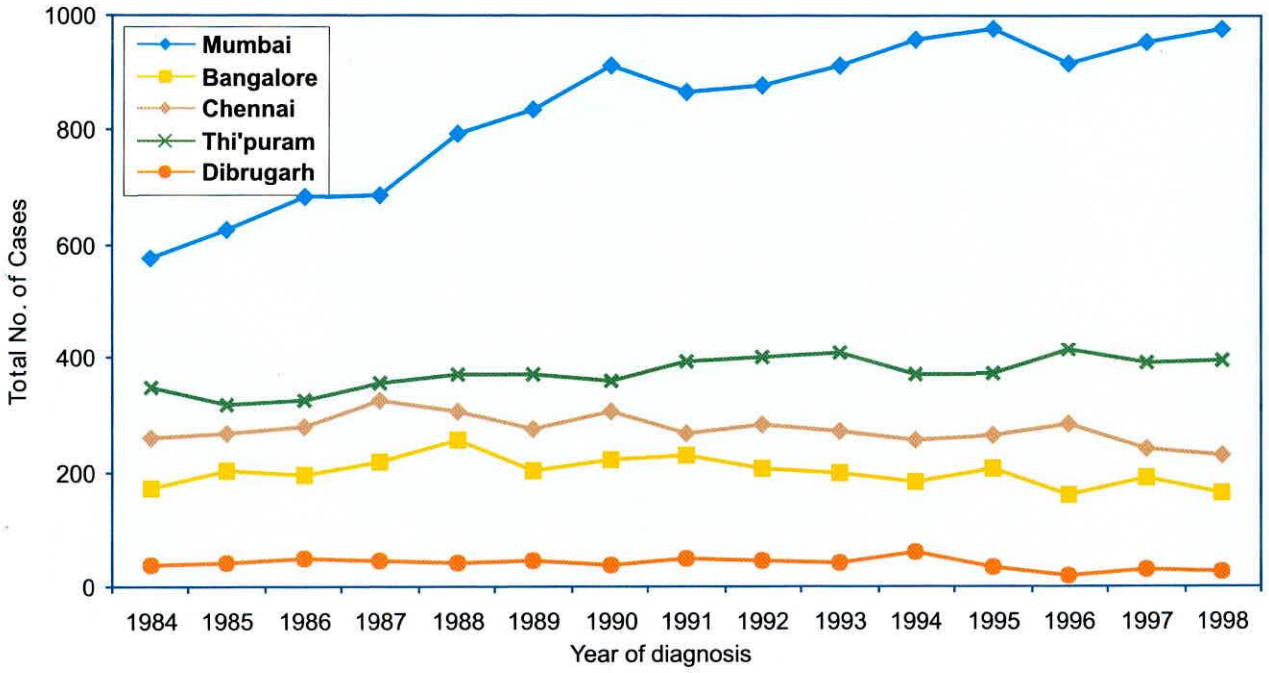
	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Gum	1128	23.6	207	22.7	283	21.7	336	17.3	32	18.4
Floor of Mouth	257	5.4	124	13.6	143	11.0	208	10.7	16	9.2
Buccal Mucosa	2527	52.8	296	32.5	580	44.5	1062	54.6	70	40.2
Other Mouth	867	18.1	279	30.6	286	21.9	312	16.0	53	30.5
Oral NOS*	4	0.1	5	0.5	11	0.8	28	1.4	3	1.7
Total Oral Cancers	**4783**	**100.0**	**911**	**100.0**	**1303**	**100.0**	**1946**	**100.0**	**174**	**100.0**
FEMALES										
Gum	489	28.6	643	27.6	264	25.5	258	24.2	20	25.0
Floor of Mouth	34	2.0	31	1.3	7	0.7	27	2.5	3	3.8
Buccal Mucosa	970	56.7	1345	57.7	641	61.9	658	61.8	37	46.3
Other Mouth	217	12.7	302	13.0	118	11.4	103	9.7	16	20.0
Oral NOS*	2	0.1	9	0.4	6	0.6	18	1.7	4	5.0
Total Oral Cancers	**1712**	**100.0**	**2330**	**100.0**	**1036**	**100.0**	**1064**	**100.0**	**80**	**100.0**

NOS = Not Otherwise Specified

Figure 8.1 provides a picture of the trends in actual numbers of cancers of the oral cavity registered in the five HBCRs. The registry at Mumbai has shown a rise in the numbers especially in males, while in others in both sexes the numbers have remained more or less constant.

Figure 8.1: Trends in Actual Numbers - Cancers of oral cavity

Males



Females

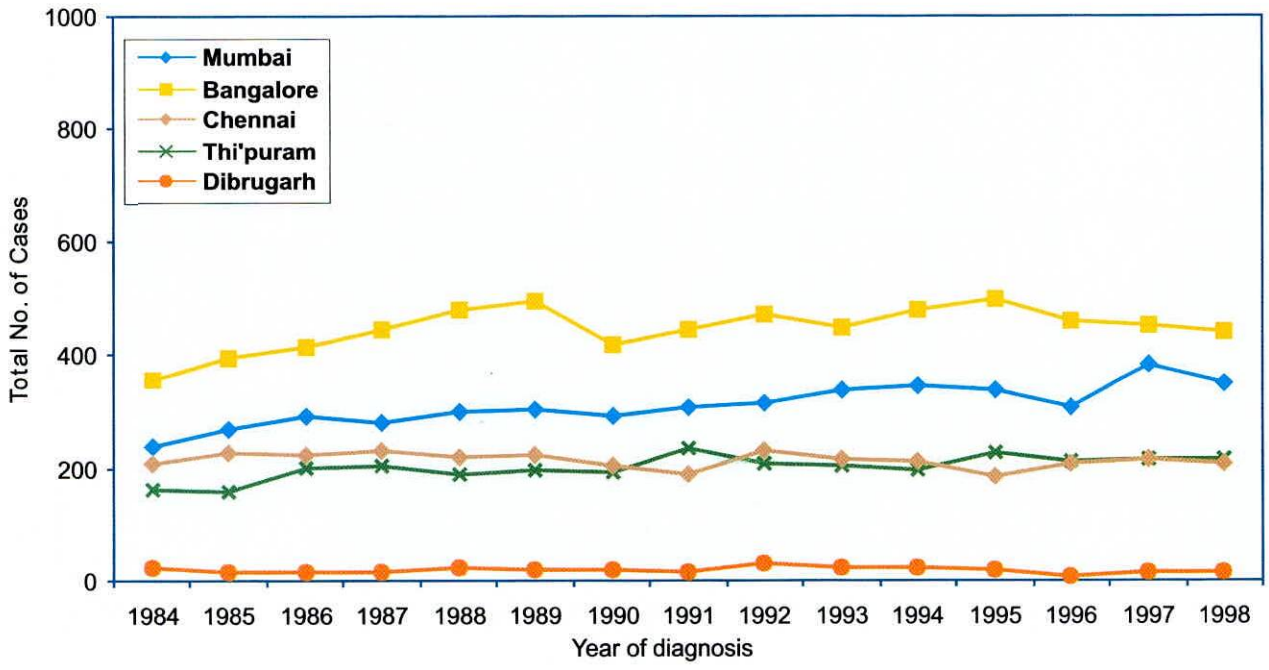
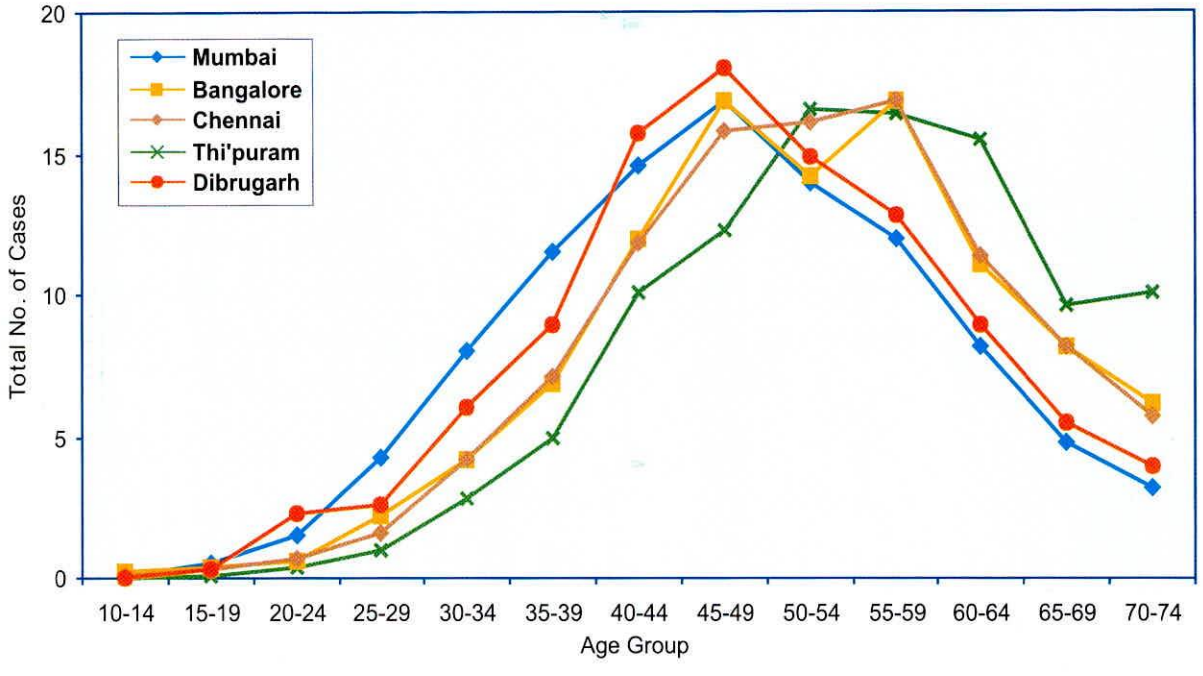


Table 8.2 and Figure 8.2 give the five-year age distribution of cancers of the oral cavity. Compared to other registries the registry at Thiruvananthapuram has shown a later age of rise in numbers followed by a peak that is at least 2 decades later.

Figure 8.2: Five year age group distribution - Cancers of oral cavity

Males



Females

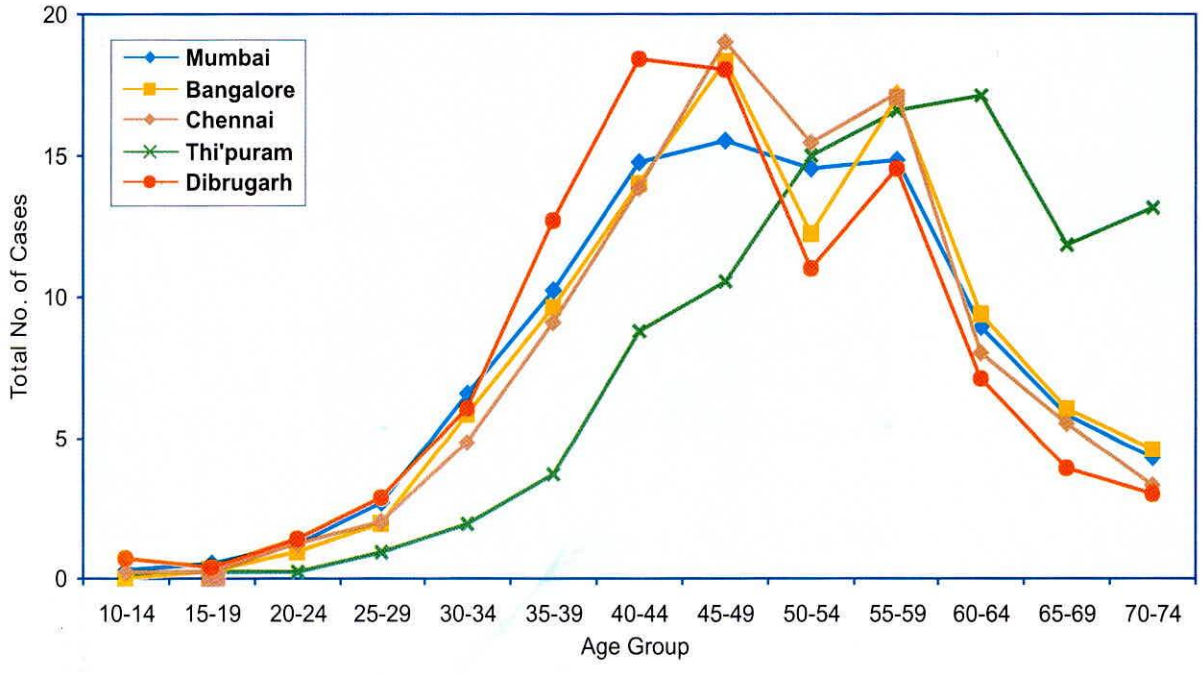


Table 8.2 Number(#) and Relative Proportion(%) of Cancers of oral cavity according to five year age group

Males

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
0- 4	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5- 9	1	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10-14	1	0.0	1	0.1	0	0.0	0	0.0	0	0.0
15-19	3	0.1	1	0.1	1	0.1	0	0.0	0	0.0
20-24	20	0.4	5	0.5	3	0.2	3	0.2	0	0.0
25-29	76	1.6	3	0.3	10	0.8	7	0.4	5	2.9
30-34	204	4.3	13	1.4	19	1.5	19	1.0	4	2.3
35-39	408	8.5	41	4.5	59	4.5	47	2.4	9	5.2
40-44	562	11.7	64	7.0	85	6.5	111	5.7	18	10.3
45-49	703	14.7	113	12.4	177	13.6	211	10.8	17	9.8
50-54	799	16.7	150	16.5	197	15.1	223	11.5	27	15.5
55-59	589	12.3	128	14.1	190	14.6	300	15.4	31	17.8
60-64	585	12.2	152	16.7	199	15.3	303	15.6	26	14.9
65-69	422	8.8	117	12.8	160	12.3	319	16.4	18	10.3
70-74	261	5.5	78	8.6	123	9.4	210	10.8	9	5.2
75+	146	3.1	45	4.9	80	6.1	193	9.9	10	5.7
ANS	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**4783**	**100.0**	**911**	**100.0**	**1303**	**100.0**	**1946**	**100.0**	**174**	**100.0**

Females

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
0- 4	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0
5- 9	0	0.0	1	0.0	0	0.0	0	0.0	0	0.0
10-14	0	0.0	0	0.0	0	0.0	0	0.0	1	1.3
15-19	5	0.3	0	0.0	2	0.2	2	0.2	0	0.0
20-24	13	0.8	2	0.1	4	0.4	2	0.2	1	1.3
25-29	20	1.2	23	1.0	10	1.0	3	0.3	0	0.0
30-34	48	2.8	32	1.4	14	1.4	9	0.8	1	1.3
35-39	99	5.8	123	5.3	49	4.7	23	2.2	5	6.3
40-44	150	8.8	217	9.3	89	8.6	24	2.3	10	12.5
45-49	230	13.4	325	13.9	132	12.7	83	7.8	10	12.5
50-54	270	15.8	409	17.6	187	18.1	103	9.7	14	17.5
55-59	243	14.2	283	12.1	155	15.0	154	14.5	13	16.3
60-64	266	15.5	429	18.4	182	17.6	189	17.8	14	17.5
65-69	176	10.3	222	9.5	100	9.7	197	18.5	5	6.3
70-74	112	6.5	156	6.7	73	7.0	137	12.9	3	3.8
75+	79	4.6	107	4.6	39	3.8	138	13.0	3	3.8
ANS	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**1712**	**100.0**	**2330**	**100.0**	**1036**	**100.0**	**1064**	**100.0**	**80**	**100.0**

Table 8.3 shows the number and relative proportion based on method of diagnosis for 1994-98. Table 8.4 gives the number and relative proportion according to clinical extent of disease.

Table 8.3: Number(#) and Relative Proportion(%) of Cancers of oral cavity based on different methods of diagnosis

Registry	Microscopic		Clinical		X-ray		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Males										
Mumbai	4518	94.5	21	0.4	1	0.0	243	5.1	4783	100.0
Bangalore	878	96.4	21	2.3	1	0.1	11	1.2	911	100.0
Chennai	747	57.3	556	42.7	0	0.0	0	0.0	1303	100.0
Thi'puram	1760	90.4	180	9.2	2	0.1	4	0.2	1946	100.0
Dibrugarh	173	99.4	1	0.6	0	0.0	0	0.0	174	100.0
Females										
Mumbai	1648	96.3	9	0.5	0	0.0	55	3.2	1712	100.0
Bangalore	2253	96.7	59	2.5	4	0.2	14	0.6	2330	100.0
Chennai	598	57.7	438	42.3	0	0.0	0	0.0	1036	100.0
Thi'puram	968	91.0	91	8.6	4	0.4	1	0.1	1064	100.0
Dibrugarh	80	100.0	0	0.0	0	0.0	0	0.0	80	100.0

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

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Males												
Mumbai	856	21.3	2944	73.4	*3800*	*94.7*	143	3.6	69	1.7	4012	100.0
Bangalore	79	9.2	726	84.2	805	93.4	56	6.5	1	0.1	862	100.0
Chennai	48	4.5	1002	94.6	*1050*	*99.2*	9	0.8	0	0.0	1059	100.0
Thi'puram	220	12.2	1541	85.7	*1761*	*97.9*	38	2.1	0	0.0	1799	100.0
Dibrugarh	291	7.2	137	81.1	*166*	*98.2*	2	1.2	1	0.6	169	100.0
Females												
Mumbai	2991	9.7	1149	75.7	*1448*	*95.5*	50	3.3	19	1.3	1517	100.0
Bangalore	134	5.9	1973	86.9	*2107*	*92.8*	158	7.0	5	0.2	2270	100.0
Chennai	39	4.3	869	94.9	*908*	*99.1*	8	0.9	0	0.0	916	100.0
Thi'puram	1161	1.7	853	86.2	*969*	*98.0*	20	2.0	0	0.0	989	100.0
Dibrugarh	141	8.2	61	79.2	*75*	*97.4*	2	2.6	0	0.0	77	100.0

Table 8.5 indicates the number and relative proportion of according to broad group of treatment.

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

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Prior Tmt. Only	485	10.1	32	3.5	221	17.0	64	3.3	3	1.7
Prior & Tmt. at RI	286	6.0	17	1.9	23	1.8	83	4.3	2	1.1
Tmt. Only at RI	2381	49.8	468	51.4	553	42.4	1456	74.8	128	73.6
'No' Treatment	1631	34.1	394	43.2	506	38.8	343	17.6	41	23.6
Total Patients	**4783**	**100.0**	**911**	**100.0**	**1303**	**100.0**	**1946**	**100.0**	**174**	**100.0**
FEMALES										
Prior Tmt. Only	111	6.5	41	1.8	108	10.4	34	3.2	1	1.3
Prior & Tmt. at RI	84	4.9	19	0.8	12	1.2	41	3.9	2	2.5
Tmt. Only at RI	889	51.9	1220	52.4	467	45.1	787	74.0	60	75.0
'No' Treatment	628	36.7	1050	45.1	449	43.3	202	19.0	17	21.3
Total Patients	**1712**	**100.0**	**2330**	**100.0**	**1036**	**100.0**	**1064**	**100.0**	**80**	**100.0**

While Table 8.6 gives the specific types of treatment received by patients, during 1994-98, the Figures 8.3 to 8.6 give the trends in actual numbers of patient who received any form of overall treatment and the main types of treatment (surgery, radiotherapy, chemotherapy) from 1984 to 1998.

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

Males

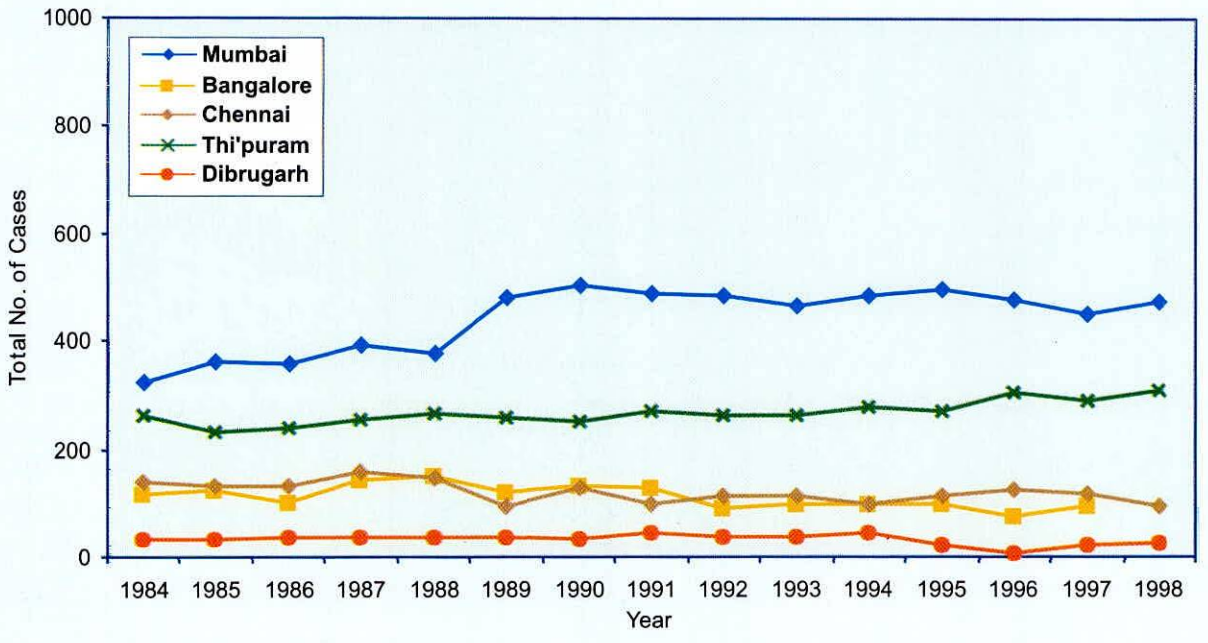
Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**2381**	**100.0**	**468**	**100.0**	**553**	**100.0**	**1456**	**100.0**	**128**	**100.0**
Specific Treatments										
Surgery(S)	986	41.4	23	4.9	2	0.4	56	3.8	15	11.7
Radiotherapy(R)	248	10.4	241	51.5	441	79.7	1003	68.9	96	75.0
Chemotherapy(C)	250	10.5	60	12.8	0	0.0	36	2.5	3	2.3
S + R	651	27.3	97	20.7	58	10.5	162	11.1	10	7.8
S + C	80	3.4	5	1.1	0	0.0	4	0.3	2	1.6
R + C	95	4.0	28	6.0	48	8.7	166	11.4	2	1.6
S + R + C	71	3.0	14	3.0	4	0.7	27	1.9	0	0.0
Others	0	0.0	0	0.0	0	0.0	2	0.1	0	0.0
Modality of therapy										
Single	1484	62.3	324	69.2	443	80.1	1095	75.2	114	89.1
Combination	897	37.7	144	30.8	110	19.9	359	24.7	14	10.9
Type of Any Treatment*										
Any Surgery	1788	75.1	139	29.7	64	11.6	249	17.1	27	21.1
Any R	1065	44.7	380	81.2	551	99.6	1358	93.3	108	84.4
Any C	496	20.8	107	22.9	52	9.4	233	16.0	7	5.5

Females

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**889**	**100.0**	**1220**	**100.0**	**467**	**100.0**	**787**	**100.0**	**60**	**100.0**
Specific Treatments										
Surgery(S)	396	44.5	45	3.7	2	0.4	30	3.8	13	21.7
Radiotherapy(R)	65	7.3	590	48.4	377	80.7	586	74.5	42	70.0
Chemotherapy(C)	84	9.4	198	16.2	1	0.2	19	2.4	0	0.0
S + R	280	31.5	249	20.4	48	10.3	82	10.4	4	6.7
S + C	26	2.9	21	1.7	1	0.2	3	0.4	0	0.0
R + C	17	1.9	75	6.1	34	7.3	59	7.5	1	1.7
S + R + C	21	2.4	40	3.3	4	0.9	4	0.5	0	0.0
Others	0	0.0	2	0.2	0	0.0	4	0.5	0	0.0
Modality of therapy										
Single	545	61.3	833	68.3	380	81.4	635	80.7	55	91.7
Combination	344	38.7	385	31.6	87	18.6	148	18.8	5	8.3
Type of Any Treatment*										
Any Surgery	723	81.3	357	29.3	55	11.8	119	15.1	17	28.3
Any R	383	43.1	956	78.4	463	99.1	731	92.9	47	78.3
Any C	148	16.6	334	27.4	40	8.6	85	10.8	1	1.7

Fig. 8.3: Trends in actual number of patients who received Treatment Only at Reporting Institution - Oral Cavity

Males



Females

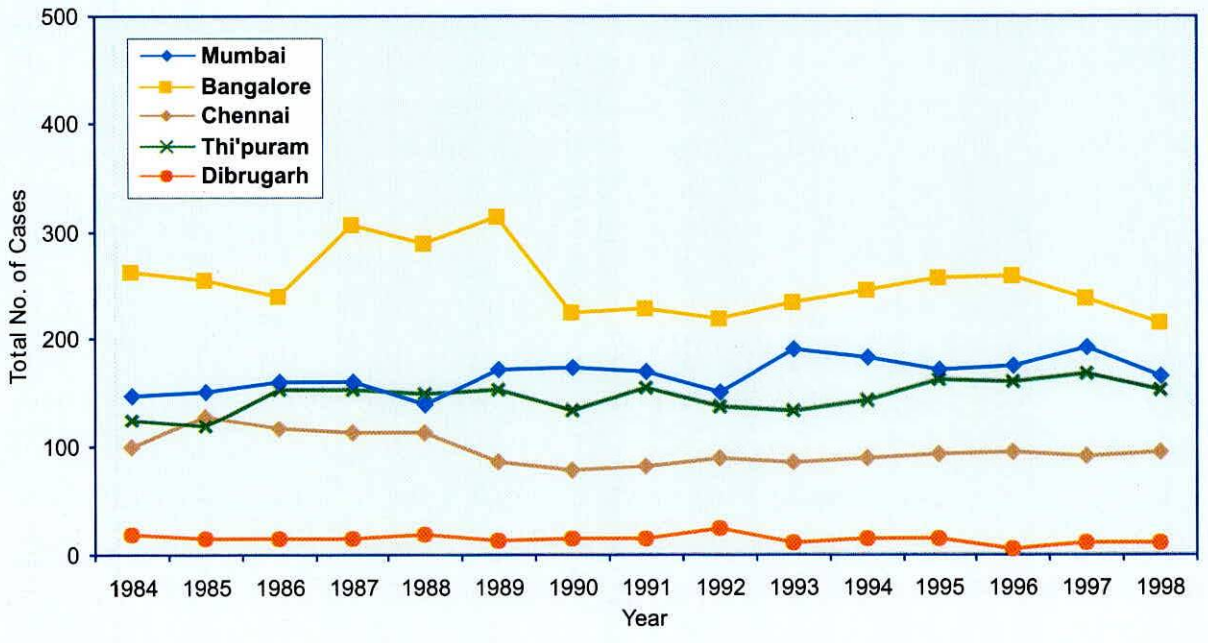
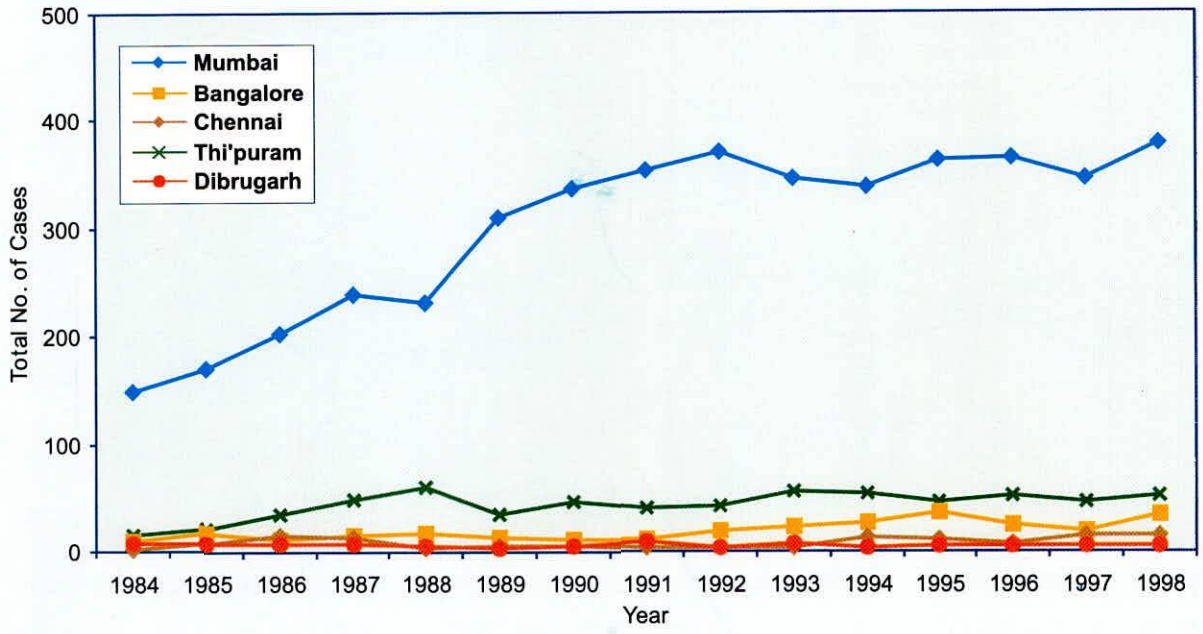


