

REGIONAL CANCER CENTRE

THIRUVANANTHAPURAM

2004-2005

2004-05

REGIONAL CANCER CENTRE

THIRUVANANTHAPURAM - 695011, KERALA, INDIA

REPORT OF ACTIVITIES 2004-2005

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**REGIONAL
CANCER
CENTRE
TRIVANDRUM**

**ORGANISATION
&
SERVICES**

GOVERNING BODY



EXECUTIVE COMMITTEE



DIRECTOR



ADMINISTRATION

General Administration
Finance

SERVICES

CLINICAL

Radiation Oncology
Surgical Oncology
Medical Oncology
Paediatric Oncology
Anaesthesiology
Radiation Physics
Dental Wing
Multidisciplinary Clinics

DIAGNOSTIC

Cytopathology
Imageology
Nuclear Medicine
Clinical Laboratory

AFFILIATED UNITS

Nursing
Pain & Palliative Care
Blood Bank
Pharmacy
Medical Records

RESEARCH

Basic Research
Molecular Medicine,
Drug Development
and Chemo-
informatics
Epidemiology &
Clinical Research

Community Oncology
Outreach Programmes
ECDC, Emakulam
ECDC, Palakkad
NBRR, Karunagapally

Library & Information
Services
Information Systems

GOVERNING BODY MEMBERS OF REGIONAL CANCER CENTRE

1. Sri. A.K. Antony,
Hon'ble Chief Minister of Kerala (till 30-08-2004) Chairman
2. Sri. Oommen Chandy,
Hon'ble Chief Minister of Kerala (from 31-08-2004) Chairman
3. Sri. Kadavoor Sivadasan
Hon'ble Minister for Health (till 30-08-2004)
Govt. of Kerala Vice-Chairman
4. Sri. K.K. Ramachandran Master,
Hon'ble Minister for Health (from 31-08-2004)
Govt. of Kerala Vice-Chairman
5. Sri. K. Ramamoorthy, IAS,
Principal Secretary to Government
Health and Family Welfare Department
Govt. of Kerala Alt. Vice-Chairman
6. Sri. K. Jose Cyriac, IAS,
Principal Secretary to Government
Finance Department
Govt. of Kerala Member
7. Sri. S.M. Vijayanand, IAS,
Secretary to Government,
Planning Department
Govt. of Kerala -do-
8. Dr. Meenu Hariharan,
Director of Medical Education,
Thiruvananthapuram -do-
9. Dr. G. Sujathan,
Principal, Medical College,
Thiruvananthapuram -do-
10. Dr. K. Mohandas,
Director, SCTIMST,
Thiruvananthapuram -do-
11. Dr. M.S. Valiathan,
Hon. Advisor, Manipal Academy of
Higher Education, Manipal -do-

12. Dr. S.P. Agarwal,
Director General of Health Services
Ministry of Health and Family Welfare
Govt. of India Member
13. Sri. J.V.R. Prasada Rao,
Secretary to Government
Health & Family Welfare Department
Govt. of India -do-
14. Dr. S.C. Gupta,
'Vaidya', Pulayanarkotta Road,
Thiruvananthapuram -do-
15. Dr. B. Rajan,
Director, Regional Cancer Centre,
Thiruvananthapuram Convener

EXECUTIVE COMMITTEE MEMBERS OF THE REGIONAL CANCER CENTRE

1. Sri. K. Ramamoorthy, IAS,
Principal Secretary to Government
Health and Family Welfare Department
Govt. of Kerala Chairman
2. Sri. K. Jose Cyriac, IAS,
Principal Secretary to Government
Finance Department, Govt. of Kerala Member
3. Sri. S.M. Vijayanand, IAS,
Secretary to Government
Planning Department, Govt. of Kerala -do-
4. Dr. Meenu Hariharan,
Director of Medical Education
Thiruvananthapuram -do-
5. Dr. G. Sujathan,
Principal, Medical College
Thiruvananthapuram -do-
7. Dr. B. Rajan,
Director, Regional Cancer Centre,
Thiruvananthapuram Convener