Fig. 8.4: Trends in actual number of patients who received Any Surgery (Treated only at RI) - Oral Cavity

Males



Females

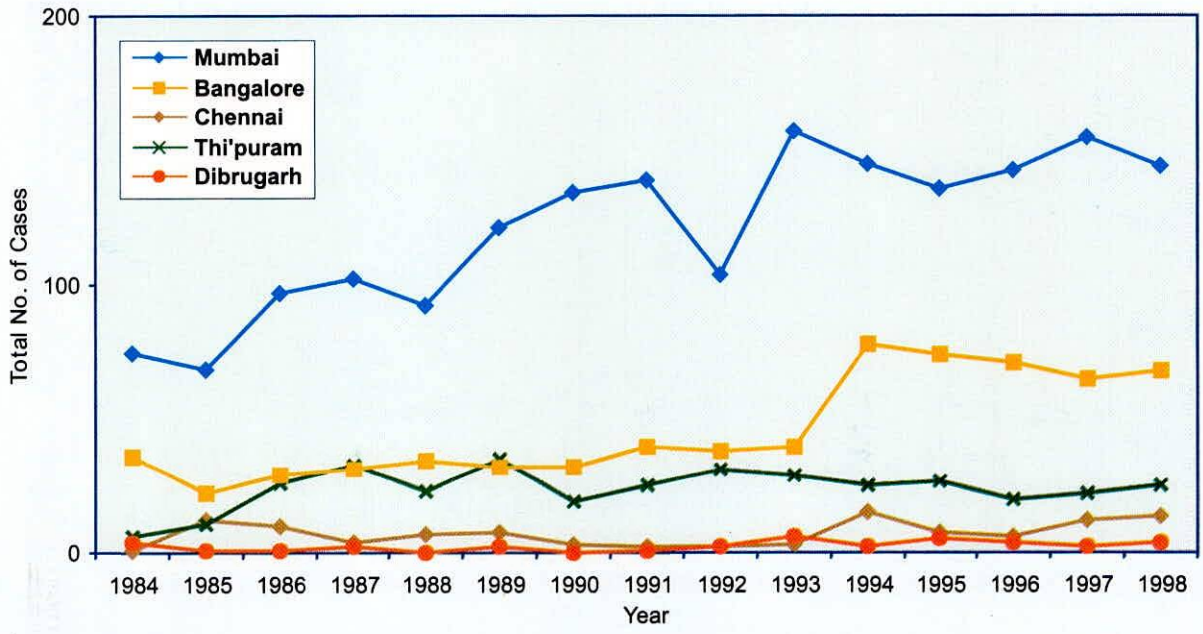
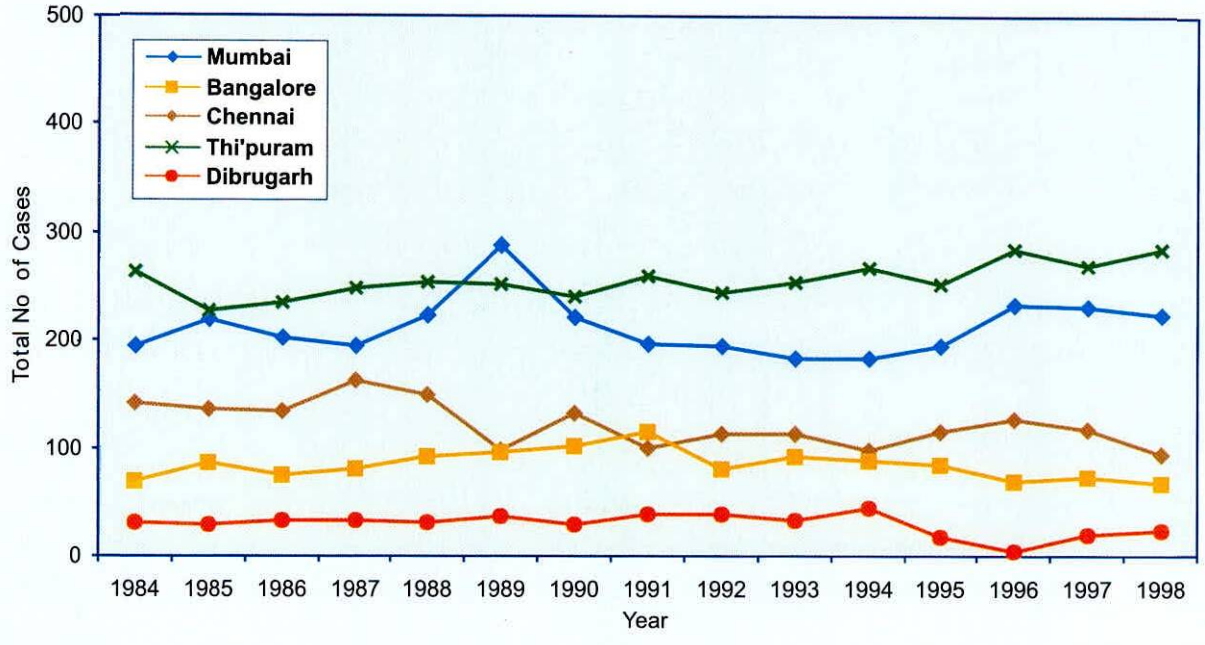


Fig. 8.5: Trends in actual number of patients who received Any Radiotherapy (Treated only at RI) - Oral Cavity

Males



Females

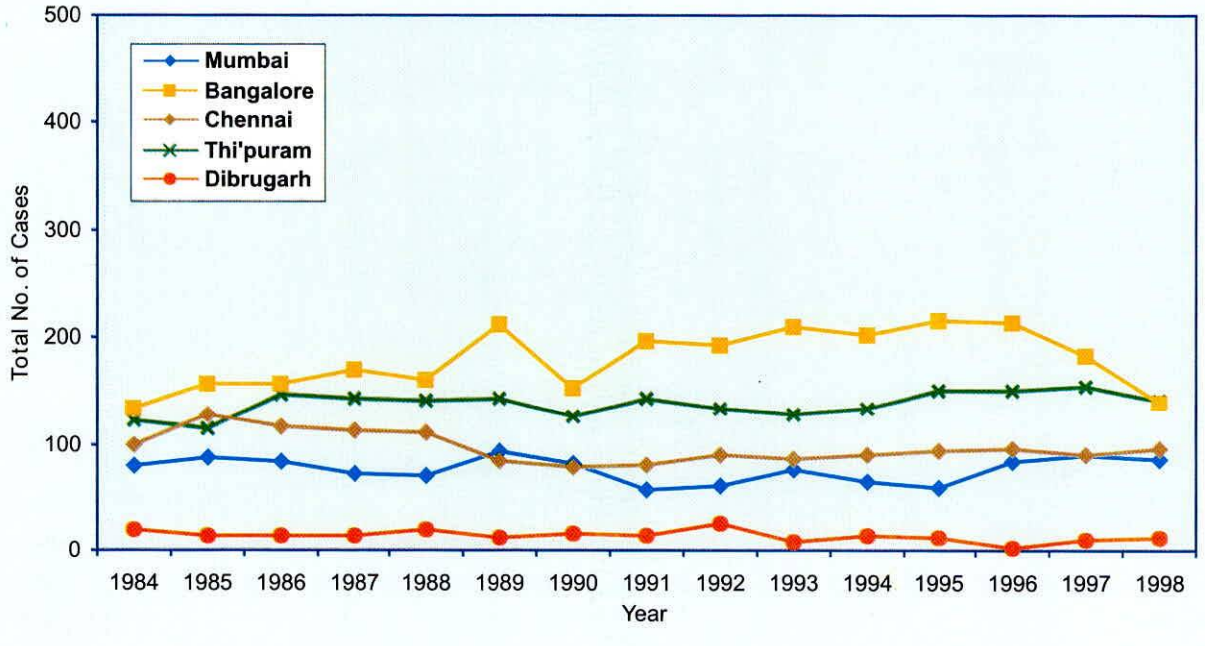
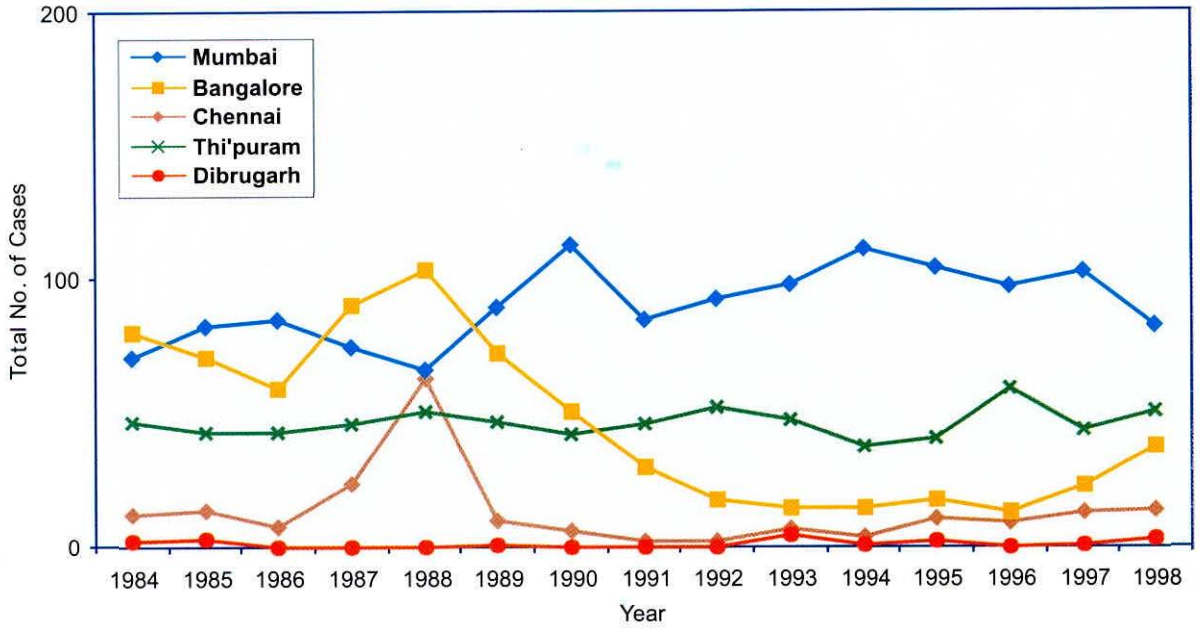
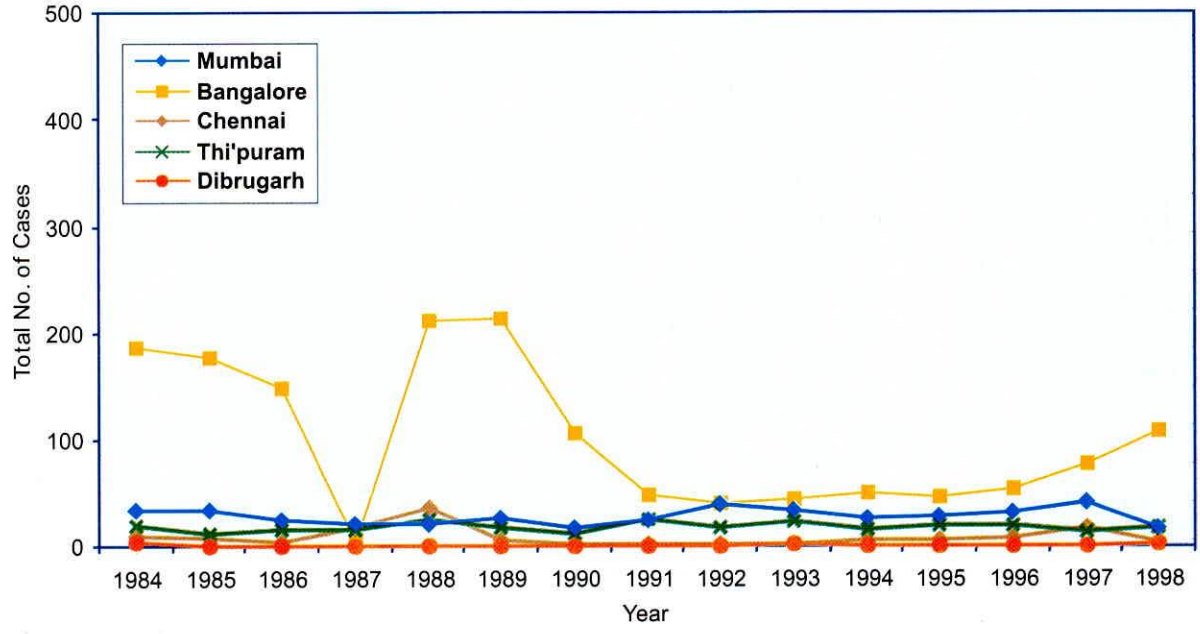


Fig. 8.6: Trends in actual number of patients who received Any Chemotherapy (Treated only at RI) - Oral Cavity

Males



Females



Chapter 9

TONGUE (ICD-9: 141)

The total number, relative proportion and rank of cancer of the tongue in males and females for the years 1994-98 is given in Table 9.1.

Table 9.1 (a) : Number(#), Relative Proportion(%) and Rank(R) of cancers of the tongue

Registry	Males				Females			
	Total	#	%	R	Total	#	%	R
Mumbai	43006	3311	7.7	2	33722	892	2.6	6
Bangalore	15926	874	5.5	5	18552	194	1.0	>10
Chennai	13413	1020	7.6	4	15581	274	1.8	9
Thi'puram	18978	1120	5.9	3	16648	592	3.6	6
Dibrugarh	2645	190	7.2	4	1498	51	3.4	10

Table 9.1 (b): Number(#) and Relative Proportion(%) of oral cancer patients according to Broad Groups of Treatment(Tmt)

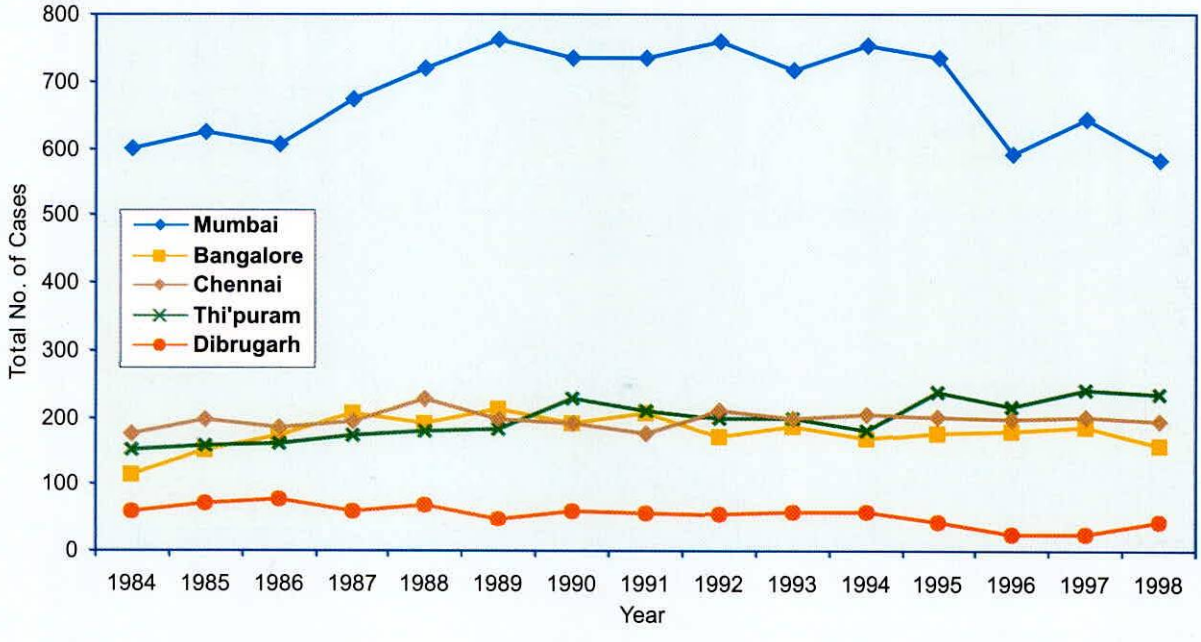
Sub-Site	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Base of Tongue	1734	52.4	635	72.7	526	51.6	216	19.3	143	75.3
Anterior Tongue	1410	42.6	127	14.5	468	45.9	488	43.6	27	14.2
Tongue NOS*	167	5.0	112	12.8	26	2.5	416	37.1	20	10.5
Total Tongue Cancers	**3311**	**100.0**	**874**	**100.0**	**1020**	**100.0**	**1120**	**100.0**	**190**	**100.0**
FEMALES										
Base of Tongue	190	21.3	57	29.4	48	17.5	29	4.9	35	68.6
Anterior Tongue	642	72.0	90	46.4	214	78.1	341	57.6	11	21.6
Tongue NOS*	60	6.7	47	24.2	12	4.4	222	37.5	5	9.8
Total Tongue Cancers	**892**	**100.0**	**194**	**100.0**	**274**	**100.0**	**592**	**100.0**	**51**	**100.0**

NOS = Not Otherwise Specified

Figure 9.1 provides a picture of the trends in actual numbers of tongue cancers registered in the five HBCRs. Females in Mumbai and both males and females at Thiruvananthapuram have shown a rise in the numbers.

Fig. 9.1: Trends in Actual Numbers - Tongue Cancer

Males



Females

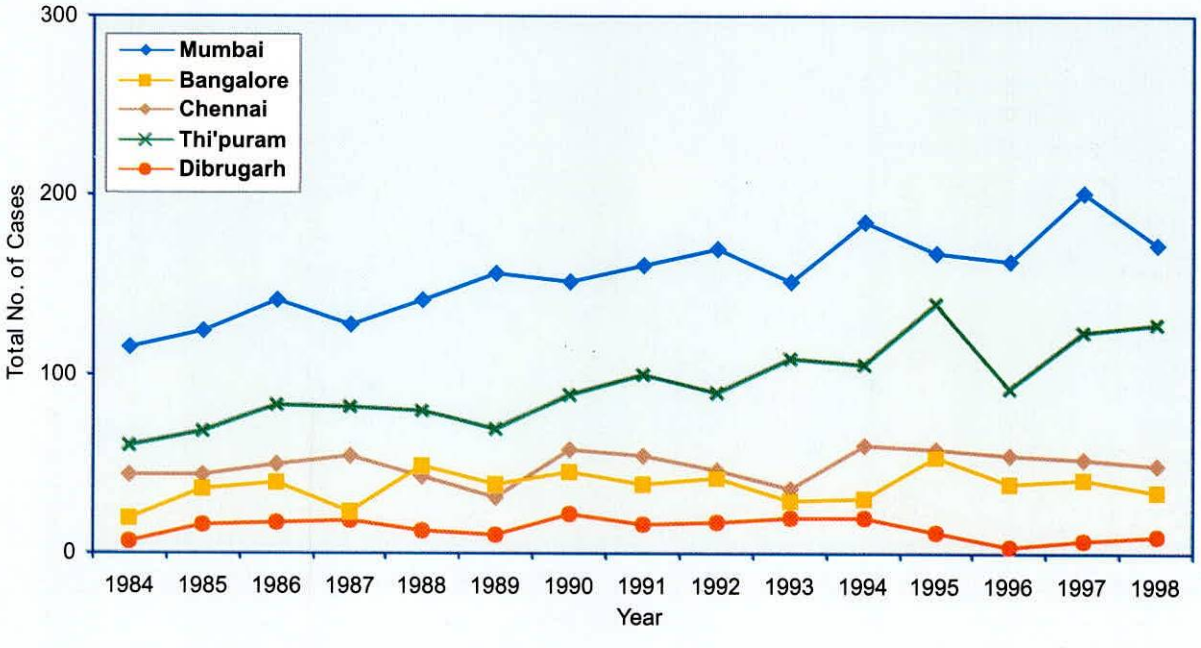
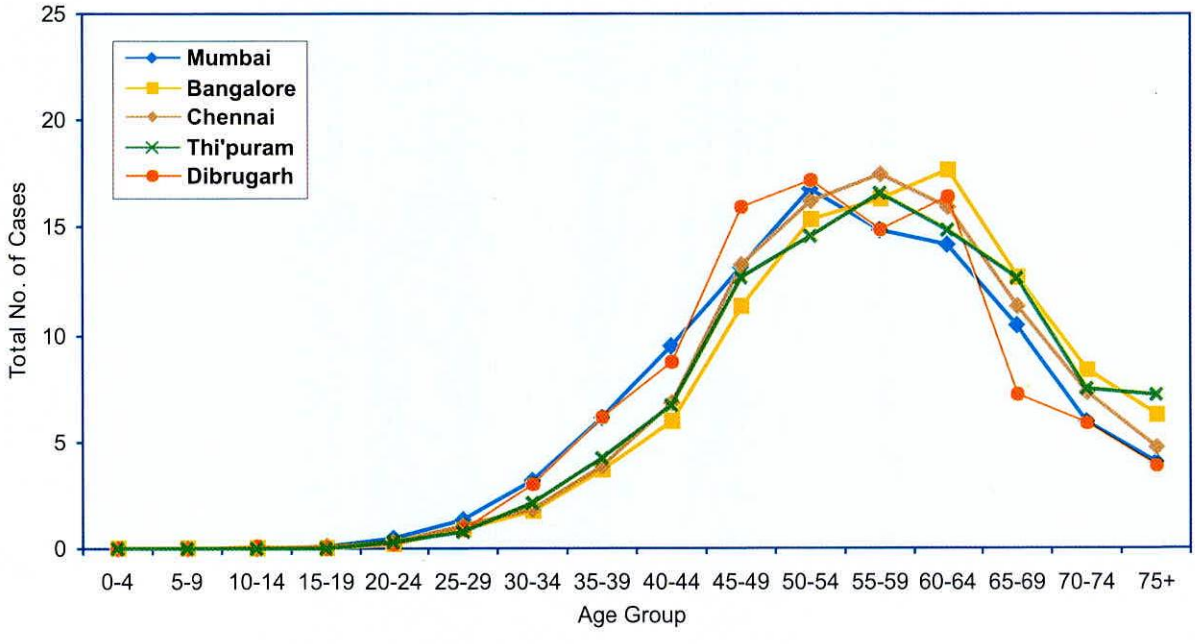


Table 9.2 and Figure 9.2 give the five-year age distribution of cancers of the tongue. Compared to other registries the registry at Thiruvananthapuram has shown a later age of rise in numbers followed by a peak that is at least 2 decades later. This was also seen in cancer of the oral cavity.

Fig. 9.2: Five year age group distribution - Tongue Cancer

Males



Females

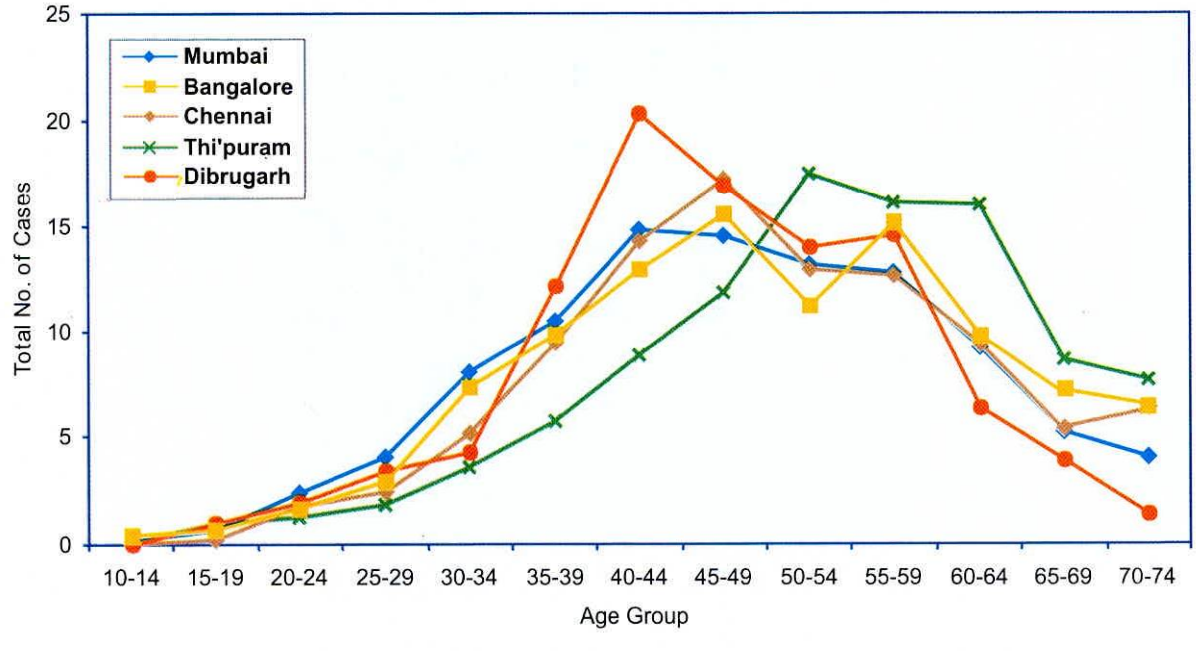


Table 9.2: Number(#) and Relative Proportion(%) of tongue cancers according to five year age group

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	0.0	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	1	0.1	1	0.1	1	0.1	0	0.0
20-24	20	0.6	1	0.1	1	0.1	1	0.1	0	0.0
25-29	54	1.6	5	0.6	12	1.2	6	0.5	1	0.5
30-34	120	3.6	10	1.1	14	1.4	26	2.3	5	2.6
35-39	222	6.7	35	4.0	47	4.6	42	3.8	11	5.8
40-44	338	10.2	39	4.5	57	5.6	78	7.0	22	11.6
45-49	442	13.3	91	10.4	139	13.6	141	12.6	25	13.2
50-54	523	15.8	134	15.3	150	14.7	174	15.5	22	11.6
55-59	435	13.1	160	18.3	191	18.7	192	17.1	30	15.8
60-64	432	13.0	145	16.6	159	15.6	172	15.4	39	20.5
65-69	392	11.8	112	12.8	113	11.1	133	11.9	10	5.3
70-74	201	6.1	78	8.9	75	7.4	83	7.4	15	7.9
75+	123	3.7	63	7.2	61	6.0	71	6.3	10	5.3
ANS	7	0.2	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**3311**	**100.0**	**874**	**100.0**	**1020**	**100.0**	**1120**	**100.0**	**190**	**100.0**

Females

Age Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
0- 4	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
5- 9	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	1	0.1	1	0.5	0	0.0	1	0.2	0	0.0
20-24	6	0.7	2	1.0	1	0.4	4	0.7	0	0.0
25-29	19	2.1	4	2.1	3	1.1	8	1.4	0	0.0
30-34	35	3.9	9	4.6	10	3.6	8	1.4	1	2.0
35-39	80	9.0	12	6.2	13	4.7	15	2.5	3	5.9
40-44	87	9.8	27	13.9	28	10.2	38	6.4	4	7.8
45-49	126	14.1	15	7.7	42	15.3	53	9.0	14	27.5
50-54	131	14.7	31	16.0	54	19.7	61	10.3	7	13.7
55-59	97	10.9	23	11.9	35	12.8	103	17.4	5	9.8
60-64	118	13.2	29	14.9	36	13.1	90	15.2	11	21.6
65-69	96	10.8	15	7.7	30	10.9	93	15.7	3	5.9
70-74	51	5.7	13	6.7	11	4.0	61	10.3	2	3.9
75+	43	4.8	13	6.7	11	4.0	57	9.6	1	2.0
ANS	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**892**	**100.0**	**194**	**100.0**	**274**	**100.0**	**592**	**100.0**	**51**	**100.0**

Table 9.3 shows the number and relative proportion of microscopic diagnosis for 1994-98. Table 9.4 indicates the number and relative proportion of clinical extent of disease in those who have not received previous treatment before registration at reporting institution.

Table 9.3 : Number(#) and Relative Proportion(%) of tongue cancers based on different methods of diagnosis

Registry	Microscopic		Clinical		X-ray		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Males										
Mumbai	3079	93.0	20	0.6	2	0.1	210	6.3	3311	100.0
Bangalore	835	95.5	20	2.3	1	0.1	18	2.1	874	100.0
Chennai	619	60.7	401	39.3	0	0.0	0	0.0	1020	100.0
Thi'puram	1028	91.8	88	7.9	1	0.1	3	0.3	1120	100.0
Dibrugarh	190	100.0	0	0.0	0	0.0	0	0.0	190	100.0
Females										
Mumbai	831	93.2	5	0.6	0	0.0	56	6.3	892	100.0
Bangalore	187	96.4	5	2.6	0	0.0	2	1.0	194	100.0
Chennai	181	66.1	93	33.9	0	0.0	0	0.0	274	100.0
Thi'puram	541	91.4	51	8.6	0	0.0	0	0.0	592	100.0
Dibrugarh	51	100.0	0	0.0	0	0.0	0	0.0	51	100.0

Table 9.5 gives the number and relative proportion according to broad groups of treatment.

While Table 9.6 gives the specific types of treatment received by patients, during 1994-98, the Figures 9.3 to 9.6 give the trends in actual numbers of patient who received any form of overall treatment and the main types of treatment (surgery, radiotherapy, chemotherapy) from 1984 to 1998.

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

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Males												
Mumbai	730	26.3	1914	69.0	*2644*	*95.3*	93	3.4	37	1.3	2774	100.0
Bangalore	62	7.5	705	85.8	*767*	*93.3*	51	6.2	4	0.5	822	100.0
Chennai	61	7.0	804	91.8	*865*	*98.7*	11	1.3	0	0.0	876	100.0
Thi'puram	170	16.6	834	81.4	*1004*	*98.0*	20	2.0	0	0.0	1024	100.0
Dibrugarh	30	16.2	154	83.2	*184*	*99.5*	1	0.5	0	0.0	185	100.0
Females												
Mumbai	276	38.0	429	59.0	*705*	*97.0*	18	2.5	4	0.6	727	100.0
Bangalore	24	13.0	152	82.6	*176*	*95.7*	8	4.3	0	0.0	184	100.0
Chennai	37	15.5	200	84.0	*237*	*99.6*	1	0.4	0	0.0	238	100.0
Thi'puram	116	21.0	422	76.3	*538*	*97.3*	15	2.7	0	0.0	553	100.0
Dibrugarh	9	18.4	40	81.6	*49*	*100.0*	0	0.0	0	0.0	49	100.0

Table 9.5: Number(#) and Relative Proportion(%) of tongue cancer patients according to Broad Groups of Treatment(Tmt)

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Prior Tmt. Only	332	10.0	43	4.9	131	12.8	45	4.0	2	1.1
Prior & Tmt. at RI	205	6.2	9	1.0	13	1.3	51	4.6	3	1.6
Tmt. Only at RI	1506	45.5	439	50.2	393	38.5	802	71.6	144	75.8
`No' Treatment	1268	38.3	383	43.8	483	47.4	222	19.8	41	21.6
Total Patients	**3311**	**100.0**	**874**	**100.0**	**1020**	**100.0**	**1120**	**100.0**	**190**	**100.0**
FEMALES										
Prior Tmt. Only	82	9.2	4	2.1	33	12.0	16	2.7	1	2.0
Prior & Tmt. at RI	83	9.3	6	3.1	3	1.1	23	3.9	1	2.0
Tmt. Only at RI	415	46.5	104	53.6	125	45.6	431	72.8	40	78.4
`No' Treatment	312	35.0	80	41.2	113	41.2	122	20.6	9	17.6
Total Patients	**892**	**100.0**	**194**	**100.0**	**274**	**100.0**	**592**	**100.0**	**51**	**100.0**

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

Males

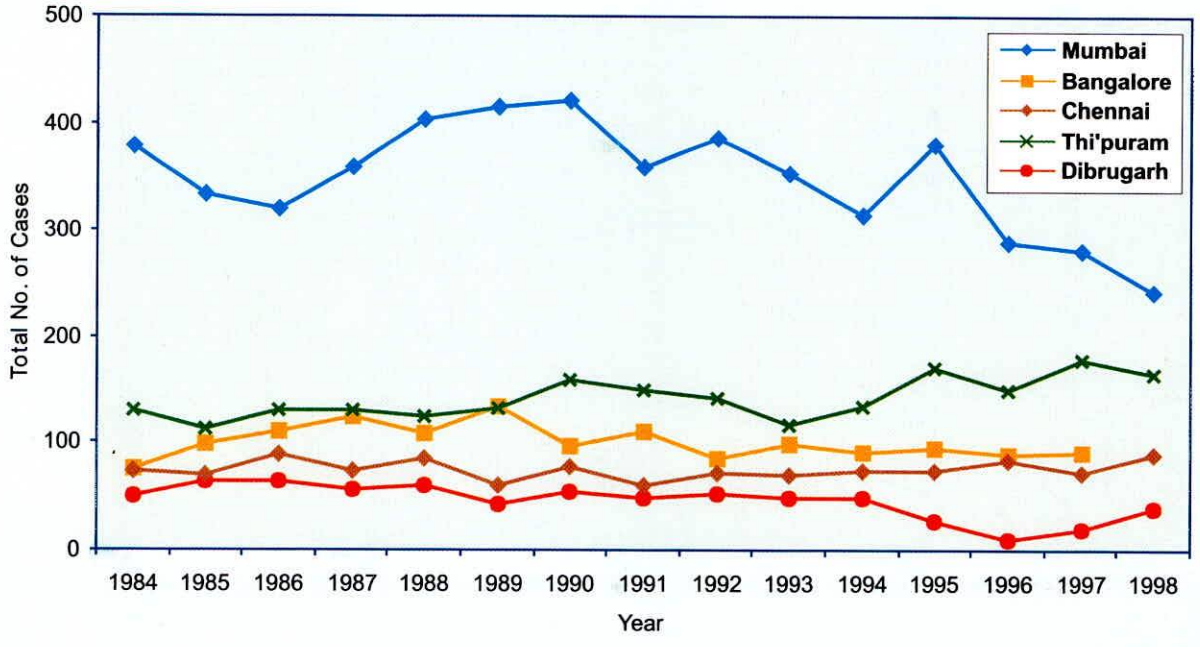
Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**1506**	**100.0**	**439**	**100.0**	**393**	**100.0**	**802**	**100.0**	**144**	**100.0**
Specific Treatments										
Surgery(S)	418	27.8	10	2.3	2	0.5	72	9.0	3	2.1
Radiotherapy(R)	604	40.1	359	81.8	336	85.5	368	45.9	133	92.4
Chemotherapy(C)	113	7.5	8	1.8	1	0.3	77	9.6	3	2.1
S + R	229	15.2	39	8.9	34	8.7	104	13.0	2	1.4
S + C	7	0.5	1	0.2	0	0.0	9	1.1	0	0.0
R + C	115	7.6	17	3.9	16	4.1	146	18.2	3	2.1
S + R + C	20	1.3	5	1.1	4	1.0	25	3.1	0	0.0
Others	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Modality of therapy										
Single	1135	75.4	377	85.9	339	86.3	517	64.5	139	96.5
Combination	371	24.6	62	14.1	54	13.7	284	35.4	5	3.5
Type of Any Treatment										
Any Surgery	674	44.8	55	12.5	40	10.2	210	26.2	5	3.5
Any R	968	64.3	420	95.7	390	99.2	643	80.2	138	95.8
Any C	255	16.9	31	7.1	21	5.3	257	32.0	6	4.2

Females

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**415**	**100.0**	**104**	**100.0**	**125**	**100.0**	**431**	**100.0**	**40**	**100.0**
Specific Treatments										
Surgery(S)	198	47.7	6	5.8	2	1.6	56	13.0	0	0.0
Radiotherapy(R)	85	20.5	64	61.5	95	76.0	179	41.5	35	87.5
Chemotherapy(C)	21	5.1	2	1.9	0	0.0	47	10.9	1	2.5
S + R	87	21.0	25	24.0	16	12.8	73	16.9	1	2.5
S + C	6	1.4	0	0.0	0	0.0	7	1.6	0	0.0
R + C	16	3.9	6	5.8	11	8.8	58	13.5	3	7.5
S + R + C	2	0.5	1	1.0	1	0.8	8	1.9	0	0.0
Others	0	0.0	0	0.0	0	0.0	3	0.7	0	0.0
Modality of therapy										
Single	304	73.3	72	69.2	97	77.6	282	65.4	36	90.0
Combination	111	26.7	32	30.8	28	22.4	146	33.9	4	10.0
Type of Any Treatment										
Any Surgery	293	70.6	32	30.8	19	15.2	144	33.4	1	2.5
Any R	190	45.8	96	92.3	123	98.4	318	73.8	37	97.5
Any C	45	10.8	9	8.7	12	9.6	120	27.8	4	10.0

Fig. 9.3: Trends in actual number of patients who received Treatment Only at Reporting Institution - Tongue Cancer

Males



Females

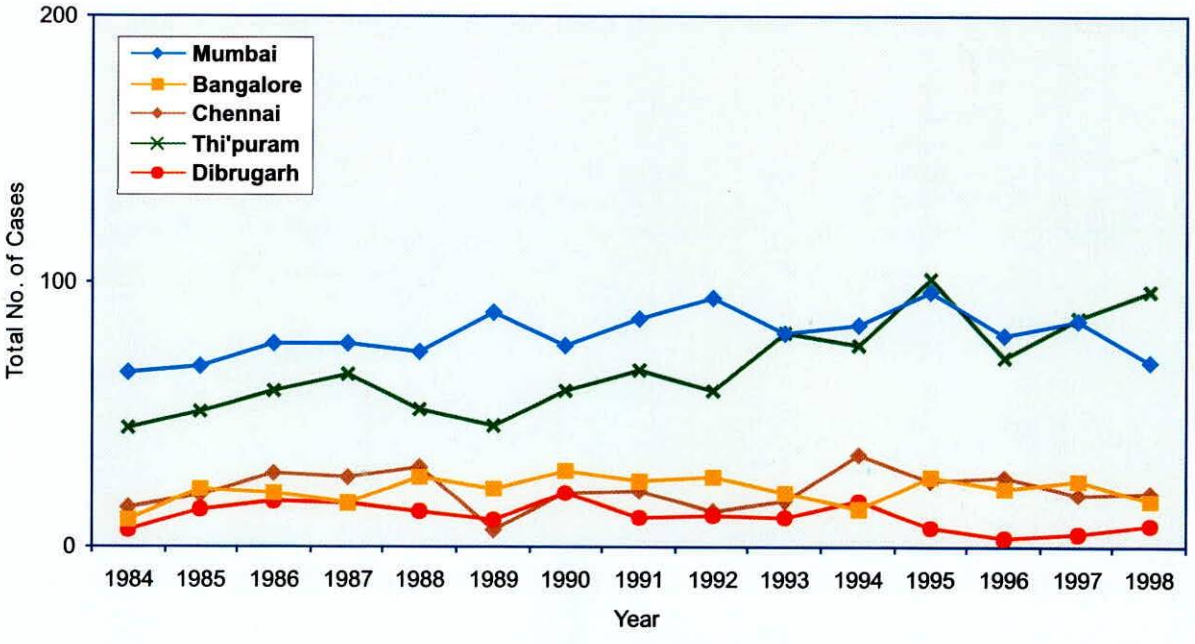
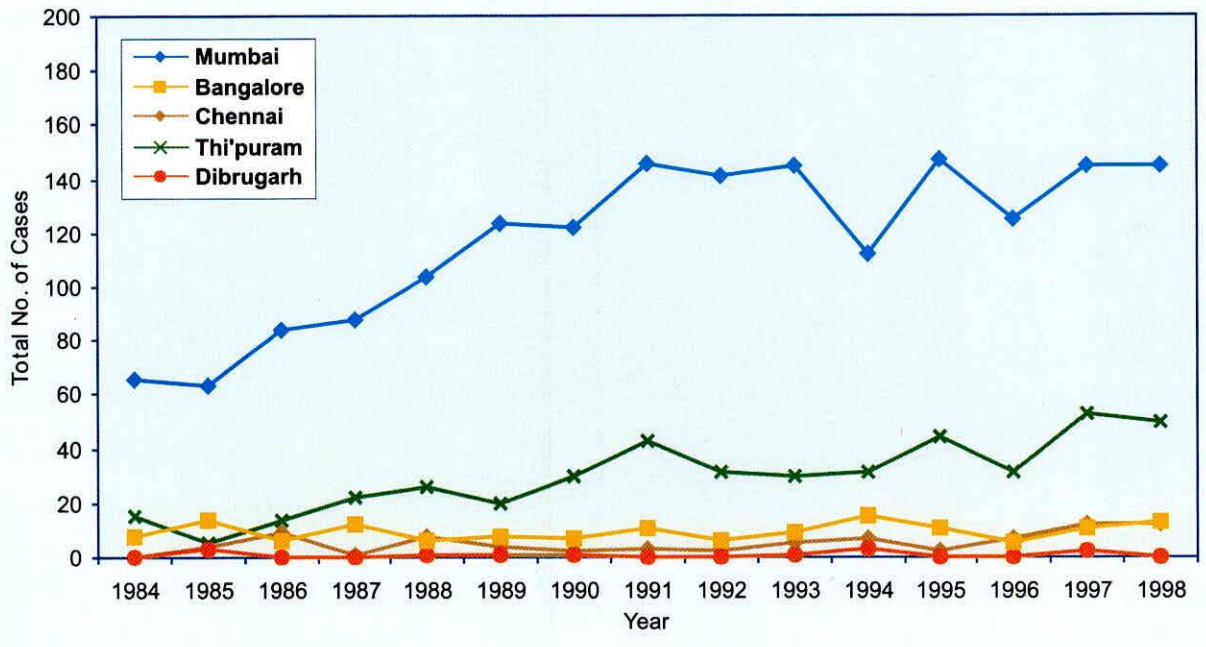


Fig. 9.4: Trends in actual number of patients who received Any Surgery (Treated only at RI) - Tongue Cancer

Males



Females

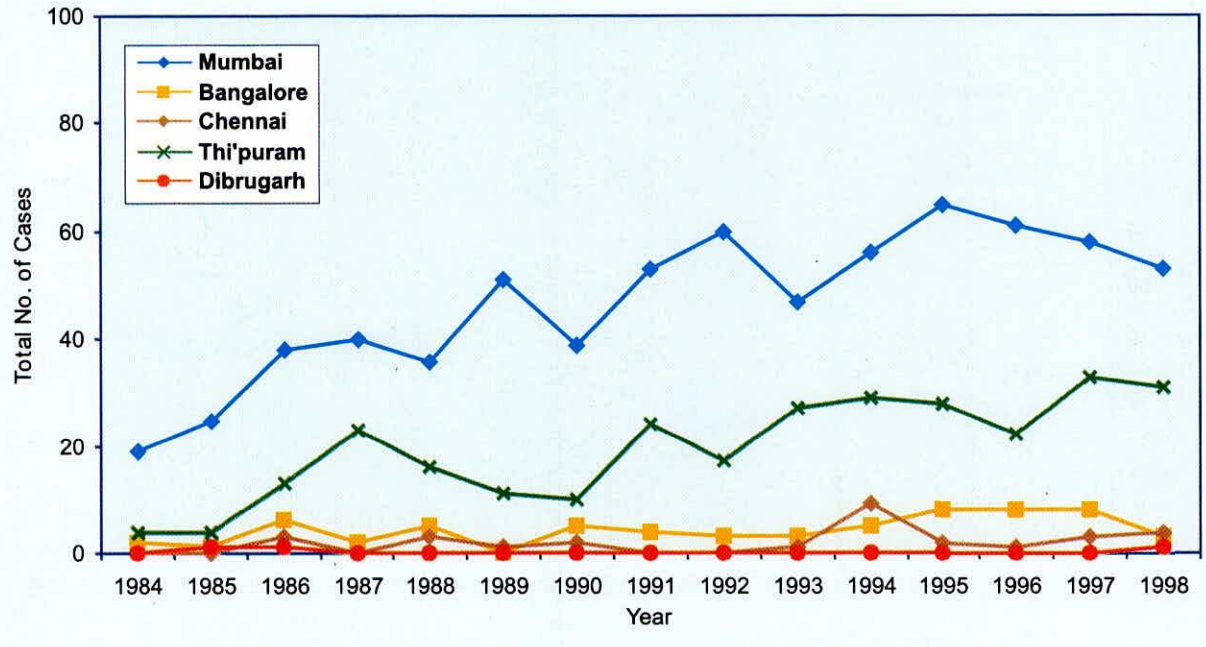
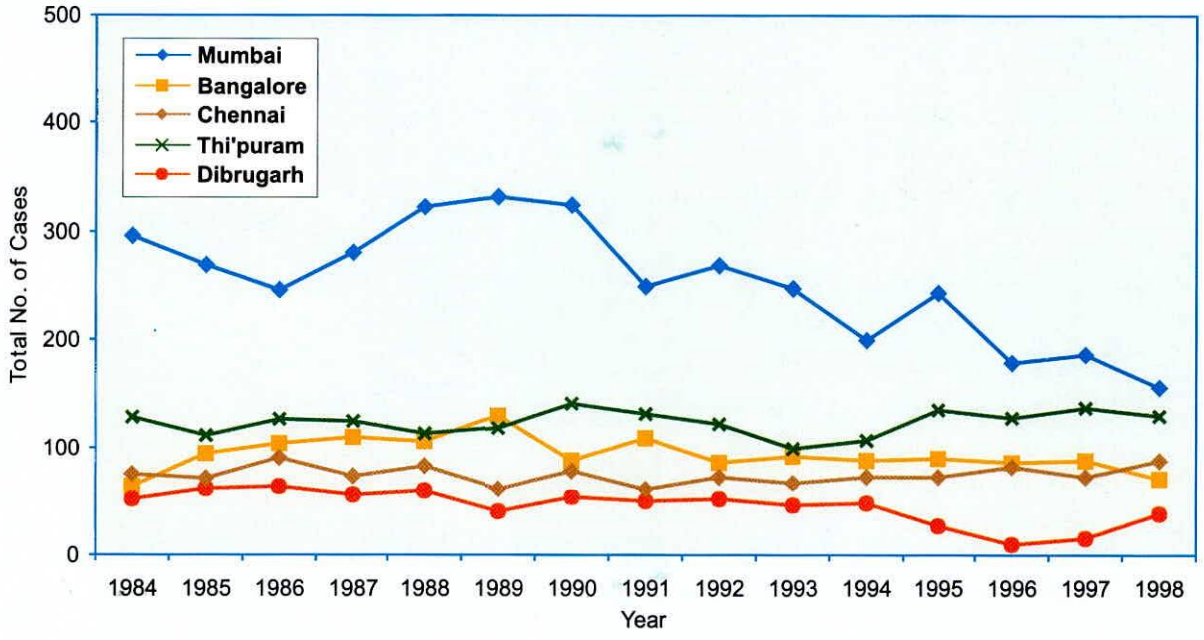


Fig. 9.5: Trends in actual number of patients who received Any Radiotherapy (Treated only at RI) - Tongue Cancer

Males



Females

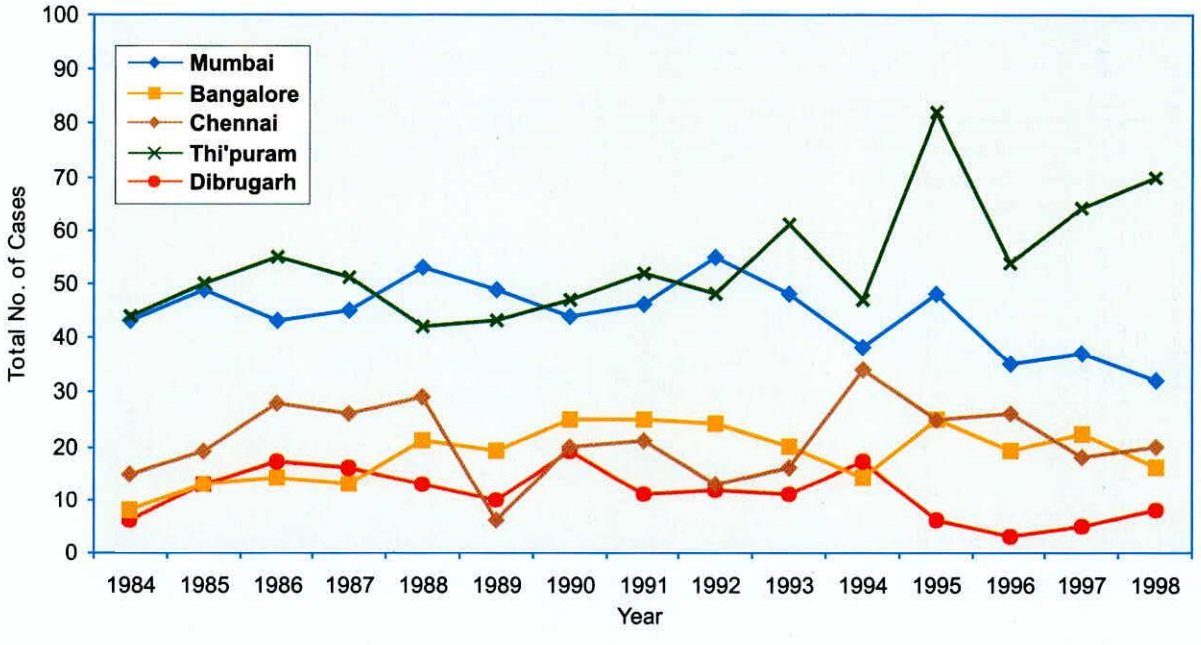
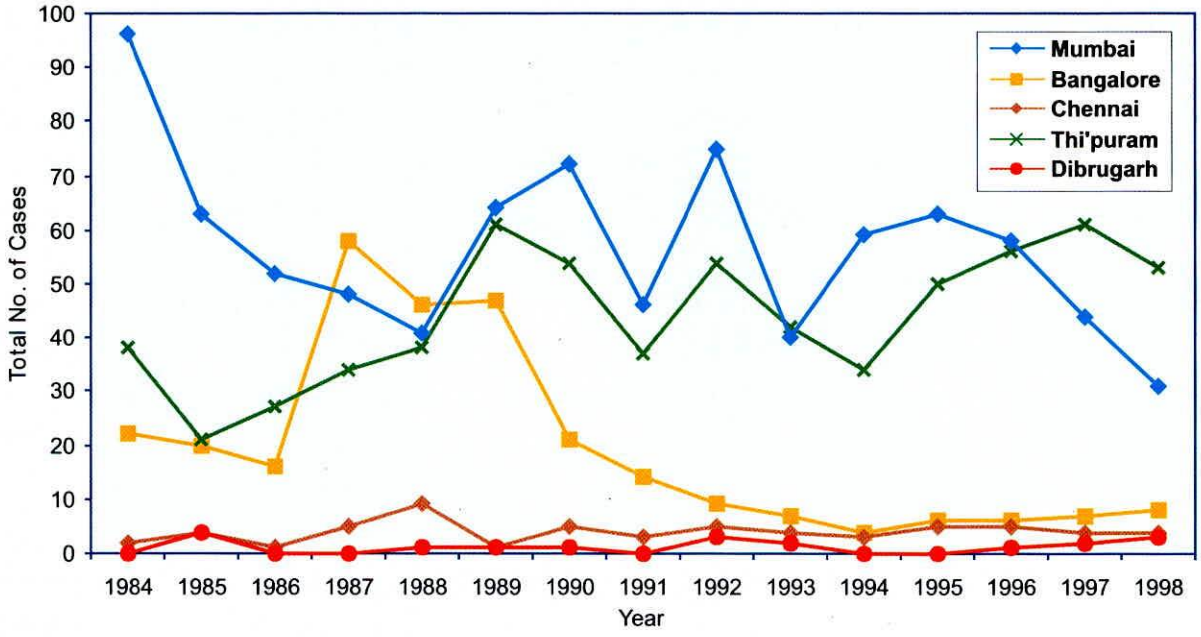
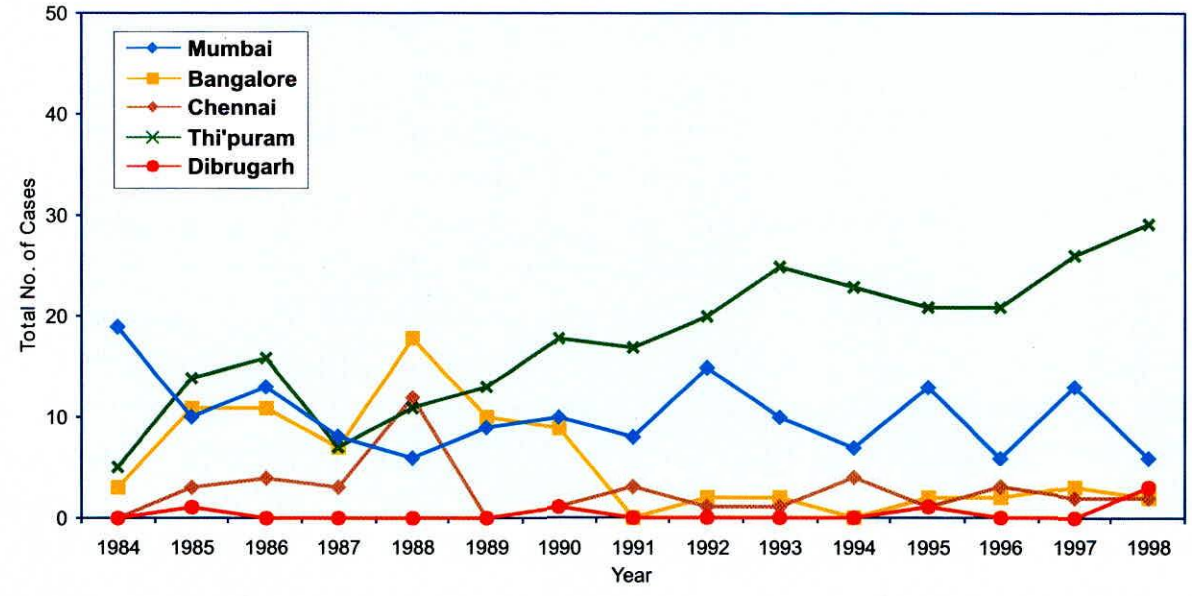


Fig. 9.6: Trends in actual number of patients who received Any Chemotherapy (Treated only at RI) - Tongue Cancer

Males



Females



Chapter 10

OESOPHAGUS (ICD-9: 150)

The total number, relative proportion and rank of cancer oesophagus in males and females for the years 1994-98 are given in Table 10.1.

Table 10.1 (a): Number(#), Relative Proportion(%) and Rank(R) of cancers of the oesophagus

Registry	Males				Females			
	Total	#	%	R	Total	#	%	R
Mumbai	43006	2870	6.7	5	33722	1483	4.4	5
Bangalore	15926	1592	10.0	2	18552	1190	6.4	4
Chennai	13413	963	7.2	5	15581	510	3.3	5
Thi'puram	18978	1094	5.8	4	16648	293	1.8	>10
Dibrugarh	2645	360	13.6	2	1498	175	11.7	3

Table 10.1 (b): Oesophageal Cancers - Number(#) and Relative Proportion(%) according to sub-site

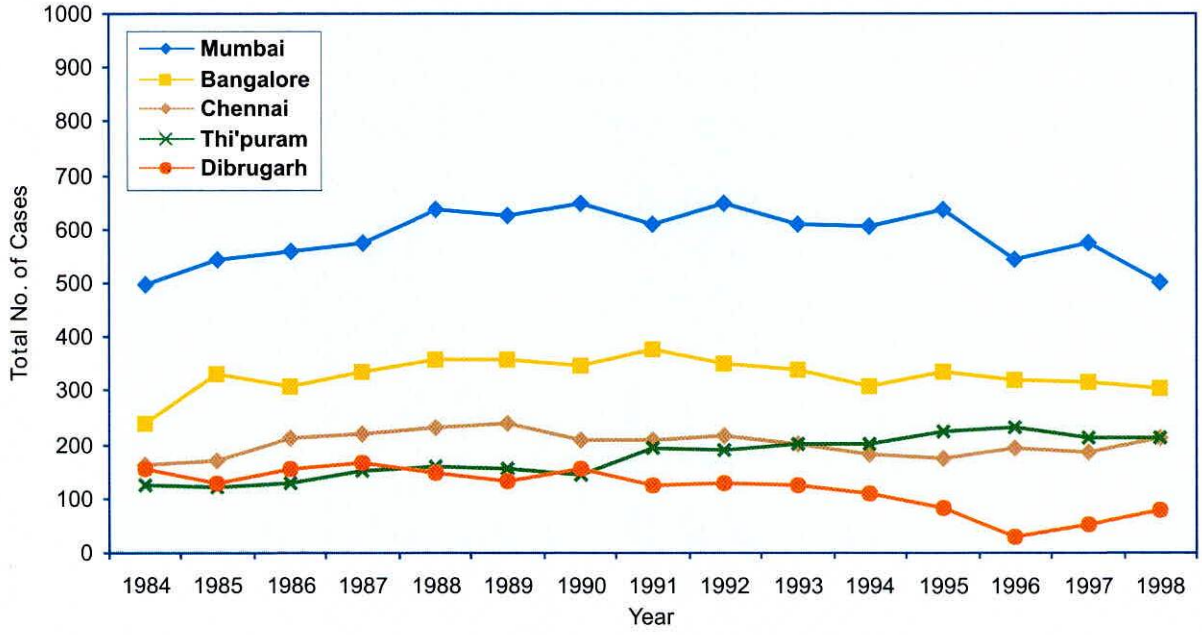
Sub-site	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Cervical-Upper 3rd	367	12.8	146	9.2	119	12.4	117	10.7	51	14.2
Thoracic-Middle 3rd	1325	46.2	644	40.5	338	35.1	316	28.9	161	44.7
Abdominal-Lower 3rd	976	34.0	404	25.4	336	34.9	341	31.2	99	27.5
Overlap of Subsite	1	0.0	71	4.5	99	10.3	15	1.4	7	1.9
NOS*	201	7.0	327	20.5	71	7.4	305	27.9	42	11.7
Total Oesophagus	**2870**	**100.0**	**1592**	**100.0**	**963**	**100.0**	**1094**	**100.0**	**360**	**100.0**
FEMALES										
Cervical-Upper 3rd	170	11.5	93	7.8	54	10.6	22	7.5	18	10.3
Thoracic-Middle 3rd	761	51.3	517	43.4	211	41.4	102	34.8	89	50.9
Abdominal-Lower 3rd	450	30.3	278	23.4	168	32.9	74	25.3	38	21.7
Overlap of Subsite	0	0.0	66	5.5	41	8.0	8	2.7	6	3.4
NOS*	102	6.9	236	19.8	36	7.1	87	29.7	24	13.7
Total Oesophagus	**1483**	**100.0**	**1190**	**100.0**	**510**	**100.0**	**293**	**100.0**	**175**	**100.0**

**NOS = Not Otherwise Specified*

Figure 10.1 provides a picture of the trends in actual numbers of oesophageal cancers registered, in the five HBCRs. The numbers show little fluctuation in the different years in all registries.

Fig. 10.1: Trends in Actual Numbers - Oesophageal Cancer

Males



Females

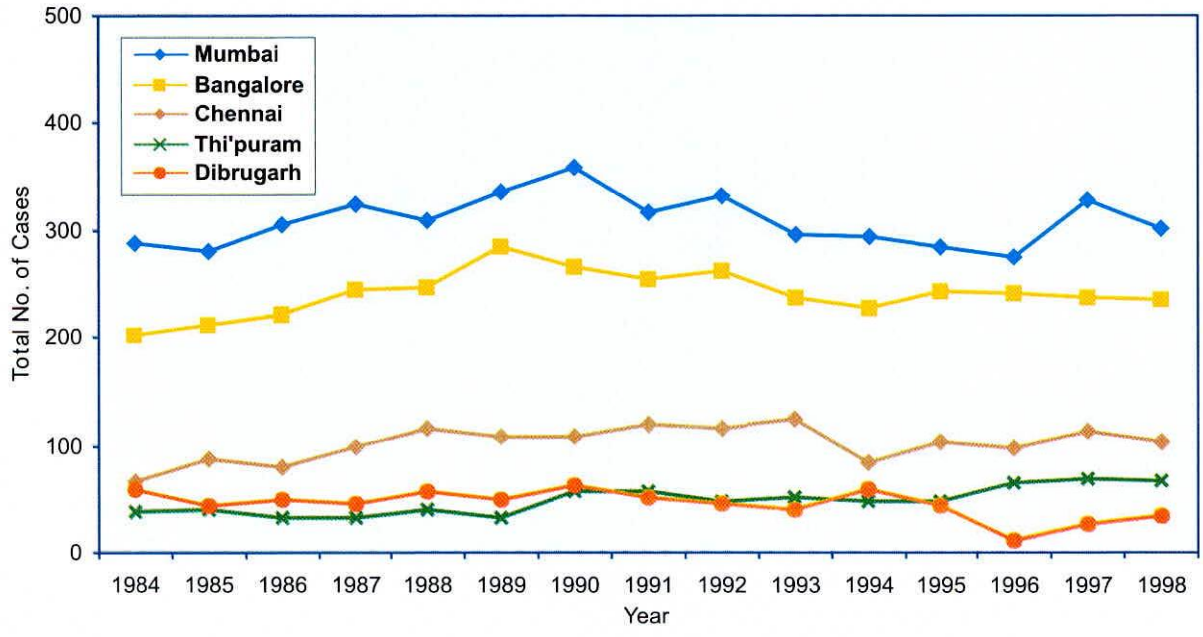
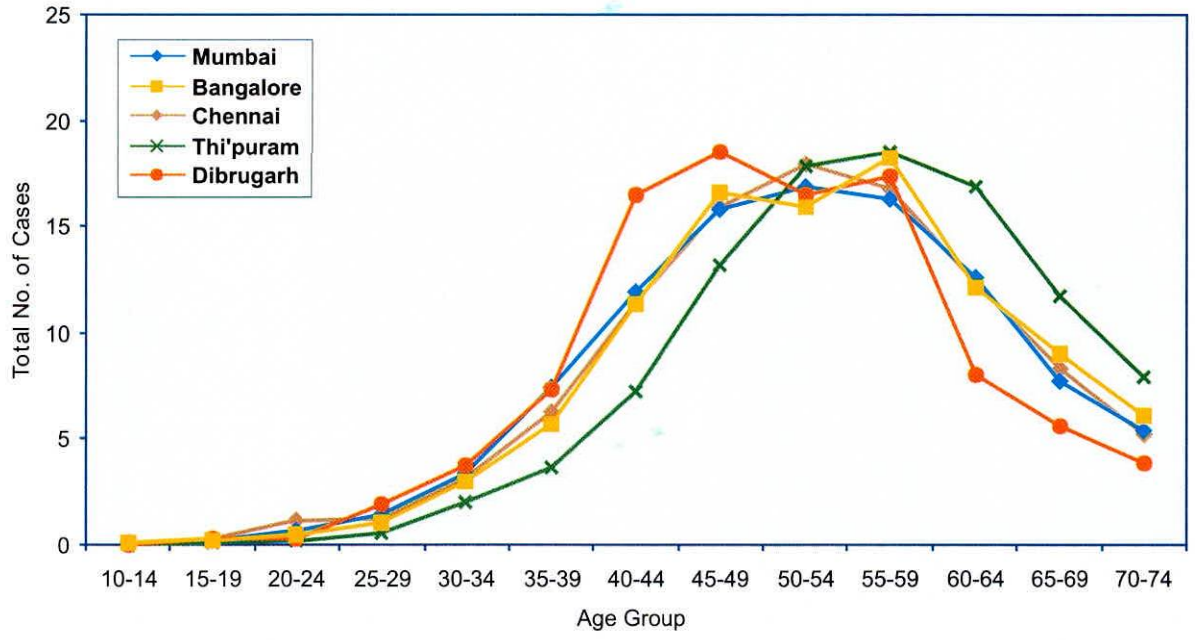


Table 10.2 and Figure 10.2 give the five-year age distribution of cancers of the Oesophagus. Compared to other registries the registry at Thiruvananthapuram has shown a later age of rise in numbers followed by a peak that is at least 2 decades later. This was also seen in cancers of the oral cavity and tongue.

Fig. 10.2: Five year age group distribution - Oesophageal Cancer

Males



Females

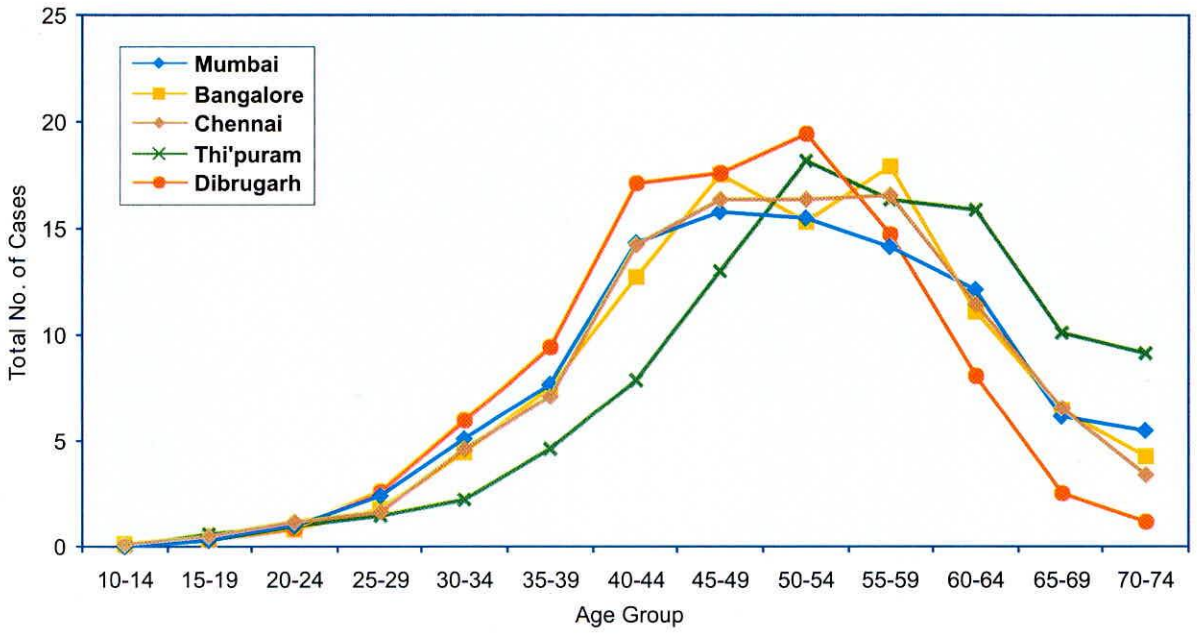


Table 10.2: Number(#) and Relative Proportion(%) of oesophageal cancers according to five year age group

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	1	0.3
10-14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15-19	4	0.1	1	0.1	1	0.1	0	0.0	0	0.0
20-24	8	0.3	3	0.2	4	0.4	1	0.1	3	0.8
25-29	14	0.5	5	0.3	9	0.9	2	0.2	3	0.8
30-34	36	1.3	16	1.0	15	1.6	6	0.5	6	1.7
35-39	93	3.2	46	2.9	34	3.5	27	2.5	15	4.2
40-44	212	7.4	80	5.0	50	5.2	34	3.1	19	5.3
45-49	327	11.4	169	10.6	89	9.2	72	6.6	56	15.6
50-54	430	15.0	234	14.7	148	15.4	131	12.0	47	13.1
55-59	494	17.2	284	17.8	164	17.0	188	17.2	53	14.7
60-64	438	15.3	326	20.5	182	18.9	200	18.3	59	16.4
65-69	391	13.6	198	12.4	133	13.8	186	17.0	41	11.4
70-74	263	9.2	134	8.4	82	8.5	152	13.9	31	8.6
75+	154	5.4	96	6.0	52	5.4	95	8.7	26	7.2
ANS	6	0.2	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**2870**	**100.0**	**1592**	**100.0**	**963**	**100.0**	**1094**	**100.0**	**360**	**100.0**

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	1	0.1	1	0.2	0	0.0	0	0.0
20-24	5	0.3	3	0.3	2	0.4	1	0.3	1	0.6
25-29	12	0.8	7	0.6	7	1.4	4	1.4	2	1.1
30-34	32	2.2	12	1.0	12	2.4	5	1.7	4	2.3
35-39	75	5.1	43	3.6	26	5.1	9	3.1	11	6.3
40-44	111	7.5	90	7.6	32	6.3	18	6.1	13	7.4
45-49	201	13.6	147	12.4	53	10.4	23	7.8	23	13.1
50-54	227	15.3	209	17.6	90	17.6	36	12.3	29	16.6
55-59	219	14.8	186	15.6	86	16.9	45	15.4	42	24.0
60-64	212	14.3	231	19.4	86	16.9	42	14.3	23	13.1
65-69	206	13.9	133	11.2	67	13.1	53	18.1	16	9.1
70-74	97	6.5	79	6.6	31	6.1	34	11.6	9	5.1
75+	83	5.6	49	4.1	17	3.3	23	7.8	2	1.1
ANS	3	0.2	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**1483**	**100.0**	**1190**	**100.0**	**510**	**100.0**	**293**	**100.0**	**175**	**100.0**

Table 10.3: Number(#) and Relative Proportion(%) of oesophageal cancers based on different methods of diagnosis

Registry	Microscopic		Clinical		X-ray		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Males										
Mumbai	2531	88.2	5	0.2	72	2.5	262	9.1	2870	100.0
Bangalore	1477	92.8	22	1.4	20	1.3	73	4.6	1592	100.0
Chennai	821	85.3	29	3.0	6	0.6	107	11.1	963	100.0
Thi'puram	969	88.6	11	1.0	39	3.6	75	6.9	1094	100.0
Dibrugarh	292	81.1	0	0.0	67	18.6	1	0.3	360	100.0
Females										
Mumbai	1341	90.4	0	0.0	33	2.2	109	7.3	1483	100.0
Bangalore	1113	93.5	12	1.0	31	2.6	34	2.9	1190	100.0
Chennai	422	82.7	17	3.3	0	0.0	71	13.9	510	100.0
Thi'puram	258	88.1	4	1.4	12	4.1	19	6.5	293	100.0
Dibrugarh	145	82.9	0	0.0	30	17.1	0	0.0	175	100.0

Table 10.3 shows the number and relative proportion of microscopic diagnosis for 1994-98. Table 10.4 indicates the number and relative proportion of clinical extent of disease in those who have not received previous treatment before registration at reporting institution.

Table 10.5 gives the number and relative proportion according to broad groups of treatment.

While Table 10.6 gives the specific types of treatment received by patients, during 1994-98, the Figures 10.3 to 10.6 give the trends in actual numbers of patient who received any form of overall treatment and the main types of treatment (surgery, radiotherapy, chemotherapy) from 1984 to 1998.

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

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Males												
Mumbai	1895	70.9	277	10.4	*2172*	*81.3*	474	17.7	25	0.9	2671	100.0
Bangalore	331	21.6	1060	69.3	*1391*	*90.9*	127	8.3	12	0.8	1530	100.0
Chennai	2	0.2	732	81.6	*734*	*81.8*	163	18.2	0	0.0	897	100.0
Thi'puram	137	13.1	789	75.6	*926*	*88.8*	117	11.2	0	0.0	1043	100.0
Dibrugarh	68	19.1	142	39.9	*210*	*59.0*	34	9.6	112	31.5	356	100.0
Females												
Mumbai	1037	74.9	123	8.9	*1160*	*83.8*	209	15.1	15	1.1	1384	100.0
Bangalore	259	22.2	817	70.0	*1076*	*92.2*	81	6.9	10	0.9	1167	100.0
Chennai	3	0.6	393	82.6	*396*	*83.2*	801	6.8	0	0.0	476	100.0
Thi'puram	40	14.2	215	76.2	*255*	*90.4*	27	9.6	0	0.0	282	100.0
Dibrugarh	352	0.1	66	37.9	*101*	*58.0*	8	4.6	653	7.4	174	100.0

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

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Prior Tmt. Only	145	5.1	45	2.8	63	6.5	29	2.7	2	0.6
Prior & Tmt. at RI	54	1.9	17	1.1	3	0.3	22	2.0	2	0.6
Tmt. Only at RI	1227	42.8	657	41.3	218	22.6	756	69.1	243	67.5
`No' Treatment	1444	50.3	873	54.8	679	70.5	287	26.2	113	31.4
Total Patients	**2870**	**100.0**	**1592**	**100.0**	**963**	**100.0**	**1094**	**100.0**	**360**	**100.0**
FEMALES										
Prior Tmt. Only	70	4.7	13	1.1	32	6.3	6	2.0	0	0.0
Prior & Tmt. at RI	29	2.0	10	0.8	2	0.4	5	1.7	1	0.6
Tmt. Only at RI	642	43.3	540	45.4	110	21.6	220	75.1	113	64.6
`No' Treatment	742	50.0	627	52.7	366	71.8	62	21.2	61	34.9
Total Patients	**1483**	**100.0**	**1190**	**100.0**	**510**	**100.0**	**293**	**100.0**	**175**	**100.0**

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

Males

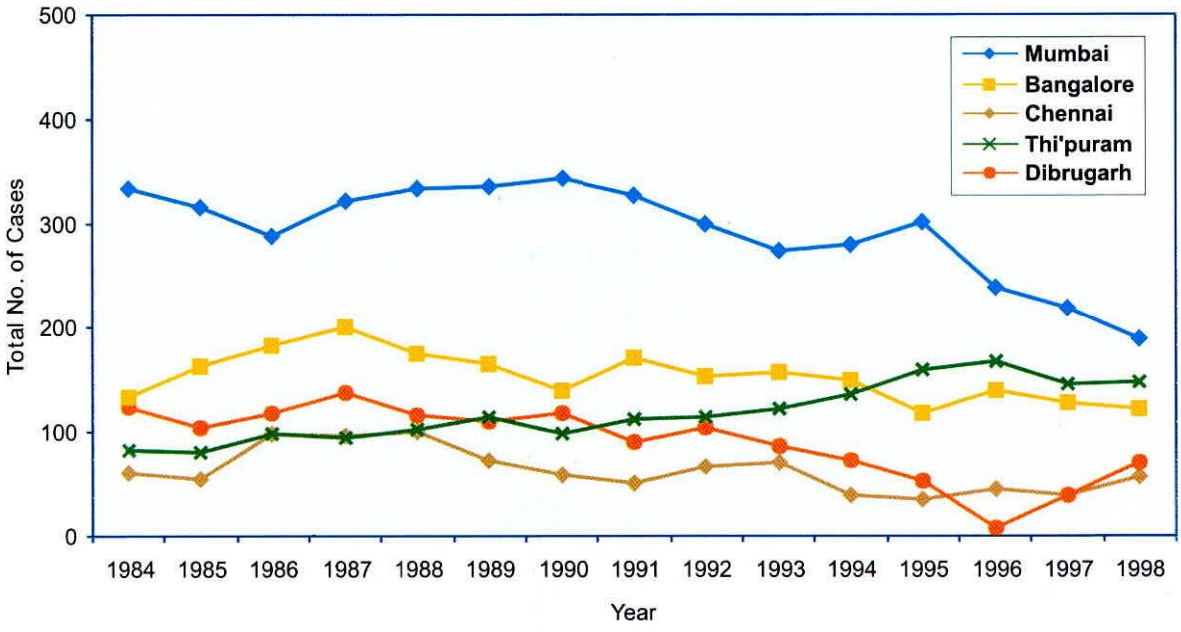
Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**1227**	**100.0**	**657**	**100.0**	**218**	**100.0**	**756**	**100.0**	**243**	**100.0**
Specific Treatments										
Surgery(S)	388	31.6	95	14.5	15	6.9	11	1.5	1	0.4
Radiotherapy(R)	385	31.4	498	75.8	164	75.2	602	79.6	226	93.0
Chemotherapy(C)	149	12.1	10	1.5	0	0.0	30	4.0	8	3.3
S + R	35	2.9	20	3.0	10	4.6	3	0.4	1	0.4
S + C	95	7.7	15	2.3	0	0.0	3	0.4	1	0.4
R + C	159	13.0	14	2.1	29	13.3	100	13.2	6	2.5
S + R + C	16	1.3	3	0.5	0	0.0	1	0.1	0	0.0
Others	0	0.0	2	0.3	0	0.0	6	0.8	0	0.0
Modality of therapy										
Single	922	75.1	603	91.8	179	82.1	643	85.1	235	96.7
Combination	305	24.9	52	7.9	39	17.9	107	14.2	8	3.3
Type of Any Treatment										
Any Surgery	534	43.5	134	20.4	25	11.5	19	2.5	3	1.2
Any R	595	48.5	535	81.4	203	93.1	706	93.4	233	95.9
Any C	419	34.1	43	6.5	29	13.3	134	17.7	15	6.2

Females

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**642**	**100.0**	**540**	**100.0**	**110**	**100.0**	**220**	**100.0**	**113**	**100.0**
Specific Treatments										
Surgery(S)	229	35.7	101	18.7	13	11.8	2	0.9	0	0.0
Radiotherapy(R)	201	31.3	375	69.4	83	75.5	176	80.0	106	93.8
Chemotherapy(C)	73	11.4	4	0.7	1	0.9	7	3.2	3	2.7
S + R	21	3.3	30	5.6	1	0.9	0	0.0	0	0.0
S + C	49	7.6	19	3.5	0	0.0	1	0.5	1	0.9
R + C	61	9.5	7	1.3	11	10.0	32	14.5	3	2.7
S + R + C	8	1.2	4	0.7	1	0.9	0	0.0	0	0.0
Others	0	0.0	0	0.0	0	0.0	2	0.9	0	0.0
Modality of therapy										
Single	503	78.3	480	88.9	97	88.2	185	84.1	109	96.5
Combination	139	21.7	60	11.1	13	11.8	33	15.0	4	3.5
Type of Any Treatment										
Any Surgery	307	47.8	154	28.5	15	13.6	3	1.4	1	0.9
Any R	291	45.3	416	77.0	96	87.3	208	94.5	109	96.5
Any C	191	29.8	34	6.3	13	11.8	40	18.2	7	6.2

Fig. 10.3: Trends in actual number of patients who received Treatment Only at Reporting Institution - Oesophageal Cancer

Males



Females

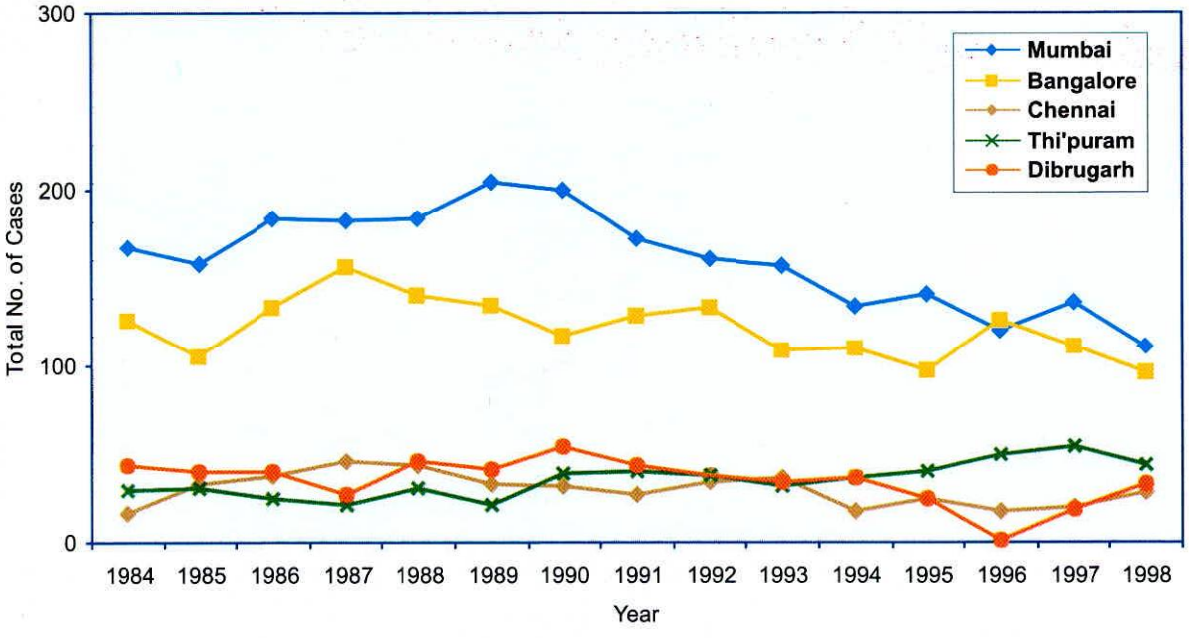
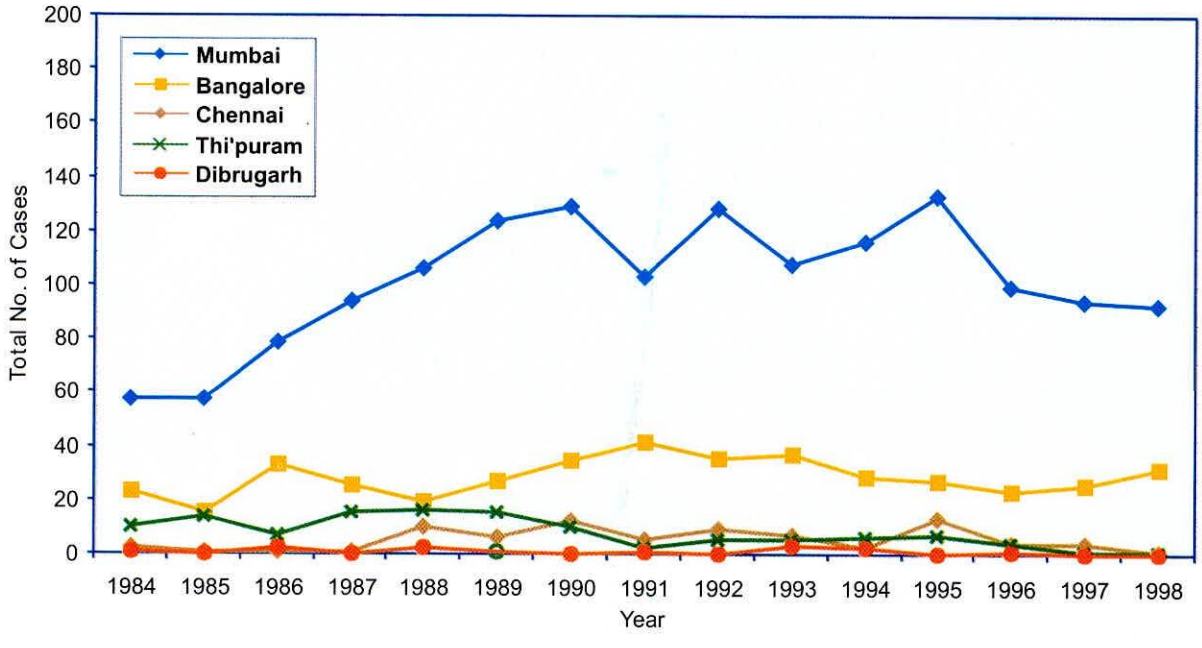


Fig. 10.4: Trends in actual number of patients who received Any Surgery (Treated only at RI) - Oesophageal Cancer

Males



Females

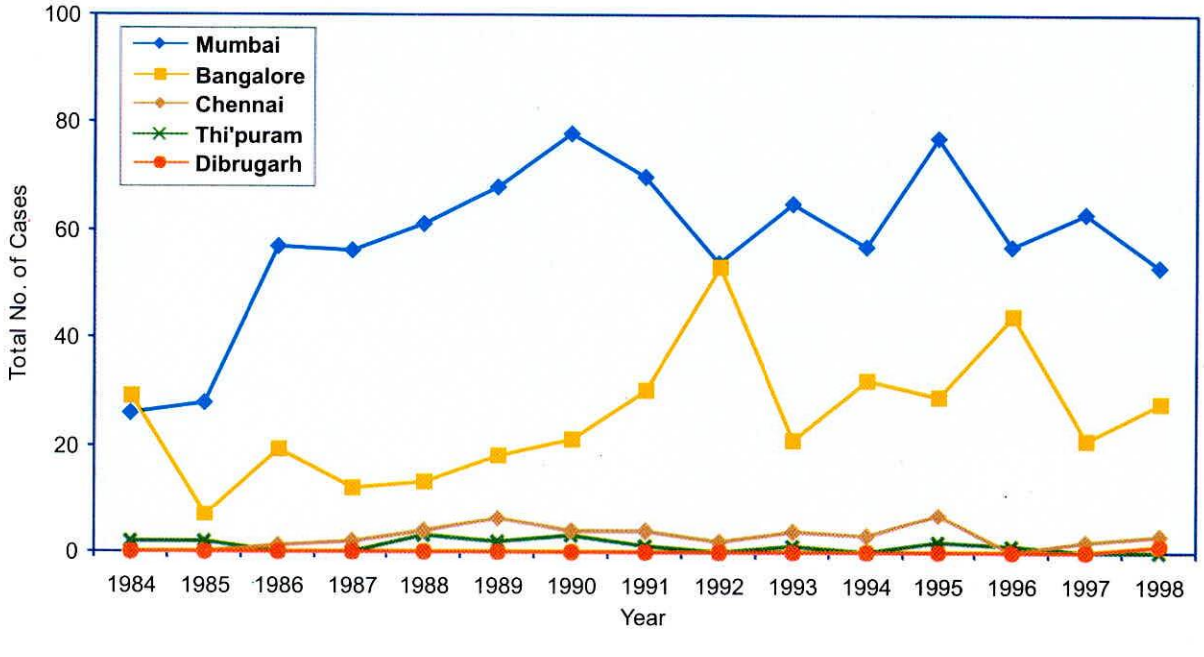
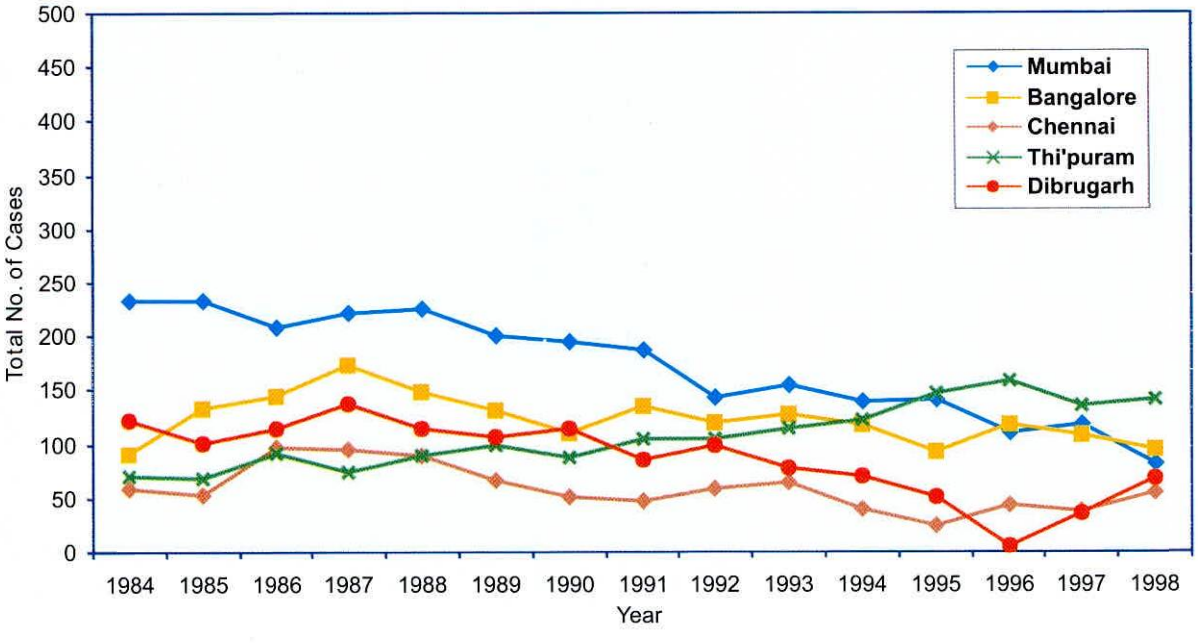


Fig. 10.5: Trends in actual number of patients who received Any Radiotherapy (Treated only at RI) - Oesophageal Cancer

Males



Females

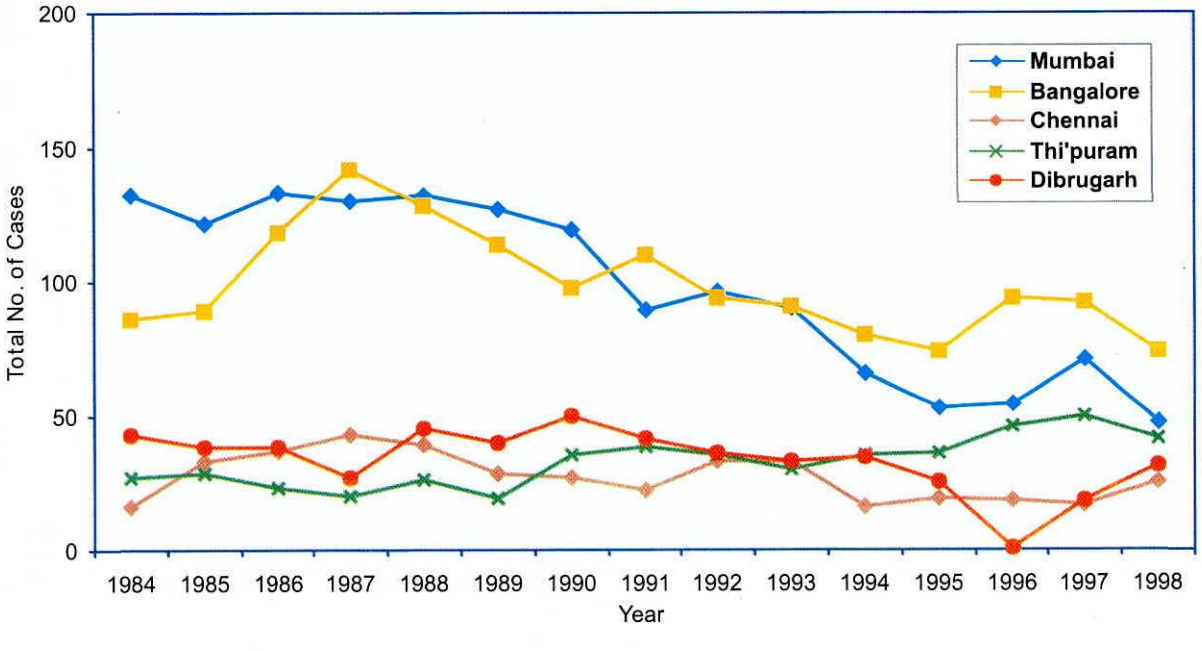
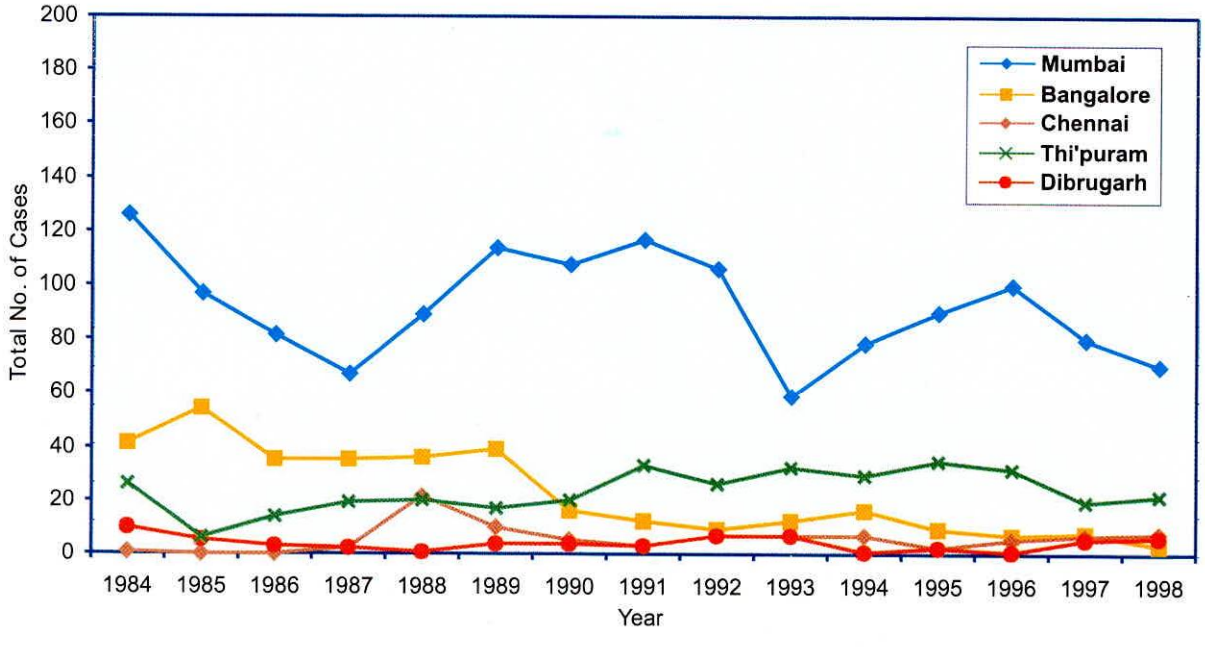
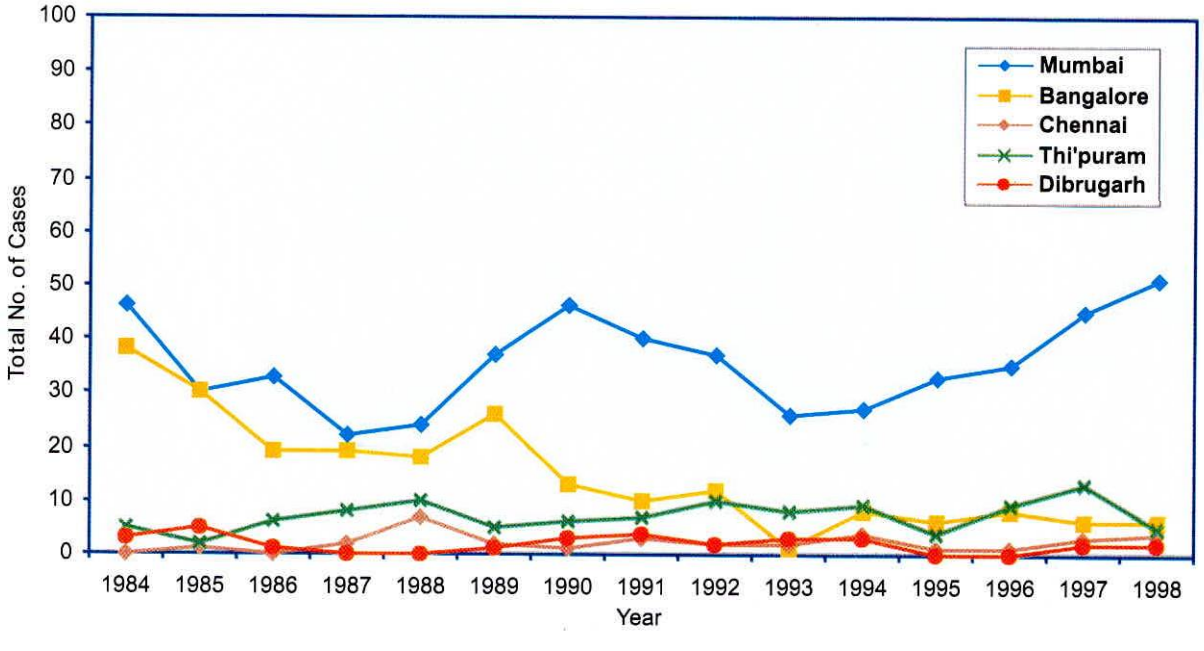


Fig.10.6: Trends in actual number of patients who received Any Chemotherapy (Treated only at RI) - Oesophageal Cancer

Males



Females



Chapter 11

LUNG (ICD-9: 162)

The total number, relative proportion and rank of cancer lung in males for the years 1994-98 is given in Table 11.1.

Figure 11.1 provides a picture of the trends in actual numbers of lung cancers in males registered in the five HBCRs. A rise in the numbers of this cancer is seen in Mumbai and Thiruvananthapuram.

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

Registry	Total	#	%	R
Mumbai	43006	3150	7.3	3
Bangalore	15926	910	5.7	4
Chennai	13413	897	6.7	6
Thi'puram	18978	2505	13.2	1
Dibrugarh	2645	121	4.6	7

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

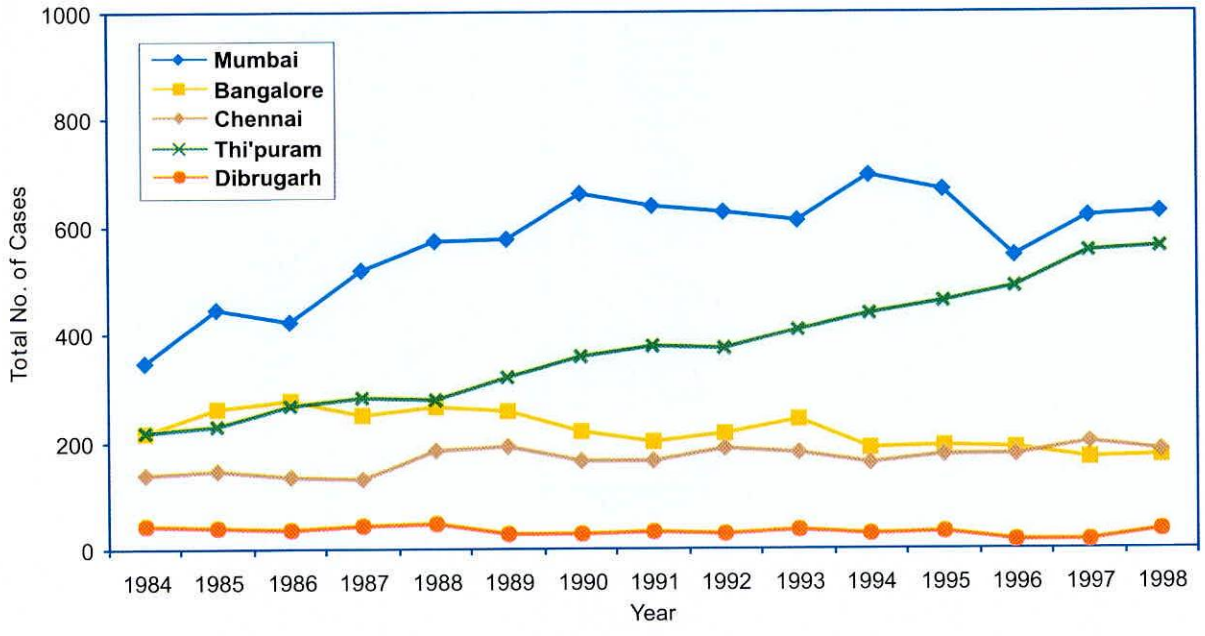


Table 11.2 and Figure 11.2 give the five-year age distribution. There seems to be little difference in the curves among the registries.

Table 11.2: Number(#) and Relative Proportion(%) of Lung cancers according to five year age group - 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	0.2	0	0.0	1	0.0	0	0.0
20-24	12	0.4	3	0.3	3	0.3	4	0.2	1	0.8
25-29	24	0.8	4	0.4	6	0.7	5	0.2	1	0.8
30-34	58	1.8	10	1.1	12	1.3	18	0.7	1	0.8
35-39	111	3.5	22	2.4	29	3.2	46	1.8	3	2.5
40-44	200	6.3	50	5.5	58	6.5	107	4.3	2	1.7
45-49	302	9.6	90	9.9	84	9.4	218	8.7	17	14.0
50-54	440	13.9	141	15.5	150	16.7	332	13.3	14	11.6
55-59	551	17.4	150	16.5	169	18.8	471	18.8	24	19.8
60-64	518	16.4	174	19.1	200	22.3	477	19.0	18	14.9
65-69	480	15.2	125	13.7	106	11.8	428	17.1	16	13.2
70-74	303	9.6	82	9.0	49	5.5	254	10.1	18	14.9
75+	152	4.8	57	6.3	31	3.5	144	5.7	6	5.0
ANS	3	0.1	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**3158**	**100.0**	**910**	**100.0**	**897**	**100.0**	**2505**	**100.0**	**121**	**100.0**

Fig. 11.2: Five year age group distribution - Lung Cancer - Males

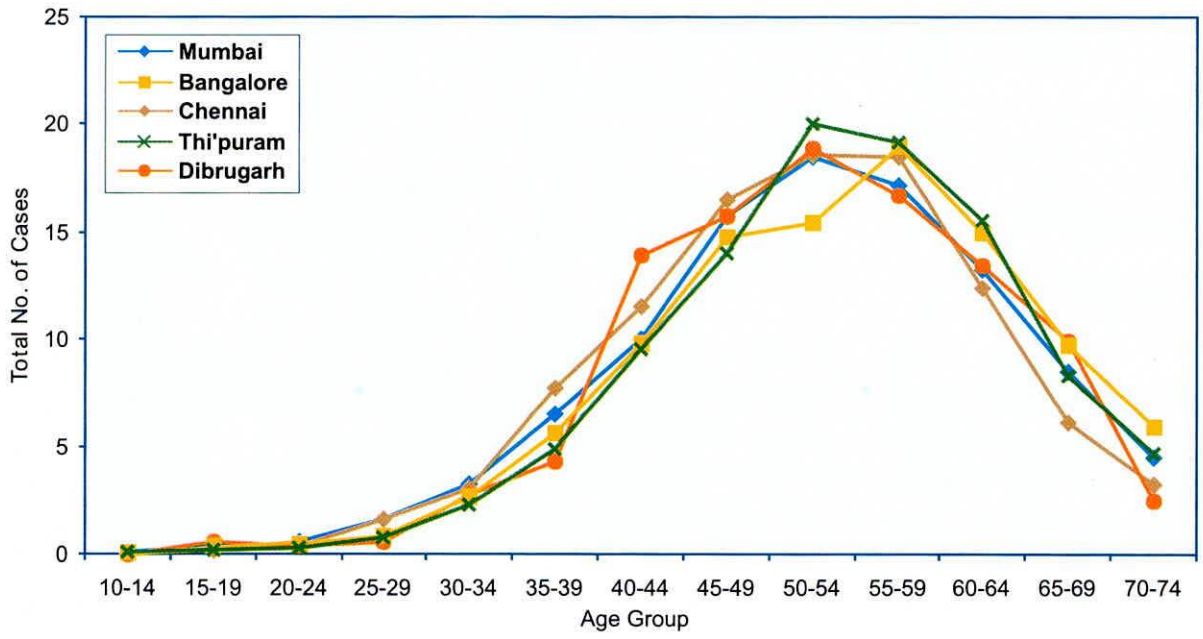


Table 11.3 shows the number and relative proportion of microscopic diagnosis for 1994-98. Figure 11.3 shows the trends in the proportion of cytological diagnosis.

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

Registry	Microscopic		Clinical		X-ray		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	2783	88.1	3	0.1	43	1.4	329	10.4	3158	100.0
Bangalore	802	88.1	22	2.4	42	4.6	44	4.8	910	100.0
Chennai	683	76.1	22	2.5	164	18.3	28	3.1	897	100.0
Thi'puram	1925	76.8	26	1.0	321	12.8	233	9.3	2505	100.0
Dibrugarh	100	82.6	0	0.0	20	16.5	1	0.8	121	100.0

Fig. 11.3: Trends in Proportion of Cytological Diagnosis - Lung Cancer - Males

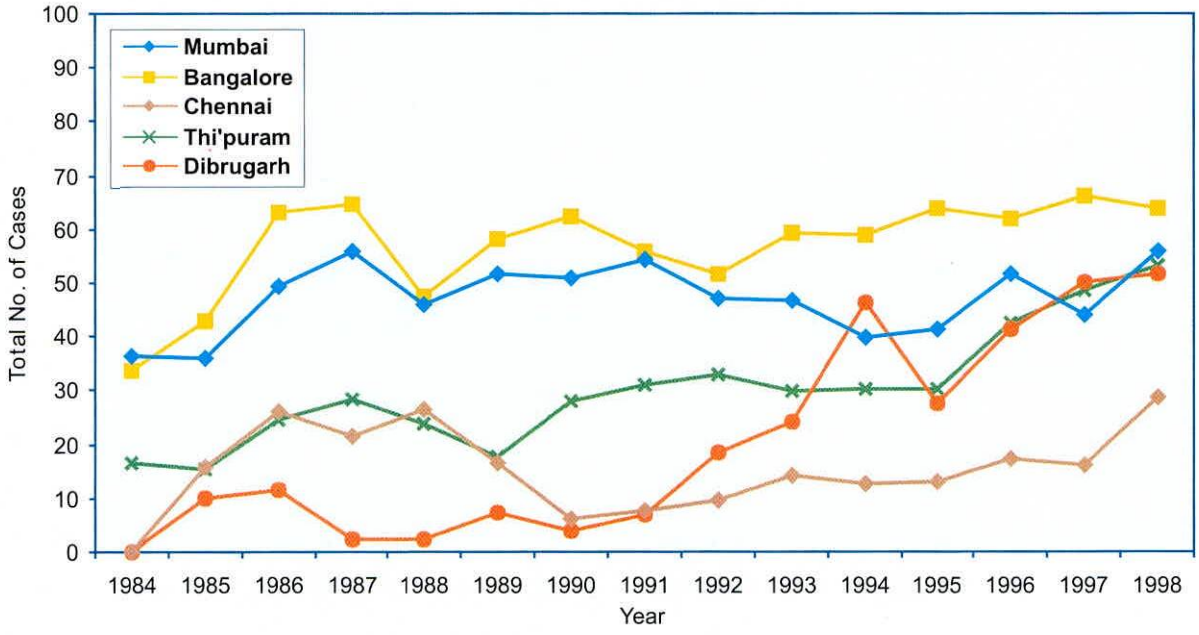


Table 11.4 gives the number and relative proportion of clinical extent of disease in those who have not received previous treatment before registration at reporting institution.

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

While Table 11.6 gives the specific types of treatment received by patients, during 1994-98, the Figures 11.4 to 11.7 give the trends in actual numbers of patient who received any form of overall treatment and the main types of treatment (surgery, radiotherapy, chemotherapy) from 1984 to 1998.

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

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Mumbai	1132	39.0	270	9.3	*1402*	*48.3*	1471	50.7	30	1.0	2903	100.0
Bangalore	76	8.8	514	59.6	*590*	*68.4*	256	29.7	16	1.9	862	100.0
Chennai	1	0.1	580	73.3	*581*	*73.5*	210	26.5	0	0.0	791	100.0
Thi'puram	300	12.6	926	39.0	*1226*	*51.7*	1144	48.2	3	0.1	2373	100.0
Dibrugarh	0 0	0	4	3.3	*4*	*3.3*	27	22.5	89	74.2	120	100.0

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

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	193	6.1	34	3.7	98	10.9	64	2.6	0	0.0
Prior & Tmt. at RI	62	2.0	14	1.5	8	0.9	68	2.7	1	0.8
Tmt. Only at RI	1139	36.1	259	28.5	262	29.2	1515	60.5	87	71.9
`No' Treatment	1764	55.9	603	66.3	529	59.0	858	34.3	33	27.3
Total Patients	3158	100.0	910	100.0	897	100.0	2505	100.0	121	100.0

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

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**1139**	**100.0**	**259**	**100.0**	**262**	**100.0**	**1515**	**100.0**	**87**	**100.0**
Specific Treatments										
Surgery(S)	198	17.4	4	1.5	7	2.7	23	1.5	0	0.0
Radiotherapy(R)	369	32.4	158	61.0	42	16.0	1062	70.1	25	28.7
Chemotherapy(C)	268	23.5	67	25.9	164	62.6	217	14.3	56	64.4
S + R	56	4.9	4	1.5	1	0.4	13	0.9	0	0.0
S + C	39	3.4	1	0.4	1	0.4	2	0.1	1	1.1
R + C	197	17.3	24	9.3	47	17.9	138	9.1	5	5.7
S + R + C	12	1.1	1	0.4	0	0.0	1	0.1	0	0.0
Others	0	0.0	0	0.0	0	0.0	59	3.9	0	0.0
Modality of therapy										
Single	835	73.3	229	88.4	213	81.3	1302	85.9	81	93.1
Combination	304	26.7	30	11.6	49	18.7	154	10.2	6	6.9
Type of Any Treatment*										
Any Surgery	305	26.8	10	3.9	9	3.4	39	2.6	1	1.1
Any R	634	55.7	187	72.2	90	34.4	1214	80.1	30	34.5
Any C	516	45.3	93	35.9	212	80.9	358	23.6	62	71.3

Fig. 11.4: Trends in actual number of patients who received Treatment Only at Reporting Institution - Lung Cancer - Males

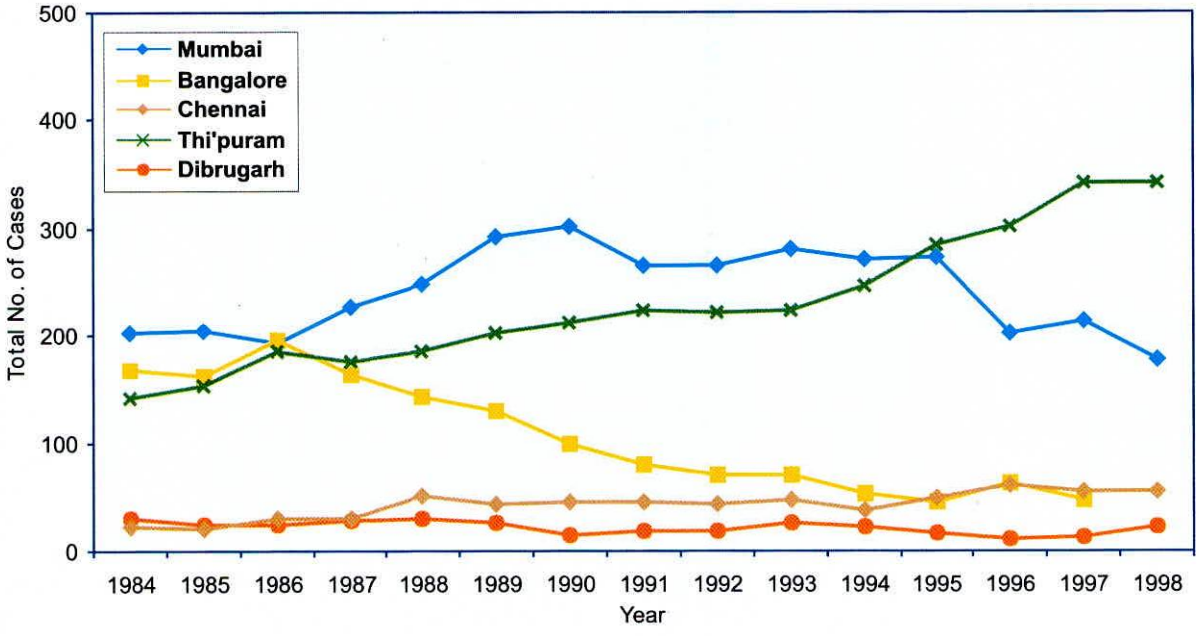


Fig. 11.5: Trends in actual number of patients who received Any Surgery (Treated only at RI) - Lung Cancer - Males

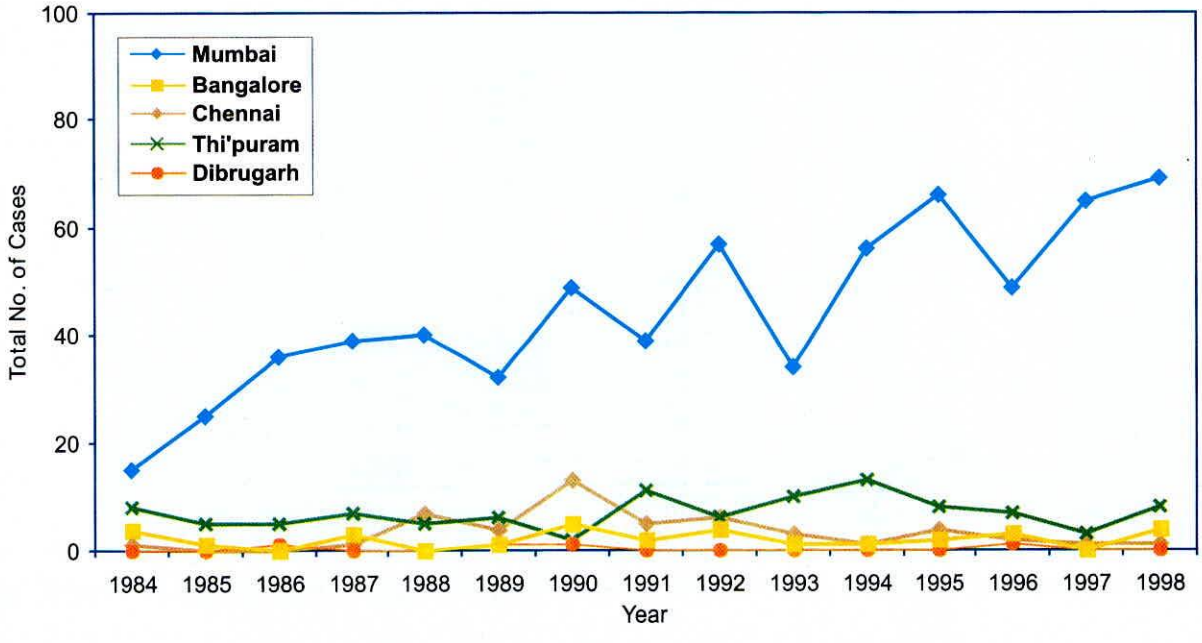


Fig. 11.6: Trends in actual number of patients who received Any Radiotherapy (Treated only at RI) - Lung Cancer - Males

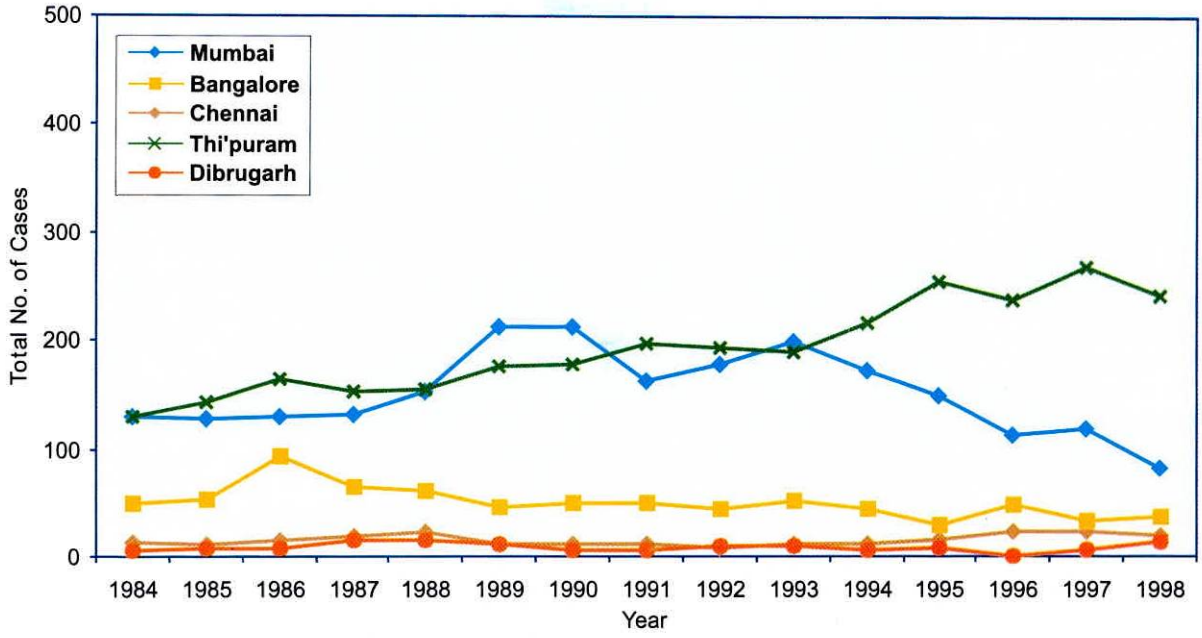
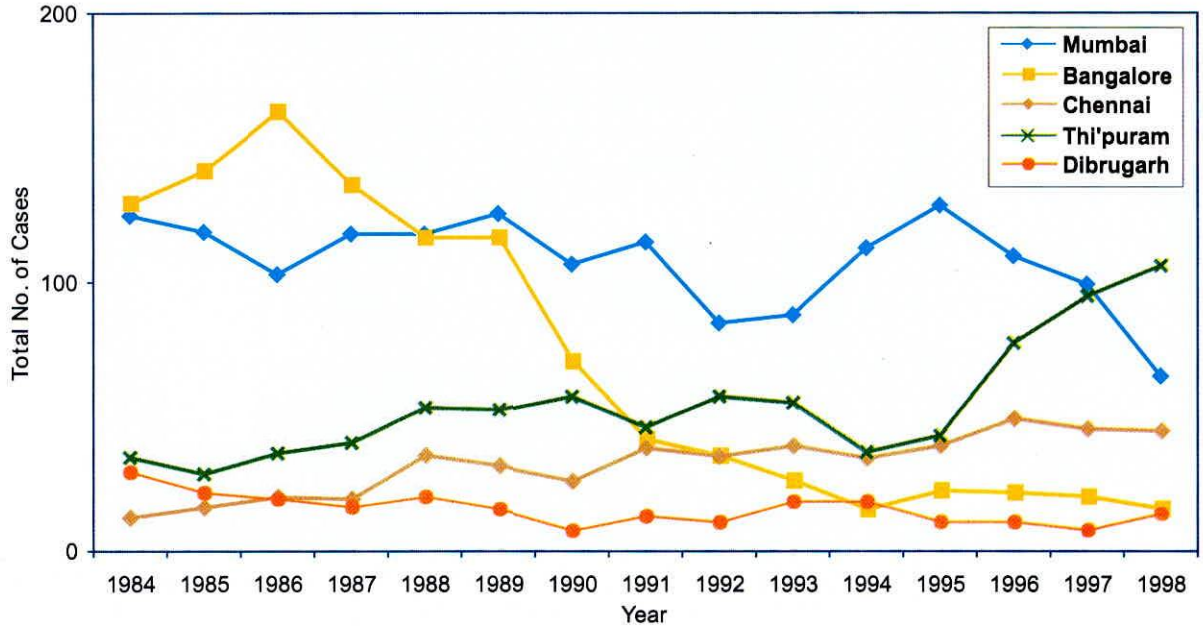


Fig. 11.7: Trends in actual number of patients who received Any Chemotherapy (Treated only at RI) - Lung Cancer - Males



Chapter 12

FEMALE BREAST (ICD-9: 174)

The total number, relative proportion and rank of cancer of the female breast for the years 1994-98 is given in Table 12.1.

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

Registry	Total	#	%	R
Mumbai	33722	8849	26.2	1
Bangalore	18552	2304	12.4	3
Chennai	15581	2808	18.0	2
Thi'puram	16648	4236	25.4	1
Dibrugarh	1498	188	12.6	2

Figure 12.1 provides a picture of the trends in actual numbers of female breast cancers registered in the five HBCRs. A rise in the numbers of this cancer is seen in Mumbai and Thiruvananthapuram.

Table 12.2 and Figure 12.2 give the five-year age distribution. The curve for Mumbai shows that the rise in numbers commences at an earlier age and peaks also at an earlier decade than in other registries.

Table 12.3 shows the number and relative proportion of microscopic diagnosis for 1994-98.

Table 12.4 indicates the number and relative proportion of clinical extent of disease in those who have not received previous treatment before registration at reporting institution.

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

While Table 12.6 gives the specific types of treatment received by patients, during 1994-98, the Figures 12.3 to 12.6 give the trends in actual numbers of patient who received any form of overall treatment and the main types of treatment (surgery, radiotherapy, chemotherapy) from 1984 to 1998.

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

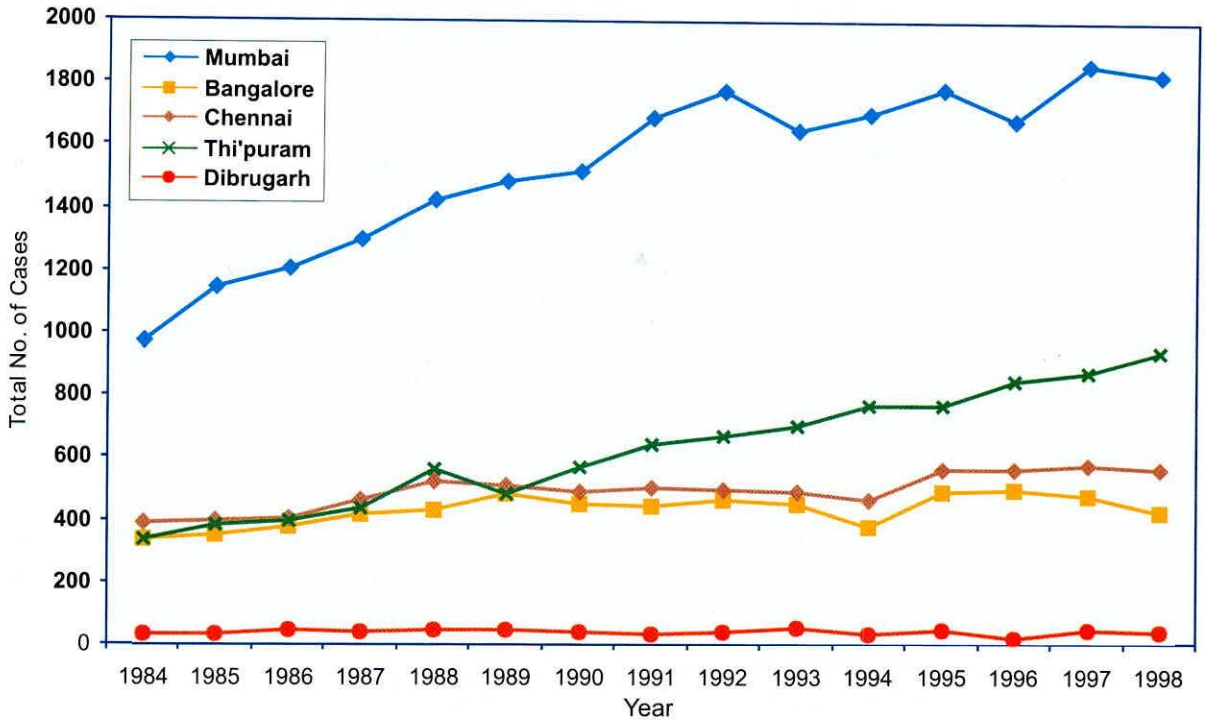


Table 12.2: Number(#) and Relative Proportion(%) of female breast cancers according to five year age group

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	1	0.0	0	0.0
15-19	5	0.1	5	0.2	1	0.0	2	0.0	0	0.0
20-24	49	0.6	21	0.9	22	0.8	24	0.6	2	1.1
25-29	232	2.6	72	3.1	80	2.8	112	2.6	16	8.5
30-34	617	7.0	152	6.6	175	6.2	297	7.0	21	11.2
35-39	1137	12.8	275	11.9	325	11.6	545	12.9	29	15.4
40-44	1448	16.4	360	15.6	445	15.8	665	15.7	37	19.7
45-49	1516	17.1	392	17.0	500	17.8	761	18.0	26	13.8
50-54	1244	14.1	339	14.7	380	13.5	559	13.2	26	13.8
55-59	910	10.3	232	10.1	324	11.5	467	11.0	8	4.3
60-64	760	8.6	194	8.4	234	8.3	339	8.0	13	6.9
65-69	512	5.8	121	5.3	172	6.1	247	5.8	5	2.7
70-74	248	2.8	90	3.9	92	3.3	129	3.0	2	1.1
75+	150	1.7	51	2.2	58	2.1	88	2.1	3	1.6
ANS	21	0.2	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**8849**	**100.0**	**2304**	**100.0**	**2808**	**100.0**	**4236**	**100.0**	**188**	**100.0**

Fig. 12.2: Five year age group distribution - Female Breast

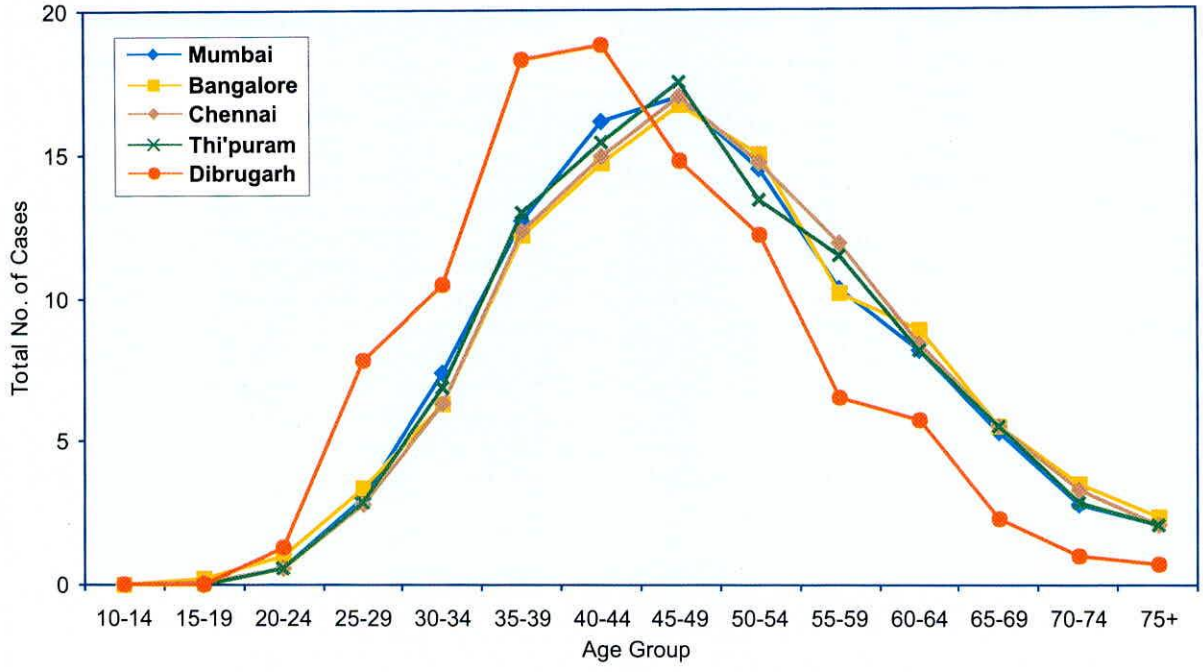


Table 12.3: Number(#) and Relative Proportion(%) of female breast cancers based on different methods of diagnosis

Registry	Microscopic		Clinical		X-ray		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	7519	85.0	20	0.2	0	0.0	1310	14.8	8849	100.0
Bangalore	2171	94.2	44	1.9	2	0.1	87	3.8	2304	100.0
Chennai	2563	91.3	235	8.4	1	0.0	9	0.3	2808	100.0
Thi'puram	4152	98.0	63	1.5	7	0.2	14	0.3	4236	100.0
Dibrugarh	186	98.9	0	0.0	0	0.0	2	1.1	188	100.0

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

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Mumbai	1473	36.0	1998	48.8	3471	84.8	561	13.7	61	1.5	4093	100.0
Bangalore	127	10.5	926	76.2	1053	86.7	156	12.8	6	0.5	1215	100.0
Chennai	17	1.1	1253	78.4	1270	79.4	329	20.6	0	0.0	1599	100.0
Thi'puram	113	7.7	1138	77.6	1251	85.3	214	14.6	2	0.1	1467	100.0
Dibrugarh	11	6.5	144	85.2	155	91.7	11	6.5	3	1.8	169	100.0

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

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	1858	21.0	498	21.6	505	18.0	438	10.3	5	2.7
Prior & Tmt. at RI	2898	32.7	591	25.7	704	25.1	2331	55.0	14	7.4
Tmt. Only at RI	3067	34.7	731	31.7	1152	41.0	1240	29.3	153	81.4
`No' Treatment	1026	11.6	484	21.0	447	15.9	227	5.4	16	8.5
Total Patients	**8849**	**100.0**	**2304**	**100.0**	**2808**	**100.0**	**4236**	**100.0**	**188**	**100.0**

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

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**3067**	**100.0**	**731**	**100.0**	**1152**	**100.0**	**1240**	**100.0**	**153**	**100.0**
Specific Treatments										
Surgery(S)	594	19.4	46	6.3	4	0.3	166	13.4	72	47.1
Radiotherapy(R)	107	3.5	12	1.6	4	0.3	35	2.8	16	10.5
Chemotherapy(C)	151	4.9	86	11.8	71	6.2	90	7.3	1	0.7
S + R	165	5.4	110	15.0	12	1.0	190	15.3	56	36.6
S + C	558	18.2	73	10.0	2	0.2	64	5.2	7	4.6
R + C	83	2.7	16	2.2	111	9.6	79	6.4	0	0.0
S + R + C	223	7.3	182	24.9	18	1.6	212	17.1	1	0.7
Others	1186	38.7	206	28.2	930	80.7	404	32.6	0	0.0
Modality of therapy										
Single	852	27.8	144	19.7	79	6.9	291	23.5	89	58.2
Combination	1029	33.6	381	52.1	143	12.4	545	44.0	64	41.8
Type of Any Treatment*										
Any Surgery	2590	84.4	591	80.8	621	53.9	913	73.6	136	88.9
Any R	960	31.3	472	64.6	959	83.2	790	63.7	73	47.7
Any C	1593	51.9	483	66.1	1033	89.7	549	44.3	9	5.9

Fig. 12.3: Trends in actual number of patients who received Treatment Only at Reporting Institution - Female Breast

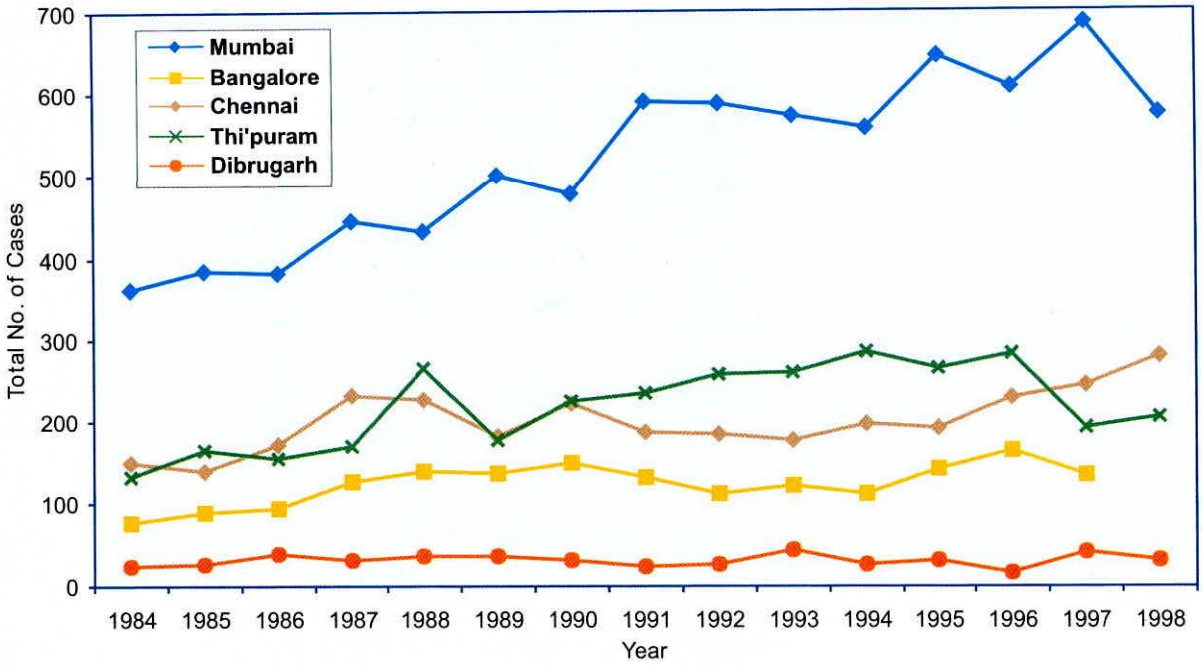


Fig. 12.4: Trends in actual number of patients who received Any Surgery (Treated only at RI) - Female Breast

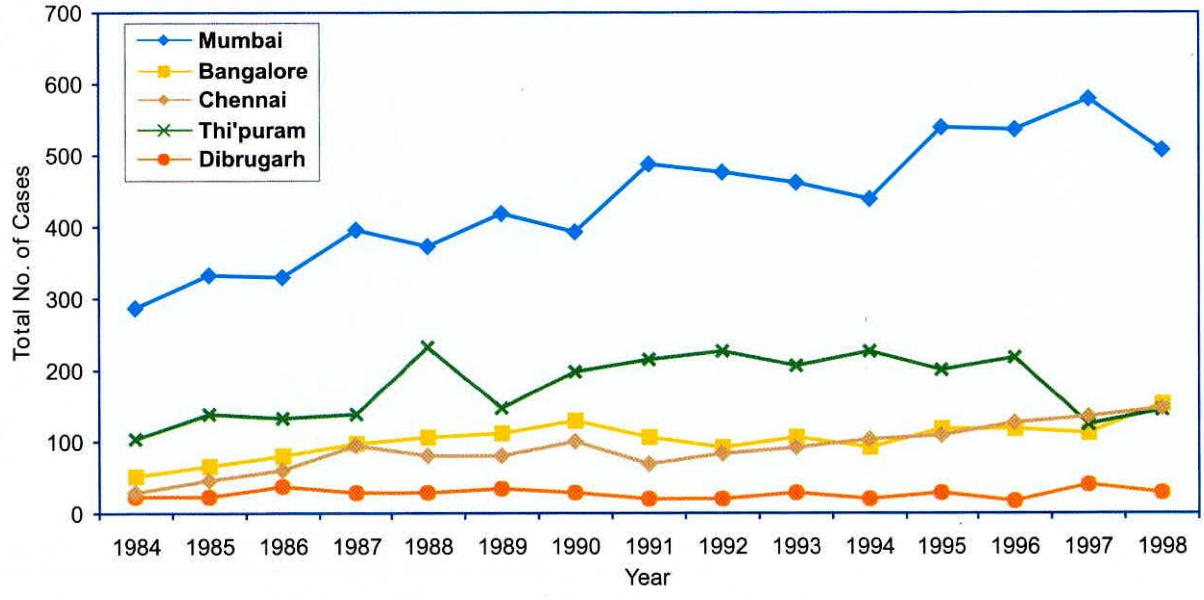


Fig. 12.5: Trends in actual number of patients who received Any Radiotherapy (Treated only at RI) - Female Breast

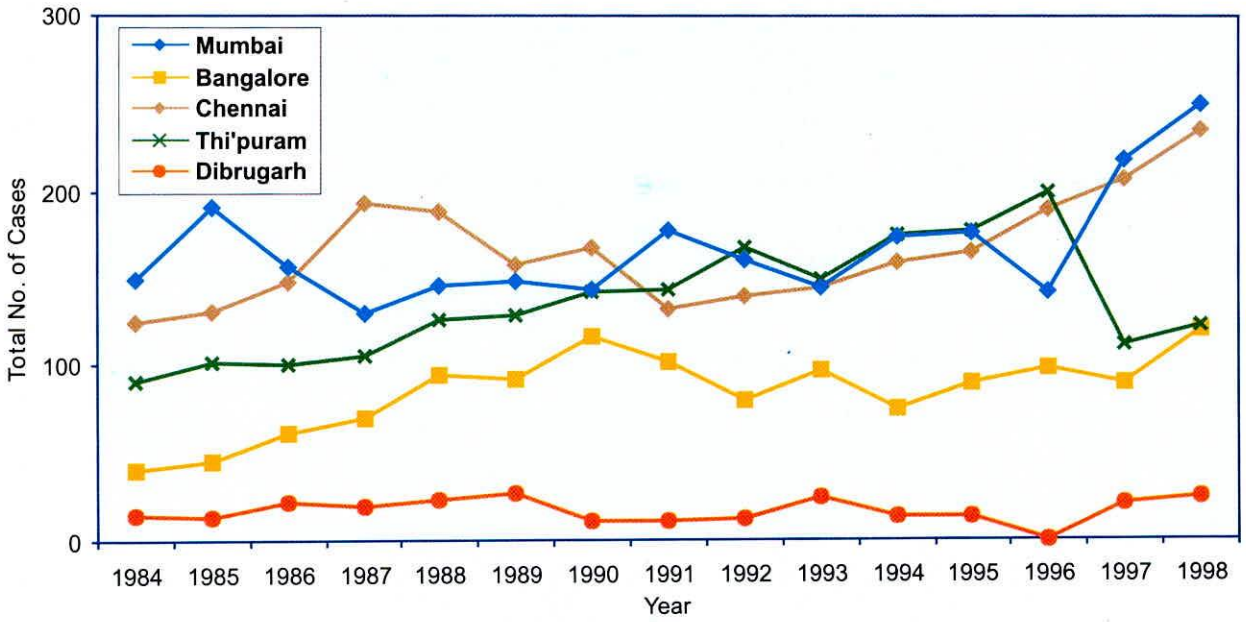
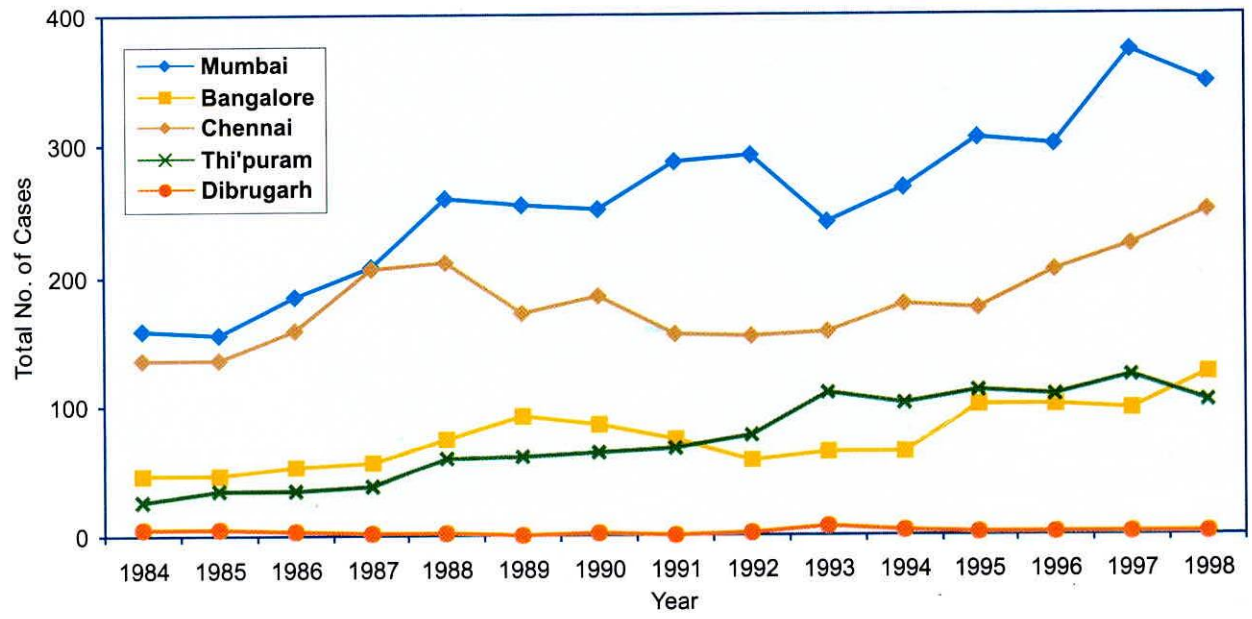


Fig. 12.6: Trends in actual number of patients who received Any Chemotherapy (Treated only at RI) - Female Breast



Chapter 13

CERVIX (ICD-9: 180)

The total number, relative proportion and rank of cancer of the cervix for the years 1994-98 is given in Table 13.1.

Table 13.1: Number (#), Relative Proportion (%) and Rank(R) of cancers of the cervix

Registry	Total	#	%	R
Mumbai	33722	7401	21.9	2
Bangalore	18552	6546	35.3	1
Chennai	15581	6001	38.5	1
Thi'puram	16648	2642	15.9	2
Dibrugarh	1498	204	13.6	1

Figure 13.1 provides a picture of the trends in actual numbers of cervix cancers registered in the five HBCRs. A decline in the numbers of this cancer is seen in almost all registries.

Table 13.2 and Figure 13.2 give the five-year age distribution. The curve for Mumbai shows that the rise in numbers commences at an earlier age and peaks also at an earlier age whereas in Thiruvananthapuram the rise starts a decade later and peaks also a decade later.

Table 13.3 shows the number and relative proportion of microscopic diagnosis for 1994-98.

Table 13.4 indicates the number and relative proportion of clinical extent of disease in those who have not received previous treatment before registration at reporting institution.

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

While Table 13.6 gives the specific types of treatment received by patients, during 1994-98, the Figures 13.3 to 13.6 give the trends in actual number of patients who received any form of overall treatment and the main types of treatment (surgery, radiotherapy, chemotherapy) from 1984 to 1998.

Fig. 13.1 Trends in Actual Numbers - Cancer Cervix

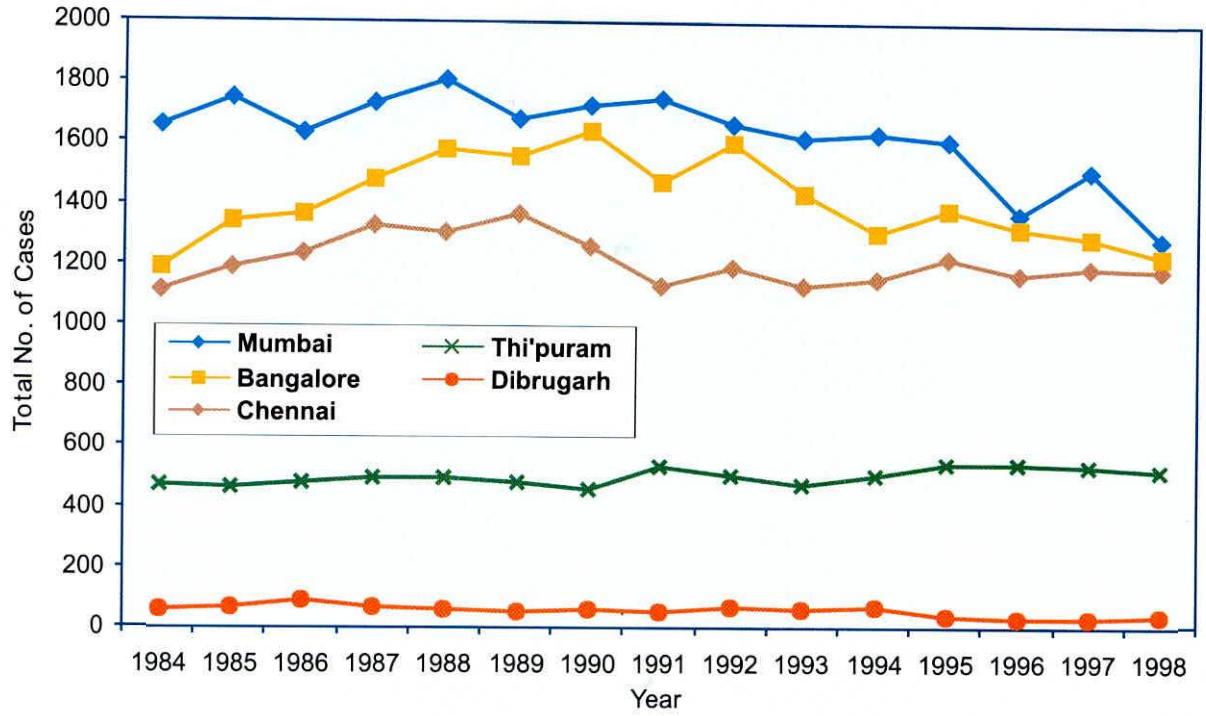


Table 13.2: Number(#) and Relative Proportion(%) of cervical cancers according to five year age group

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	13	0.2	27	0.4	22	0.4	0	0.0	0	0.0
25-29	107	1.4	134	2.0	103	1.7	10	0.4	9	4.4
30-34	368	5.0	331	5.1	263	4.4	48	1.8	10	4.9
35-39	764	10.3	710	10.8	688	11.5	160	6.1	33	16.2
40-44	1034	14.0	989	15.1	858	14.3	233	8.8	35	17.2
45-49	1284	17.3	1175	17.9	1132	18.9	388	14.7	33	16.2
50-54	1162	15.7	1101	16.8	1011	16.8	358	13.6	26	12.7
55-59	947	12.8	702	10.7	753	12.5	444	16.8	23	11.3
60-64	848	11.5	723	11.0	621	10.3	373	14.1	22	10.8
65-69	490	6.6	362	5.5	323	5.4	319	12.1	6	2.9
70-74	246	3.3	182	2.8	146	2.4	174	6.6	5	2.5
75+	126	1.7	110	1.7	81	1.3	135	5.1	2	1.0
ANS	11	0.1	0	0.0	0	0.0	0	0.0	0	0.0
All Ages	**7401**	**100.0**	**6546**	**100.0**	**6001**	**100.0**	**2642**	**100.0**	**204**	**100.0**

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

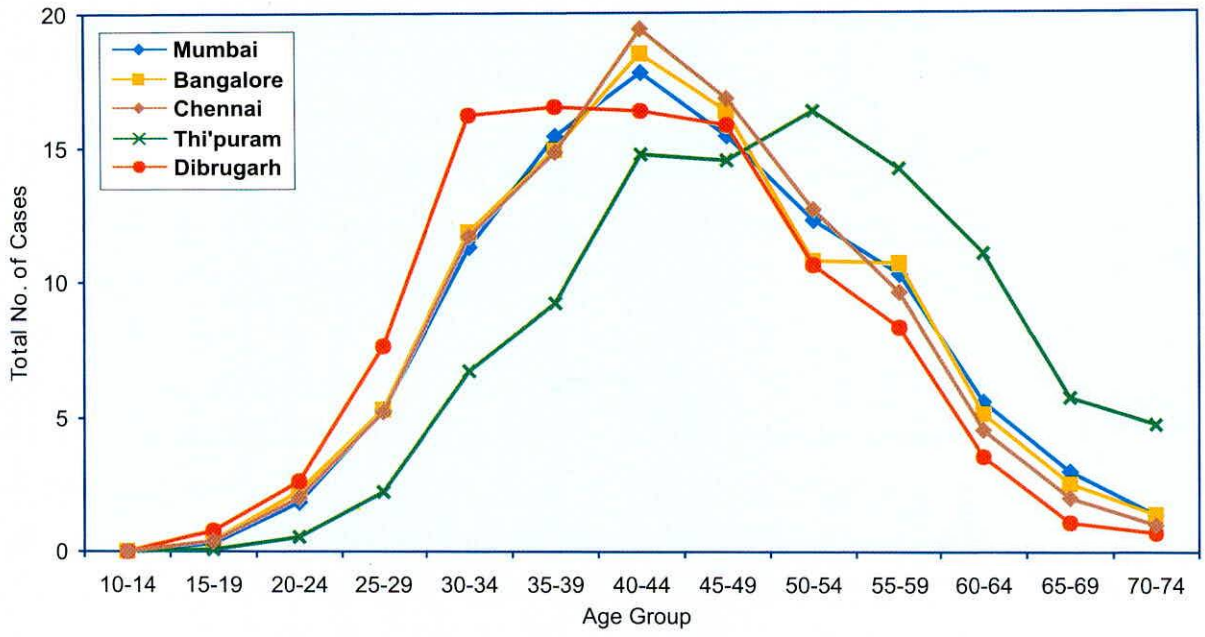


Table 13.3: Number(#) and Relative Proportion(%) of cervical cancers based on different methods of diagnosis

Registry	Microscopic		Clinical		X-ray		Others		Total	
	#	%	#	%	#	%	#	%	#	%
Mumbai	6963	94.1	26	0.4	0	0.0	412	5.6	7401	100.0
Bangalore	6309	96.4	148	2.3	0	0.0	89	1.4	6546	100.0
Chennai	4987	83.1	1011	16.8	0	0.0	3	0.0	6001	100.0
Thi'puram	2444	92.5	178	6.7	1	0.0	19	0.7	2642	100.0
Dibrugarh	200	98.0	3	1.5	0	0.0	1	0.5	204	100.0

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

Registry	Localised (L)		Regional (R)		L + R		Distant		Others		All Stages	
	#	%	#	%	#	%	#	%	#	%	#	%
Mumbai	707	11.6	4983	81.8	5690	93.5	317	5.2	81	1.3	6088	100.0
Bangalore	37	0.6	5537	91.8	5574	92.4	442	7.3	14	0.2	6030	100.0
Chennai	253	4.7	4879	90.6	5132	95.3	252	4.7	0	0.0	5384	100.0
Thi'puram	187	8.2	1998	88.0	2185	96.2	85	3.7	1	0.0	2271	100.0
Dibrugarh	26	13.1	147	73.9	173	86.9	25	12.6	1	0.5	199	100.0

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

Treatment Group	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Prior Tmt. Only	775	10.5	241	3.7	552	9.2	78	3.0	3	1.5
Prior & Tmt. at RI	538	7.3	275	4.2	65	1.1	293	11.1	2	1.0
Tmt. Only at RI	3339	45.1	3696	56.5	2592	43.2	1964	74.3	135	66.2
`No' Treatment	2749	37.1	2334	35.7	2792	46.5	307	11.6	64	31.4
Total Patients	**7401**	**100.0**	**6546**	**100.0**	**6001**	**100.0**	**2642**	**100.0**	**204**	**100.0**

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

Type of Treatment	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Total Patients	**3339**	**100.0**	**3696**	**100.0**	**2592**	**100.0**	**1964**	**100.0**	**135**	**100.0**
Specific Treatments										
Surgery(S)	209	6.3	23	0.6	23	0.9	21	1.1	26	19.3
Radiotherapy(R)	2899	86.8	3401	92.0	2299	88.7	1722	87.7	88	65.2
Chemotherapy(C)	3	0.1	12	0.3	4	0.2	10	0.5	3	2.2
S + R	184	5.5	166	4.5	181	7.0	74	3.8	12	8.9
S + C	5	0.1	11	0.3	1	0.0	0	0.0	3	2.2
R + C	36	1.1	41	1.1	81	3.1	123	6.3	3	2.2
S + R + C	3	0.1	40	1.1	2	0.1	7	0.4	0	0.0
Others	0	0.0	2	0.1	1	0.0	7	0.4	0	0.0
Modality of therapy										
Single	3111	93.2	3436	93.0	2326	89.7	1753	89.3	117	86.7
Combination	228	6.8	258	7.0	265	10.2	204	10.4	18	13.3
Type of Any Treatment										
Any Surgery	401	12.0	241	6.5	207	8.0	104	5.3	41	30.4
Any R	3122	93.5	3649	98.7	2563	98.9	1928	98.2	103	76.3
Any C	47	1.4	104	2.8	89	3.4	140	7.1	9	6.7

Fig. 13.3: Trends in actual number of patients who received Treatment Only at Reporting Institution - Cancer Cervix

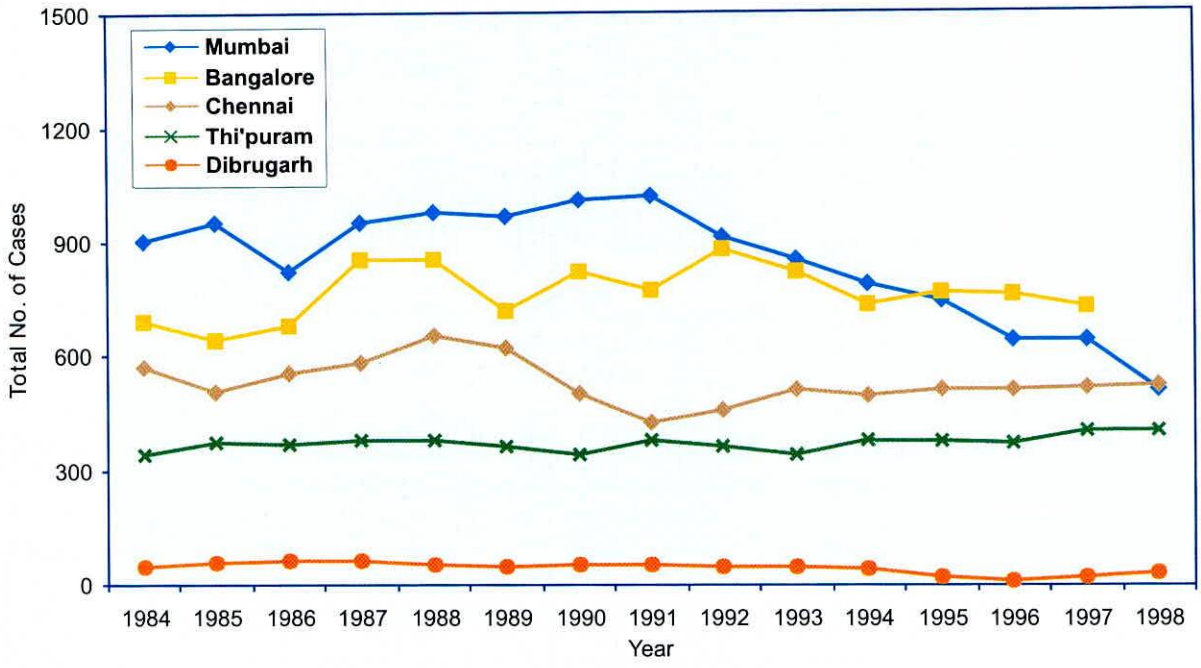


Fig. 13.4: Trends in actual number of patients who received Any Surgery (Treated only at RI) - Cancer Cervix

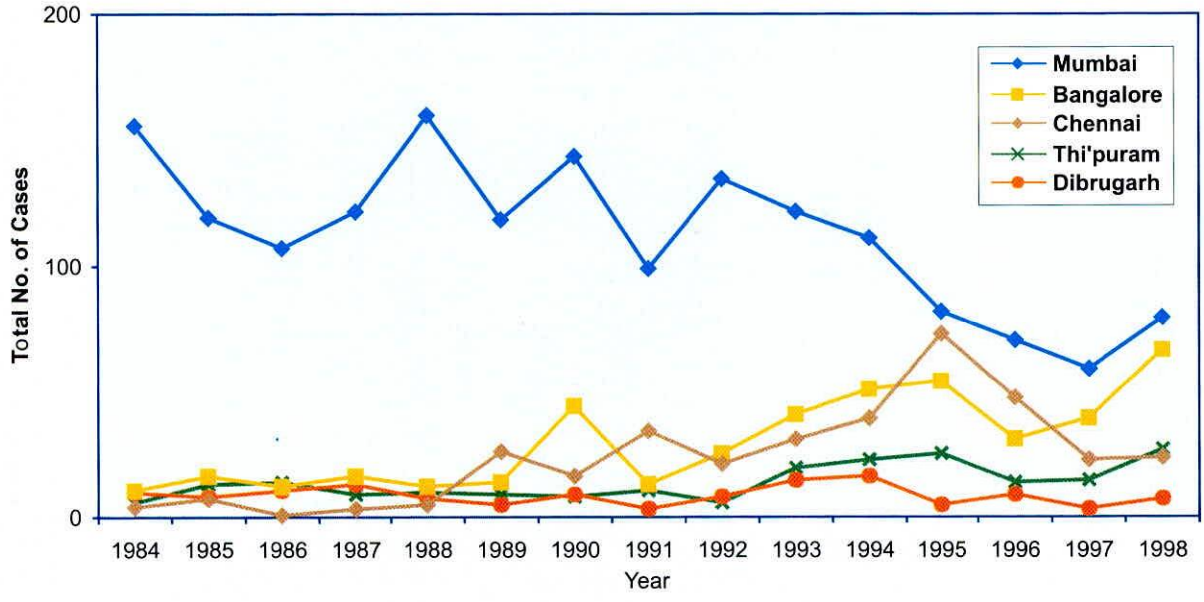


Fig. 13.5: Trends in actual number of patients who received Any Radiotherapy (Treated only at RI) - Cancer Cervix

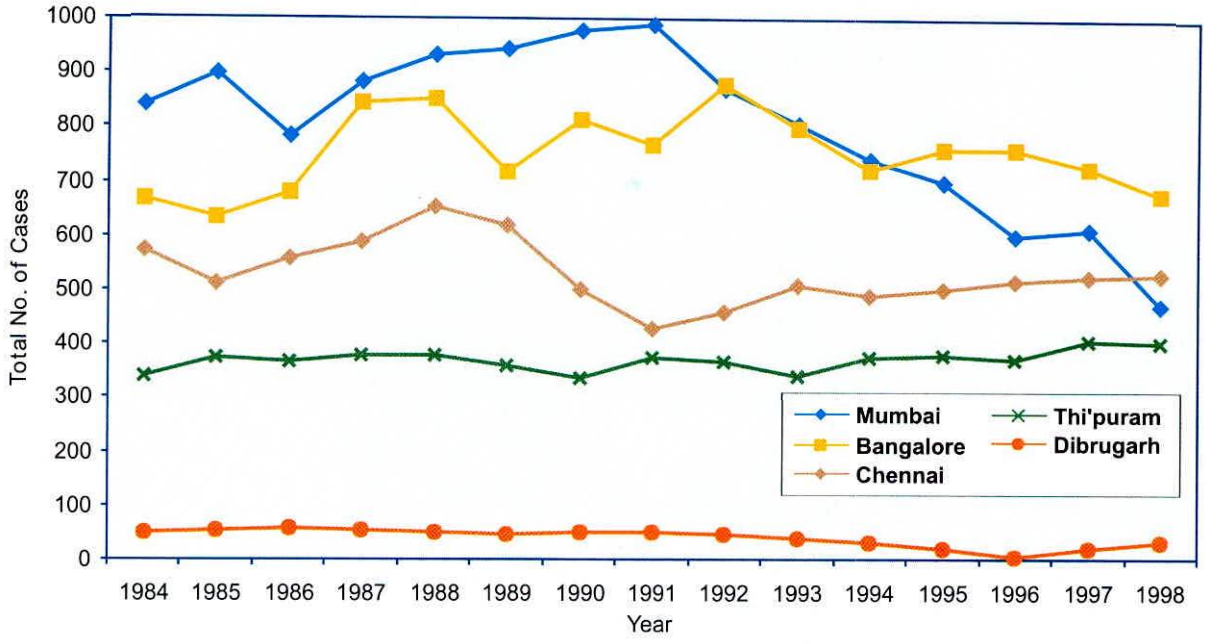
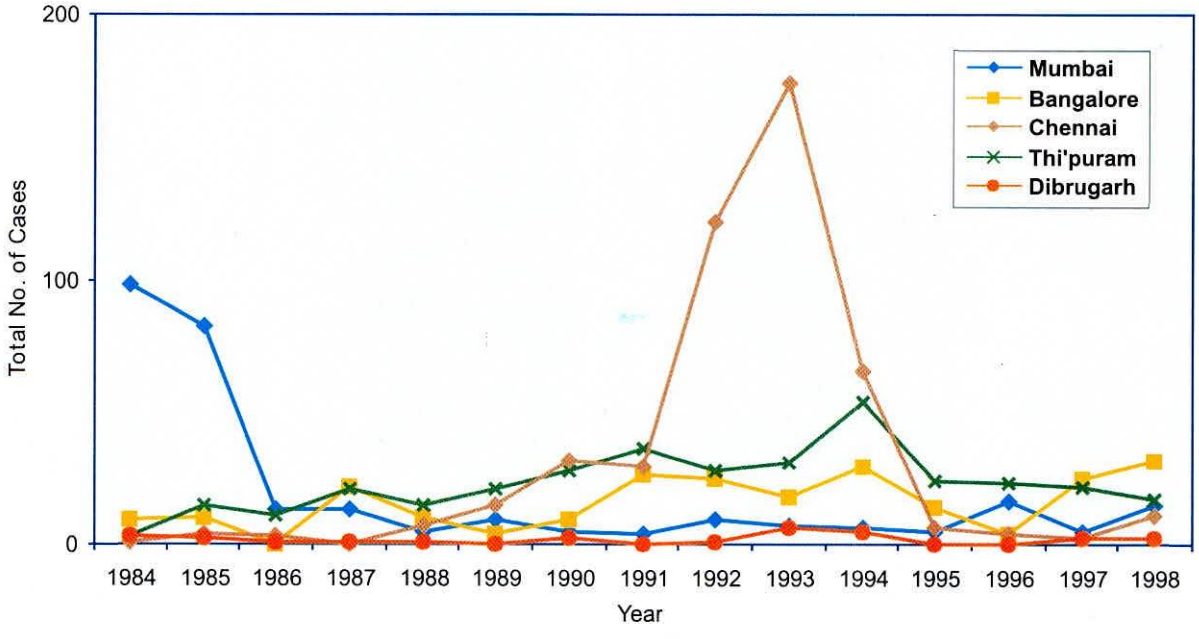


Fig. 13.6: Trends in actual number of patients who received Any Chemotherapy (Treated only at RI) - Cancer Cervix



Chapter 14

HISTOLOGIC TYPES OF SELECTED SITES OF CANCER

This chapter deals with the relative proportions of histological types of cancer for certain specific sites.

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-9: 141)

TABLE 14.1: Tongue Cancers-Histologic Types
Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	20	0.6	0	0.0	13	2.1	1	0.1	0	0.0
Carcinomas	29	0.9	91	10.9	5	0.8	17	1.7	6	3.2
Verrucous Carcinoma	2	0.1	4	0.5	2	0.3	20	1.9	0	0.0
Squamous Cell Carc.	3012	97.8	732	87.7	596	96.3	982	95.5	184	96.8
Adeno Carcinoma	9	0.3	5	0.6	2	0.3	5	0.5	0	0.0
Others	7	0.2	3	0.4	1	0.2	3	0.3	0	0.0
All Histologic Types	**3079**	**100.0**	**835**	**100.0**	**619**	**100.0**	**1028**	**100.0**	**190**	**100.0**
FEMALES										
Neoplasm Malignant	4	0.5	0	0.0	2	1.1	1	0.2	0	0.0
Carcinomas	5	0.6	10	5.3	4	2.2	0	0.0	2	3.9
Verrucous Carcinoma	2	0.2	3	1.6	0	0.0	14	2.6	0	0.0
Squamous Cell Carc.	806	97.0	170	90.9	172	95.0	522	96.5	49	96.1
Adeno Carcinoma	7	0.8	1	0.5	1	0.6	2	0.4	0	0.0
Others	7	0.8	3	1.6	2	1.1	2	0.4	0	0.0
All Histologic Types	**831**	**100.0**	**187**	**100.0**	**181**	**100.0**	**541**	**100.0**	**51**	**100.0**

SALIVARY GLAND (ICD-9: 142)

TABLE 14.2: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Carcinomas	25	13.2	38	40.4	15	22.1	17	15.2	11	84.6
Adeno Ca	31	16.3	11	11.7	15	22.1	11	9.8	1	7.7
Adenoid Cystic	34	17.9	5	5.3	6	8.8	13	11.6	1	7.7
Mucoepidermoid	69	36.3	31	33.0	28	41.2	54	48.2	0	0.0
Acinar Cell Ca	8	4.2	5	5.3	1	1.5	8	7.1	0	0.0
Malig Mix Tum	15	7.9	0	0.0	2	2.9	1	0.9	0	0.0
Others	8	4.2	4	4.3	1	1.5	8	7.1	0	0.0
All Types	**190**	**100.0**	**94**	**100.0**	**68**	**100.0**	**112**	**100.0**	**13**	**100.0**
FEMALES										
Carcinomas	8	8.0	25	33.3	12	22.2	7	8.2	2	50.0
Adeno Ca	10	10.0	4	5.3	7	13.0	6	7.1	1	25.0
Adenoid Cystic	23	23.0	13	17.3	16	29.6	18	21.2	0	0.0
Mucoepidermoid	50	50.0	27	36.0	14	25.9	38	44.7	0	0.0
Acinar Cell Ca	3	3.0	0	0.0	1	1.9	9	10.6	0	0.0
Malig Mix Tum	2	2.0	2	2.7	1	1.9	3	3.5	1	25.0
Others	4	4.0	4	5.3	3	5.6	4	4.7	0	0.0
All Types	**100**	**100.0**	**75**	**100.0**	**54**	**100.0**	**85**	**100.0**	**4**	**100.0**

ORAL CAVITY (ICD-9: 143-145)

TABLE 14.3: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	6	0.1	3	0.3	24	3.2	9	0.5	1	0.6
Carcinomas	18	0.4	31	3.5	24	3.2	19	1.1	2	1.2
Verrucous Carcinoma	74	1.6	17	1.9	0	0.0	94	5.3	1	0.6
Squamous Cell Carc.	4351	96.3	800	91.1	681	91.2	1616	91.8	166	96.0
Adeno Carcinoma	37	0.8	10	1.1	11	1.5	8	0.5	0	0.0
Others	32	0.7	17	1.9	7	0.9	14	0.8	3	1.7
All Histologic Types	**4518**	**100.0**	**878**	**100.0**	**747**	**100.0**	**1760**	**100.0**	**173**	**100.0**
FEMALES										
Neoplasm Malignant	1	0.1	4	0.2	22	3.7	6	0.6	0	0.0
Carcinomas	5	0.3	59	2.6	8	1.3	10	1.0	2	2.5
Verrucous Carcinoma	23	1.4	54	2.4	6	1.0	66	6.8	0	0.0
Squamous Cell Carc.	1585	96.2	2111	93.7	553	92.5	862	89.0	77	96.3
Adeno Carcinoma	19	1.2	13	0.6	5	0.8	9	0.9	0	0.0
Others	15	0.9	12	0.5	4	0.7	15	1.5	1	1.3
All Histologic Types	**1648**	**100.0**	**2253**	**100.0**	**598**	**100.0**	**968**	**100.0**	**80**	**100.0**

PHARYNX (ICD-9: 146, 148, 149)

TABLE 14.4: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	41	1.0	7	0.3	32	3.3	9	0.8	0	0.0
Carcinomas	59	1.5	378	15.5	29	3.0	39	3.5	35	5.2
Squamous Cell Carc.	3837	97.2	2040	83.6	913	93.2	1058	94.7	631	94.3
Others	9	0.2	16	0.7	6	0.6	11	1.0	3	0.4
All Histologic Types	**3946**	**100.0**	**2441**	**100.0**	**980**	**100.0**	**1117**	**100.0**	**669**	**100.0**
FEMALES										
Neoplasm Malignant	7	1.0	1	0.2	18	5.9	1	0.6	0	0.0
Carcinomas	7	1.0	50	11.3	14	4.6	8	5.1	7	6.2
Squamous Cell Carc.	709	97.5	390	88.4	269	88.5	143	91.7	105	92.9
Others	4	0.6	0	0.0	3	1.0	4	2.6	1	0.9
All Histologic Types	**727**	**100.0**	**441**	**100.0**	**304**	**100.0**	**156**	**100.0**	**113**	**100.0**

OESOPHAGUS (ICD-9: 150)

TABLE 14.5: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	37	1.5	7	0.5	28	3.4	10	1.0	0	0.0
Carcinomas	67	2.6	182	12.3	31	3.8	56	5.8	7	2.4
Squamous Cell Carc.	2116	83.6	1177	79.7	658	80.1	738	76.2	273	93.5
Adeno Carcinoma	276	10.9	96	6.5	94	11.4	129	13.3	8	2.7
Others	35	1.4	15	1.0	10	1.2	36	3.7	4	1.4
All Histologic Types	**2531**	**100.0**	**1477**	**100.0**	**821**	**100.0**	**969**	**100.0**	**292**	**100.0**
FEMALES										
Neoplasm Malignant	9	0.7	5	0.4	13	3.1	1	0.4	0	0.0
Carcinomas	49	3.7	102	9.2	23	5.5	11	4.3	7	4.8
Squamous Cell Carc.	1204	89.8	951	85.4	356	84.4	226	87.6	137	94.5
Adeno Carcinoma	70	5.2	50	4.5	22	5.2	14	5.4	1	0.7
Others	9	0.7	5	0.4	8	1.9	6	2.3	0	0.0
All Histologic Types	**1341**	**100.0**	**1113**	**100.0**	**422**	**100.0**	**258**	**100.0**	**145**	**100.0**

STOMACH (ICD-9: 151)

TABLE 14.6: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	9	0.9	5	0.7	36	4.5	14	2.4	0	0.0
Carcinomas	33	3.2	94	12.3	61	7.6	81	13.7	8	9.1
Adeno Carcinomas	810	78.7	560	73.4	588	73.6	381	64.2	73	83.0
Papillary Adeno Carc	4	0.4	12	1.6	7	0.9	8	1.3	1	1.1
Mucinous Adeno Carc.	34	3.3	36	4.7	76	9.5	72	12.1	4	4.5
Sarcomas	11	1.1	1	0.1	0	0.0	4	0.7	0	0.0
Others	128	12.4	55	7.2	31	3.9	33	5.6	2	2.3
All Histologic Types	**1029**	**100.0**	**763**	**100.0**	**799**	**100.0**	**593**	**100.0**	**88**	**100.0**
FEMALES										
Neoplasm Malignant	7	1.9	5	1.6	8	2.5	0	0.0	0	0.0
Carcinomas	13	3.6	46	15.1	33	10.4	27	16.8	3	5.5
Adeno Carcinomas	250	68.5	205	67.4	220	69.4	96	59.6	47	85.5
Papillary Adeno Carc	0	0.0	3	1.0	3	0.9	2	1.2	0	0.0
Mucinous Adeno Carc.	10	2.7	12	3.9	31	9.8	16	9.9	3	5.5
Sarcomas	9	2.5	4	1.3	1	0.3	1	0.6	0	0.0
Others	76	20.8	29	9.5	21	6.6	19	11.8	2	3.6
All Histologic Types	**365**	**100.0**	**304**	**100.0**	**317**	**100.0**	**161**	**100.0**	**55**	**100.0**

LUNG (ICD-9: 162)

TABLE 14.7: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	217	7.8	29	3.6	37	5.4	117	6.1	1	1.0
Large Cell Carc.	84	3.0	27	3.4	17	2.5	29	1.5	3	3.0
Undiff/Anaplast Carc	31	1.1	16	2.0	5	0.7	108	5.6	6	6.0
Small Cell Carc.	309	11.1	101	12.6	110	16.1	178	9.2	4	4.0
Oat Cell Carc.	1	0.0	1	0.1	4	0.6	5	0.3	4	4.0
Squamous Cell Carc.	948	34.1	264	32.9	199	29.1	766	39.8	43	43.0
Other Carcinomas	171	6.1	146	18.2	139	20.4	272	14.1	6	6.0
Papillary Adenocarc.	19	0.7	7	0.9	4	0.6	12	0.6	0	0.0
Adeno Squamous Carc.	43	1.5	3	0.4	0	0.0	16	0.8	0	0.0
Adeno Carc. NOS	880	31.6	148	18.5	150	22.0	385	20.0	23	23.0
Others	80	2.9	60	7.5	18	2.6	37	1.9	10	10.0
All Histologic Types	**2783**	**100.0**	**802**	**100.0**	**683**	**100.0**	**1925**	**100.0**	**100**	**100.0**
FEMALES										
Neoplasm Malignant	39	6.4	4	2.6	6	5.7	17	7.8	0	0.0
Large Cell Carc.	14	2.3	4	2.6	3	2.8	4	1.8	1	3.1
Undiff/Anaplast Carc	5	0.8	2	1.3	1	0.9	4	1.8	2	6.3
Small Cell Carc.	32	5.3	8	5.2	3	2.8	4	1.8	0	0.0
Oat Cell Carc.	0	0.0	1	0.6	0	0.0	1	0.5	3	9.4
Squamous Cell Carc.	96	15.9	33	21.3	19	17.9	47	21.7	16	50.0
Other Carcinomas	26	4.3	22	14.2	17	16.0	24	11.1	5	15.6
Papillary Adenocarc.	9	1.5	2	1.3	3	2.8	3	1.4	0	0.0
Adeno Squamous Carc.	10	1.7	0	0.0	0	0.0	2	0.9	0	0.0
Adeno Carc. NOS	336	55.5	66	42.6	45	42.5	86	39.6	3	9.4
Others	38	6.3	13	8.4	9	8.5	25	11.5	2	6.3
All Histologic Types	**605**	**100.0**	**155**	**100.0**	**106**	**100.0**	**217**	**100.0**	**32**	**100.0**

BONE (ICD-9: 170)

TABLE 14.8: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	3	0.6	4	1.6	8	3.4	1	0.4	0	0.0
Sarcomas	20	3.8	15	6.0	4	1.7	6	2.5	1	5.0
Osteosarcomas	323	61.1	114	45.4	119	50.0	144	59.5	4	20.0
Chondrosarcomas	48	9.1	26	10.4	28	11.8	23	9.5	2	10.0
Giant Cell Tumour	2	0.4	18	7.2	25	10.5	3	1.2	3	15.0
Ewing's Sarcoma	99	18.7	47	18.7	40	16.8	52	21.5	5	25.0
Chondroma	5	0.9	3	1.2	3	1.3	5	2.1	1	5.0
Others	29	5.5	24	9.6	11	4.6	8	3.3	4	20.0
All Histologic Types	**529**	**100.0**	**251**	**100.0**	**238**	**100.0**	**242**	**100.0**	**20**	**100.0**
FEMALES										
Neoplasm Malignant	3	1.3	4	2.5	4	3.3	1	0.6	0	0.0
Sarcomas	12	5.2	9	5.6	3	2.5	5	3.1	0	0.0
Osteosarcomas	141	60.8	64	39.8	53	43.8	75	46.9	5	38.5
Chondrosarcomas	29	12.5	18	11.2	12	9.9	21	13.1	4	30.8
Giant Cell Tumour	1	0.4	15	9.3	18	14.9	7	4.4	1	7.7
Ewing's Sarcoma	39	16.8	38	23.6	23	19.0	41	25.6	1	7.7
Chondroma	0	0.0	1	0.6	0	0.0	4	2.5	0	0.0
Others	7	3.0	12	7.5	8	6.6	6	3.8	2	15.4
All Histologic Types	**232**	**100.0**	**161**	**100.0**	**121**	**100.0**	**160**	**100.0**	**13**	**100.0**

SOFT TISSUE (ICD-9: 171, 195)

TABLE 14.9: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	10	1.0	6	1.9	15	5.3	8	2.6	0	0.0
Sarcoma NOS	82	8.6	14	4.5	39	13.7	13	4.2	2	5.9
Spindle Cell Sarcoma	189	19.7	58	18.7	51	17.9	64	20.4	1	2.9
Pleomorphic Cell Sar	55	5.7	24	7.7	20	7.0	22	7.0	0	0.0
Fibrous Histiocytoma	28	2.9	20	6.5	30	10.5	24	7.7	0	0.0
Dermato Fibrosarcoma	44	4.6	0	0.0	0	0.0	0	0.0	0	0.0
Liposarcoma	75	7.8	21	6.8	14	4.9	29	9.3	2	5.9
Leiomyosarcoma	31	3.2	6	1.9	7	2.5	6	1.9	0	0.0
Rhabdomyosarcoma	60	6.3	21	6.8	18	6.3	24	7.7	2	5.9
Synovial Sarcoma	87	9.1	33	10.6	15	5.3	27	8.6	1	2.9
Neurofibrosarcoma	43	4.5	1	0.3	5	1.8	8	2.6	0	0.0
Neurilemmoma	14	1.5	19	6.1	5	1.8	7	2.2	0	0.0
Others	241	25.1	87	28.1	66	23.2	81	25.9	26	76.5
All Histologic Types	**959**	**100.0**	**310**	**100.0**	**285**	**100.0**	**313**	**100.0**	**34**	**100.0**
FEMALES										
Neoplasm Malignant	3	0.7	4	2.4	8	4.4	7	2.9	0	0.0
Sarcoma NOS	33	7.4	19	11.2	13	7.1	13	5.4	3	14.3
Spindle Cell Sarcoma	101	22.5	39	23.1	33	18.0	44	18.4	0	0.0
Pleomorphic Cell Sar	22	4.9	7	4.1	11	6.0	15	6.3	2	9.5
Fibrous Histiocytoma	11	2.5	5	3.0	16	8.7	14	5.9	0	0.0
Dermato Fibrosarcoma	14	3.1	0	0.0	0	0.0	0	0.0	0	0.0
Liposarcoma	18	4.0	5	3.0	5	2.7	14	5.9	5	23.8
Leiomyosarcoma	7	1.6	2	1.2	6	3.3	3	1.3	0	0.0
Rhabdomyosarcoma	26	5.8	12	7.1	12	6.6	24	10.0	2	9.5
Synovial Sarcoma	39	8.7	16	9.5	11	6.0	23	9.6	1	4.8
Neurofibrosarcoma	29	6.5	2	1.2	2	1.1	3	1.3	0	0.0
Neurilemmoma	10	2.2	4	2.4	6	3.3	3	1.3	0	0.0
Others	135	30.1	54	32.0	60	32.8	76	31.8	8	38.1
All Histologic Types	**448**	**100.0**	**169**	**100.0**	**183**	**100.0**	**239**	**100.0**	**21**	**100.0**

FEMALE BREAST (ICD-9: 174)

TABLE 14.10: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Neoplasm Malignant	206	2.7	13	0.6	39	1.5	126	3.0	0	0.0
Carcinomas	222	3.0	113	5.2	43	1.7	201	4.8	13	7.0
Papillary Carcinoma	30	0.4	6	0.3	7	0.3	18	0.4	1	0.5
Squamous Cell Carc.	9	0.1	17	0.8	3	0.1	3	0.1	0	0.0
Adeno Carc. NOS	104	1.4	21	1.0	24	0.9	21	0.5	2	1.1
Mucinous Adeno Carc.	63	0.8	13	0.6	21	0.8	46	1.1	0	0.0
Infil. Duct Carc.	6398	85.1	1856	85.5	2252	87.9	3553	85.6	138	74.2
Medullary Carc.	43	0.6	33	1.5	48	1.9	40	1.0	20	10.8
Lobular Carc.	256	3.4	37	1.7	46	1.8	75	1.8	9	4.8
Paget's Disease	25	0.3	1	0.0	2	0.1	9	0.2	0	0.0
Cystosarc. Phyllodes	42	0.6	20	0.9	26	1.0	31	0.7	0	0.0
Others	121	1.6	41	1.9	52	2.0	29	0.7	3	1.6
All Histologic Types	**7519**	**100.0**	**2171**	**100.0**	**2563**	**100.0**	**4152**	**100.0**	**186**	**100.0**

CERVIX (ICD-9: 180)

TABLE 14.11: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Neoplasm Malignant	7	0.1	8	0.1	87	1.7	7	0.3	0	0.0
Carcinomas	130	1.9	297	4.7	65	1.3	42	1.7	6	3.0
Non-Kerat Large Cell	24	0.3	2947	46.7	2813	56.4	879	36.0	107	53.5
Non-Kerat Small Cell	0	0.0	27	0.4	40	0.8	28	1.1	12	6.0
KeratSquaCellCarc.NO	3	0.0	1302	20.6	497	10.0	551	22.5	15	7.5
Squa Cell Carc.NOS	6399	91.9	1288	20.4	1136	22.8	786	32.2	41	20.5
Other Squa Cell Carc	5	0.1	70	1.1	25	0.5	11	0.5	2	1.0
Adeno Carcinoma	282	4.0	205	3.2	130	2.6	73	3.0	14	7.0
Adeno Squa Carc.	74	1.1	121	1.9	170	3.4	29	1.2	0	0.0
Others	39	0.6	44	0.7	24	0.5	38	1.6	3	1.5
All Histologic Types	**6963**	**100.0**	**6309**	**100.0**	**4987**	**100.0**	**2444**	**100.0**	**200**	**100.0**

OVARY (ICD-9:183)

TABLE 14.12: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
Neoplasm Malignant	19	1.2	14	2.3	26	5.0	16	1.5	0	0.0
Carcinomas	45	2.9	46	7.5	26	5.0	54	5.2	2	2.7
Other Carcinomas	3	0.2	1	0.2	2	0.4	7	0.7	2	2.7
Papillary Carcinoma	13	0.8	6	1.0	2	0.4	12	1.2	4	5.5
Squamous Cell Carc.	2	0.1	6	1.0	4	0.8	11	1.1	0	0.0
Adeno Carcinoma	569	37.0	144	23.5	178	34.0	143	13.8	46	63.0
Papillary Adeno Carc	127	8.3	59	9.6	51	9.7	95	9.2	2	2.7
Clear Cell Adeno Car	17	1.1	2	0.3	3	0.6	21	2.0	0	0.0
Endometroid Carcinom	104	6.8	7	1.1	11	2.1	65	6.3	0	0.0
Papi/Serous Cystaden	328	21.3	186	30.4	78	14.9	297	28.6	2	2.7
Muc Adeno/Cystadeno	84	5.5	55	9.0	55	10.5	155	14.9	7	9.6
Granulosa Cell Tumou	6	0.4	5	0.8	16	3.1	11	1.1	0	0.0
Sarcomas	2	0.1	4	0.7	2	0.4	6	0.6	2	2.7
Stromal Tumours	8	0.5	4	0.7	1	0.2	5	0.5	0	0.0
Dysgerminoma	84	5.5	30	4.9	18	3.4	43	4.1	0	0.0
Endodermal Sinus Tum	32	2.1	14	2.3	30	5.7	37	3.6	0	0.0
Teratomas	29	1.9	13	2.1	12	2.3	31	3.0	2	2.7
Others	66	4.3	16	2.6	9	1.7	28	2.7	4	5.5
All Histologic Types	**1538**	**100.0**	**612**	**100.0**	**524**	**100.0**	**1037**	**100.0**	**73**	**100.0**

KIDNEY (ICD-9: 189)

TABLE 14.13: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	13	3.1	1	0.7	1	1.4	4	2.5	0	0.0
Carcinoma NOS	12	2.9	4	2.7	2	2.8	8	5.0	3	21.4
Papillary Carcinoma	0	0.0	1	0.7	0	0.0	1	0.6	0	0.0
Squamous Cell Carc.	13	3.1	7	4.8	4	5.6	5	3.1	1	7.1
Transitional Cell Ca	27	6.5	5	3.4	6	8.5	17	10.6	1	7.1
Adenocarcinoma	11	2.6	4	2.7	6	8.5	5	3.1	0	0.0
Clear Cell Adenocarc	30	7.2	0	0.0	2	2.8	5	3.1	0	0.0
Renal Cell Carc.	238	56.9	77	52.4	39	54.9	76	47.5	1	7.1
Nephroblastoma	60	14.4	42	28.6	9	12.7	30	18.8	8	57.1
Others	14	3.3	6	4.1	2	2.8	9	5.6	0	0.0
All Histologic Types	**418**	**100.0**	**147**	**100.0**	**71**	**100.0**	**160**	**100.0**	**14**	**100.0**
FEMALES										
Neoplasm Malignant	3	2.0	1	1.3	0	0.0	2	3.0	0	0.0
Carcinoma NOS	8	5.3	4	5.2	2	5.3	0	0.0	0	0.0
Papillary Carcinoma	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Squamous Cell Carc.	3	2.0	2	2.6	4	10.5	3	4.5	0	0.0
Transitional Cell Ca	8	5.3	1	1.3	2	5.3	4	6.0	0	0.0
Adenocarcinoma	1	0.7	4	5.2	0	0.0	3	4.5	0	0.0
Clear Cell Adenocarc	8	5.3	0	0.0	1	2.6	3	4.5	0	0.0
Renal Cell Carc.	76	50.0	34	44.2	17	44.7	26	38.8	2	33.3
Nephroblastoma	38	25.0	29	37.7	9	23.7	21	31.3	4	66.7
Others	7	4.6	2	2.6	3	7.9	5	7.5	0	0.0
All Histologic Types	**152**	**100.0**	**77**	**100.0**	**38**	**100.0**	**67**	**100.0**	**6**	**100.0**

BRAIN (ICD-9: 191)

TABLE 14.14: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	0	0.0	1	0.2	2	2.0	2	0.5	0	0.0
Gliomas	46	7.2	73	14.6	15	14.7	54	12.5	0	0.0
Ependymoma	26	4.1	13	2.6	2	2.0	7	1.6	0	0.0
Astrocytoma	405	63.5	299	59.7	47	46.1	259	60.0	8	66.7
Glioblastoma	37	5.8	30	6.0	20	19.6	49	11.3	1	8.3
Oligodendroglioma	30	4.7	29	5.8	7	6.9	15	3.5	1	8.3
Medulloblastoma	86	13.5	44	8.8	7	6.9	34	7.9	0	0.0
Others	8	1.3	12	2.4	2	2.0	12	2.8	2	16.7
All Histologic Types	**638**	**100.0**	**501**	**100.0**	**102**	**100.0**	**432**	**100.0**	**12**	**100.0**
FEMALES										
Neoplasm Malignant	0	0.0	0	0.0	0	0.0	3	1.0	0	0.0
Gliomas	20	7.2	37	15.9	8	16.7	37	12.8	1	33.3
Ependymoma	12	4.3	5	2.2	7	14.6	9	3.1	0	0.0
Astrocytoma	173	62.7	136	58.6	18	37.5	159	54.8	2	66.7
Glioblastoma	15	5.4	21	9.1	4	8.3	31	10.7	0	0.0
Oligodendroglioma	8	2.9	6	2.6	2	4.2	17	5.9	0	0.0
Medulloblastoma	41	14.9	19	8.2	6	12.5	28	9.7	0	0.0
Others	7	2.5	8	3.4	3	6.3	6	2.1	0	0.0
All Histologic Types	**276**	**100.0**	**232**	**100.0**	**48**	**100.0**	**290**	**100.0**	**3**	**100.0**

THYROID GLAND (ICD-9: 193)

TABLE 14.15: Number(#) and Relative Proportion(%) of different histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Neoplasm Malignant	9	2.0	1	0.5	0	0.0	4	1.0	0	0.0
Other Carcinomas	18	4.0	15	6.8	10	5.2	13	3.1	0	0.0
Undifferentiated Car	23	5.2	5	2.3	12	6.3	15	3.6	4	26.7
Papillary Carc.NOS	245	54.9	141	63.5	105	54.7	287	69.0	1	6.7
Papillary Adenocarc.	0	0.0	1	0.5	19	9.9	1	0.2	0	0.0
Follicular Carc.	63	14.1	25	11.3	14	7.3	40	9.6	8	53.3
Mixed Papi & Folli C	10	2.2	12	5.4	10	5.2	29	7.0	0	0.0
Medullary Carcinoma	72	16.1	14	6.3	14	7.3	26	6.3	0	0.0
Others	6	1.3	8	3.6	8	4.2	1	0.2	2	13.3
All Histologic Types	**446**	**100.0**	**222**	**100.0**	**192**	**100.0**	**416**	**100.0**	**15**	**100.0**
FEMALES										
Neoplasm Malignant	8	1.2	2	0.4	3	1.2	1	0.1	0	0.0
Other Carcinomas	20	3.1	27	5.7	11	4.5	13	1.0	0	0.0
Undifferentiated Car	21	3.2	17	3.6	12	4.9	16	1.2	1	10.0
Papillary Carc.NOS	384	59.3	300	63.7	118	48.0	894	68.3	0	0.0
Papillary Adenocarc.	1	0.2	1	0.2	28	11.4	9	0.7	0	0.0
Follicular Carc.	143	22.1	70	14.9	37	15.0	220	16.8	6	60.0
Mixed Papi & Folli C	20	3.1	29	6.2	20	8.1	116	8.9	2	20.0
Medullary Carcinoma	42	6.5	20	4.2	9	3.7	26	2.0	0	0.0
Others	9	1.4	5	1.1	8	3.3	14	1.1	1	10.0
All Histologic Types	**648**	**100.0**	**471**	**100.0**	**246**	**100.0**	**1309**	**100.0**	**10**	**100.0**

TUMOURS OF LYMPHOID AND HAEMATOPOIETIC SYSTEM (LHM) (ICD-9: 200-208)

TABLE 14.16: Number(#) and Relative Proportion(%) of main histologic types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
NHL	1957	32.0	669	30.3	524	35.4	908	35.8	77	48.7
HD	765	12.5	308	14.0	228	15.4	210	8.3	9	5.7
MM	324	5.3	101	4.6	85	5.7	272	10.7	10	6.3
Leukaemias	3061	50.1	1128	51.1	642	43.4	1144	45.1	62	39.2
All Types	**6107**	**100.0**	**2206**	**100.0**	**1479**	**100.0**	**2534**	**100.0**	**158**	**100.0**
FEMALES										
NHL	745	31.6	279	27.0	214	30.0	438	31.0	23	34.3
HD	207	8.8	105	10.1	52	7.3	85	6.0	4	6.0
MM	124	5.3	41	4.0	46	6.5	180	12.7	8	11.9
Leukaemias	1278	54.3	610	58.9	401	56.2	712	50.3	32	47.8
All Types	**2354**	**100.0**	**1035**	**100.0**	**713**	**100.0**	**1415**	**100.0**	**67**	**100.0**

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

HODGKIN'S DISEASE (ICD-9: 201)

TABLE 14.17: Number(#) and Relative Proportion(%) of different histologic sub-types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Hodgkin's Dis. NOS	271	35.4	85	27.6	61	26.8	41	19.5	7	77.8
HD LP	0	0.0	13	4.2	11	4.8	39	18.6	1	11.1
HD MC	428	55.9	93	30.2	110	48.2	79	37.6	1	11.1
HD LD	6	0.8	2	0.6	9	3.9	5	2.4	0	0.0
HD NS	60	7.8	115	37.3	37	16.2	46	21.9	0	0.0
All Histologic Types	**765**	**100.0**	**308**	**100.0**	**228**	**100.0**	**210**	**100.0**	**9**	**100.0**
FEMALES										
Hodgkin's Dis. NOS	80	38.6	30	28.6	8	15.4	20	23.5	3	75.0
HD LP	0	0.0	3	2.9	4	7.7	8	9.4	0	0.0
HD MC	110	53.1	32	30.5	19	36.5	28	32.9	1	25.0
HD LD	2	1.0	2	1.9	6	11.5	3	3.5	0	0.0
HD NS	15	7.2	38	36.2	15	28.8	26	30.6	0	0.0
All Histologic Types	**207**	**100.0**	**105**	**100.0**	**52**	**100.0**	**85**	**100.0**	**4**	**100.0**

LP = Lymphocyte Predominant MC = Mixed Cellularity LD = Lymphocyte Depletion NS = Nodular Sclerosis

LEUKAEMIAS (ICD-9: 204-208)

TABLE 14.18: Number(#) and Relative Proportion(%) of different types

Histologic Type	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Leukaemia NOS	2	0.1	2	0.2	3	0.5	2	0.2	0	0.0
Acute Leukaemia NOS	104	3.4	89	7.9	59	9.2	20	1.7	1	1.6
Acute Lymphoid Leuk	1230	40.2	394	34.9	175	27.3	575	50.3	23	37.1
Chronic Lymphoid Leu	219	7.2	55	4.9	28	4.4	45	3.9	1	1.6
Acute Myeloid Leuk	602	19.7	293	26.0	177	27.6	337	29.5	20	32.3
Chronic Myeloid Leuk	882	28.8	283	25.1	194	30.2	154	13.5	14	22.6
Others	22	0.7	12	1.1	6	0.9	11	1.0	3	4.8
All Histologic Types	**3061**	**100.0**	**1128**	**100.0**	**642**	**100.0**	**1144**	**100.0**	**62**	**100.0**
FEMALES										
Leukaemia NOS	2	0.2	1	0.2	1	0.2	1	0.1	0	0.0
Acute Leukaemia NOS	37	2.9	56	9.2	46	11.5	13	1.8	0	0.0
Acute Lymphoid Leuk	456	35.7	153	25.1	98	24.4	320	44.9	11	34.4
Chronic Lymphoid Leu	63	4.9	18	3.0	8	2.0	25	3.5	1	3.1
Acute Myeloid Leuk	367	28.7	202	33.1	127	31.7	256	36.0	9	28.1
Chronic Myeloid Leuk	345	27.0	172	28.2	116	28.9	90	12.6	8	25.0
Others	8	0.6	8	1.3	5	1.2	7	1.0	3	9.4
All Histologic Types	**1278**	**100.0**	**610**	**100.0**	**401**	**100.0**	**712**	**100.0**	**32**	**100.0**

Chapter 15

EDUCATIONAL AND MARITAL STATUS; RELIGION AND LANGUAGE SPOKEN

This chapter summarises the relative proportion of patients according to educational status and marital status; religion and language spoken.

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

Table 15.1: Number(#) & Relative Proportion(%) by Educational Status (All Sites of Cancer)

Educational Status	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Illiterate	7093	16.5	6005	37.7	2332	17.4	1738	9.2	904	34.2
Literate	856	2.0	1462	9.2	906	6.8	363	1.9	717	27.1
Primary	8157	19.0	1853	11.6	3922	29.2	4901	25.8	284	10.7
Middle	3521	8.2	2233	14.0	2135	15.9	4386	23.1	178	6.7
Secondary	9028	21.0	2544	16.0	2859	21.3	4154	21.9	209	7.9
Technical	109	0.3	256	1.6	116	0.9	271	1.4	1	0.0
College	6336	14.7	847	5.3	964	7.2	1720	9.1	53	2.0
Below 5 year	798	1.9	327	2.1	179	1.3	368	1.9	30	1.1
Oth. & Unk.	7107	16.5	399	2.5	0	0.0	1077	5.7	269	10.2
Total	**43005**	**100.0**	**15926**	**100.0**	**13413**	**100.0**	**18978**	**100.0**	**2645**	**100.0**
FEMALES										
Illiterate	12477	37.0	12440	67.1	7757	49.8	2795	16.8	869	58.0
Literate	641	1.9	1183	6.4	783	5.0	300	1.8	197	13.2
Primary	4788	14.2	1101	5.9	3096	19.9	3581	21.5	159	10.6
Middle	1952	5.8	1457	7.9	1635	10.5	3004	18.0	97	6.5
Secondary	4770	14.1	1306	7.0	1657	10.6	3562	21.4	72	4.8
Technical	33	0.1	107	0.6	19	0.1	285	1.7	0	0.0
College	3310	9.8	359	1.9	529	3.4	1729	10.4	12	0.8
Below 5 year	366	1.1	163	0.9	105	0.7	253	1.5	13	0.9
Oth. & Unk.	5385	16.0	436	2.4	0	0.0	1139	6.8	79	5.3
Total	**33722**	**100.0**	**18552**	**100.0**	**15581**	**100.0**	**16648**	**100.0**	**1498**	**100.0**

Table 15.2: Number(#) & Relative Proportion(%) by Marital Status (All Sites of Cancer)

Marital Status	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Unmarried	5470	12.7	2071	13.0	1409	10.5	2248	11.8	183	6.9
Married	34595	80.4	13297	83.5	11294	84.2	16115	84.9	2122	80.2
Widowed	1756	4.1	499	3.1	666	5.0	407	2.1	117	4.4
Divorced	37	0.1	4	0.0	12	0.1	28	0.1	1	0.0
Separated	2	0.0	24	0.2	32	0.2	2	0.0	1	0.0
Others & Unk	1145	2.7	31	0.2	0	0.0	178	0.9	221	8.4
Total	**43005**	**100.0**	**15926**	**100.0**	**13413**	**100.0**	**18978**	**100.0**	**2645**	**100.0**
FEMALES										
Unmarried	2354	7.0	947	5.1	690	4.4	1664	10.0	90	6.0
Married	25189	74.7	13120	70.7	10842	69.6	11127	66.8	1202	80.2
Widowed	5564	16.5	4348	23.4	3786	24.3	3422	20.6	159	10.6
Divorced	94	0.3	11	0.1	29	0.2	235	1.4	2	0.1
Separated	3	0.0	109	0.6	234	1.5	1	0.0	0	0.0
Others & Unk	518	1.5	17	0.1	0	0.0	199	1.2	45	3.0
Total	**33722**	**100.0**	**18552**	**100.0**	**15581**	**100.0**	**16648**	**100.0**	**1498**	**100.0**

TABLE 15.3: Number(#) & Relative Proportion(%) of Cancer Patients by Religion

Religion	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Hindu	35921	83.5	13971	87.7	11695	87.2	11589	61.1	2333	88.2
Muslim	5187	12.1	1591	10.0	1088	8.1	3254	17.1	258	9.8
Christian	1159	2.7	324	2.0	579	4.3	4109	21.7	27	1.0
Sikh	148	0.3	3	0.0	4	0.0	0	0.0	2	0.1
Jain	251	0.6	20	0.1	47	0.4	0	0.0	2	0.1
Neo-Buddhist	98	0.2	10	0.1	0	0.0	0	0.0	8	0.3
Parsi	66	0.2	0	0.0	0	0.0	0	0.0	0	0.0
Others	7	0.0	3	0.0	0	0.0	0	0.0	11	0.4
Unknown	168	0.4	4	0.0	0	0.0	26	0.1	4	0.2
Total	**43005**	**100.0**	**15926**	**100.0**	**13413**	**100.0**	**18978**	**100.0**	**2645**	**100.0**
FEMALES										
Hindu	28472	84.4	16607	89.5	13721	88.1	10705	64.3	1340	89.5
Muslim	3299	9.8	1524	8.2	975	6.3	2242	13.5	113	7.5
Christian	1157	3.4	385	2.1	846	5.4	3674	22.1	19	1.3
Sikh	173	0.5	1	0.0	3	0.0	0	0.0	6	0.4
Jain	228	0.7	12	0.1	33	0.2	0	0.0	1	0.1
Neo-Buddhist	131	0.4	7	0.0	3	0.0	0	0.0	5	0.3
Parsi	89	0.3	0	0.0	0	0.0	0	0.0	0	0.0
Others	10	0.0	8	0.0	0	0.0	0	0.0	9	0.6
Unknown	163	0.5	8	0.0	0	0.0	27	0.2	5	0.3
Total	**33722**	**100.0**	**18552**	**100.0**	**15581**	**100.0**	**16648**	**100.0**	**1498**	**100.0**

Table 15.4: Number(#) & Relative Proportion(%) by Language Spoken (All Sites of Cancer)

Language Spoken	Mumbai		Bangalore		Chennai		Thi'puram		Dibrugarh	
	#	%	#	%	#	%	#	%	#	%
MALES										
Assamese	764	1.8	7	0.0	394	2.9	4	0.0	1810	68.4
Bengali	2572	6.0	21	0.1	90	0.7	1	0.0	257	9.7
Gujarati	3265	7.6	19	0.1	22	0.2	8	0.0	1	0.0
Hindi	14246	33.1	125	0.8	163	1.2	8	0.0	162	6.1
Kannada	621	1.4	9096	57.1	60	0.4	5	0.0	0	0.0
Kashmiri	54	0.1	3	0.0	3	0.0	0	0.0	0	0.0
Malayalam	587	1.4	205	1.3	771	5.7	17417	91.8	9	0.3
Marathi	13337	31.0	160	1.0	40	0.3	1	0.0	0	0.0
Oriya	670	1.6	9	0.1	22	0.2	0	0.0	199	7.5
Punjabi	534	1.2	5	0.0	3	0.0	7	0.0	6	0.2
Sanskrit	2	0.0	2	0.0	0	0.0	1	0.0	2	0.1
Sindhi	516	1.2	3	0.0	5	0.0	34	0.2	0	0.0
Tamil	414	1.0	1380	8.7	7192	53.6	1318	6.9	0	0.0
Telugu	824	1.9	2945	18.5	4202	31.3	1	0.0	4	0.2
Urdu	2319	5.4	1526	9.6	365	2.7	7	0.0	0	0.0
English	232	0.5	16	0.1	21	0.2	0	0.0	1	0.0
Others	1843	4.3	264	1.7	60	0.4	129	0.7	172	6.5
Unknown	205	0.5	140	0.9	0	0.0	37	0.2	22	0.8
Total	**43005**	**100.0**	**15926**	**100.0**	**13413**	**100.0**	**18978**	**100.0**	**2645**	**100.0**
FEMALES										
Assamese	328	1.0	2	0.0	108	0.7	4	0.0	990	66.1
Bengali	1667	4.9	30	0.2	38	0.2	1	0.0	113	7.5
Gujarati	2450	7.3	25	0.1	22	0.1	10	0.1	1	0.1
Hindi	9617	28.5	120	0.6	121	0.8	12	0.1	119	7.9
Kannada	476	1.4	9737	52.5	70	0.4	3	0.0	0	0.0
Kashmiri	31	0.1	5	0.0	2	0.0	3	0.0	0	0.0
Malayalam	498	1.5	176	0.9	511	3.3	15113	90.8	1	0.1
Marathi	12633	37.5	196	1.1	33	0.2	1	0.0	0	0.0
Oriya	373	1.1	3	0.0	14	0.1	0	0.0	137	9.1
Punjabi	561	1.7	6	0.0	8	0.1	12	0.1	7	0.5
Sanskrit	2	0.0	3	0.0	0	0.0	3	0.0	0	0.0
Sindhi	598	1.8	6	0.0	13	0.1	38	0.2	0	0.0
Tamil	399	1.2	1909	10.3	8411	54.0	1271	7.6	0	0.0
Telugu	599	1.8	4506	24.3	5698	36.6	3	0.0	1	0.1
Urdu	1505	4.5	1384	7.5	440	2.8	6	0.0	0	0.0
English	253	0.8	10	0.1	18	0.1	0	0.0	0	0.0
Others	1577	4.7	216	1.2	74	0.5	124	0.7	110	7.3
Unknown	155	0.5	218	1.2	0	0.0	44	0.3	19	1.3
Total	**33722**	**100.0**	**18552**	**100.0**	**15581**	**100.0**	**16648**	**100.0**	**1498**	**100.0**

References

Maclennan R, Muir CS, Steinitz R and Winkler A. -Cancer Registration and its Techniques, IARC Scientific Pub. No 21, Lyon, 1978.

Nandakumar A. - Strategy for Active Patient Follow-up in the Conduct of Survival Studies, Status Report - Coordinating Unit of National Cancer Registry Programme (ICMR), Bangalore, 1993.

NCRP Code Manual for Hospital Based Cancer Registry, Indian Council of Medical Research, New Delhi, 1987.

NCRP Code Mannual for Population Based Cancer Registry, Indian Council of Medical Research, New Delhi, 1987.

Parkin DM, Stiller CA, Draper GJ, Bieber CA, Terracini B, Young JL. eds. International Incidence of Childhood Cancer, IARC Scientific Publication No 87, International Agency for Research on Cancer, Lyon, France 1988.

WHO International Classification of Diseases for Oncology, First Edition, World Health Organization, Geneva, 1976.

WHO International Classification of Diseases, 1975 Revision, World Health Organization, Geneva, 1977.

Ten-Year Consolidated Report of the Hospital Based Cancer Registries 1984-1993: National Cancer Registry Programme, Indian Council of Medical Research, New Delhi, 2001.

Young, JL - The Hospital Based Cancer Registry, Ch. in Cancer Registration: Principles and Methods - Editors: Jensen OM, Parkin DM, Maclennan R, Muir CS and Skeet RG. IARC Scientific Pub. No 195, Lyon, 1991.

Other Publications of NCRP

1. Annual Report 1982: National Cancer Registry, Indian Council of Medical Research, New Delhi, 1985
2. Annual Report 1983: National Cancer Registry, Indian Council of Medical Research, New Delhi, 1986
3. Annual Report 1984: National Cancer Registry, Indian Council of Medical Research, New Delhi, 1987
4. Annual Report 1985: National Cancer Registry, Indian Council of Medical Research, New Delhi, 1988
5. Annual Report 1986: National Cancer Registry, Indian Council of Medical Research, New Delhi, 1989
6. Annual Report 1987: National Cancer Registry Programme, Indian Council of Medical Research, New Delhi, 1989
7. Biennial Report 1988-1989: National Cancer Registry Programme, Indian Council of Medical Research, New Delhi, 1992
8. Consolidated Report of the Population Based Cancer Registries 1990-1996: National Cancer Registry Programme, Indian Council of Medical Research, New Delhi, 2001
9. Consolidated Report of the Population Based Cancer Registries 1990-1996 Supplement : Year-wise Tabulation of Incident Cancers and Rates by Site and Gender: National Cancer Registry Programme, Indian Council of Medical Research, New Delhi, 2001
10. Ten Year Consolidated Report of the Hospital Based Cancer Registries 1984-93 : National Cancer Registry Programme, Indian Council of Medical Research, New Delhi, 2001
11. An Overview 1981-2001 : National Cancer Registry Programme, Indian Council of Medical Research, New Delhi, 2001