OVERVIEW

The Regional Cancer Centre, Thiruvananthapuram continues to march ahead in the field of cancer diagnosis and treatment as well as cancer control activities throughout the State of Kerala. The Clinical services have been further strengthened with the addition of new equipments. A state-of-the-art Carl-Zeiss Operating Microscope has been installed in the surgery division. This would help to strengthen reconstructive surgery and many patients are to gain from this facility. A new molecular pathology laboratory was set up in the Pathology division. This could further improve the diagnostic and research facilities. Efforts are fully on to upgrade the infrastructure facilities of the Radiotherapy and Radiation Physics divisions. A new Linear Accelerator is expected to be installed in 2005-2006 along with a C.T.Simulator and a 16 slice C.T.Scanner.

On the academic front, a number of CME programmes have been carried out on cytological diagnosis of effusions, flow cytometry, voice rehabilitation and reconstructive surgery, palliative care and colposcopy. A two-day workshop on District Cancer Control Programme was jointly organized by RCC and WHO. A high profile workshop on Recent Trends in Radiotherapy was noteworthy by the active participation of senior and eminent Radiation Oncologists of the country.

RCC continued the implementation of Comprehensive Cancer Control Programme for the entire state in tune with the goals set by the National Cancer Control Programme (NCCP) during the report period. It is worthwhile to note that as part of exchange programme in education, training and research, National Cancer Centre, Singapore has proposed collaboration with the RCC in areas of clinical trials and basic laboratory research.

Scientific institutions can achieve academic excellence only by the generation of data and quality information. The data on cancer prevalence, incidence, trends and tobacco use emanated from various studies/surveys were vital and outstanding. Our proactive attempt on the proposed study of the role of environmental pollutants on carcinogenesis was exceptional in many respects.

In view of providing prompt services, the clinical services were modernized and an online registration system for new patients was introduced during the period. The services received from the Non-Governmental Organizations and Charitable Societies were worth mentioning. They continue to expand their activities in areas of medical assistance, counseling, conduct of clinics, rehabilitation services to the poor and needy patients and their

families. The philanthropic activities of the major RCC based organizations like 'Asraya', 'CarePlus', etc are worth mentioning in this context for their commendable services. In order to provide a helping hand towards the poor cancer affected children, and counseling for the parents and rehabilitation measures, another organization 'Prathyasa' started functioning under the auspices of the Division of Paediatric Oncology during the period. Another significant support to the cancer affected children was the donation of 1.5 lakhs by the St.Thomas Higher Secondary School, Thiruvananthapuram. RCC also showed a great deal of compassion to the Tsunami victims by contributing Rs. 2,04,078/- to the Chief Minister's Tsunami Relief Fund.

Construction work of a rest room for patients and those accompanying them was started with the generous financial assistance and supervision of Regional Cancer Association, Thiruvananthapuram and support by other organizations like 'Asraya', 'Karunya Charitable Trust', and 'World Malayalee Council'

Music for relaxation, healing, mental hygiene and overall well being of cancer patients has been widely recognized. 'Sangeetha Santhwanam', a series of music programmes, organized under the auspices of Sri Sathya Sai Orphanage trust, promoted complementary and alternative therapies in cancer care. The participation of eminent musicians and artists like Shri. Kaithapram Damodaran Namboothiri, Dr. Suvarna Nalappat, Shri. Balachandra Menon was much appreciated.

A number of dignitaries from abroad and within the country visited the Centre in connection with various events. Dr. Jan Stjensward, Former Chief of WHO collaborating Centre for Palliative Care, Dr. Frank Ferris, Medical Director of Palliative Care, San Diego Hospice and Palliative Care Centre, Dr. Soo Khee Chee, Director of National Cancer Centre (NCC) Singapore, Dr. Frans JM Hilgers of the Netherlands Cancer Institute, Dr. Mohammed A. Al-Jarallah, Hon'ble Minister for Health, Kuwait were among them.

RCC is deeply committed to further acquisition of newer technologies and excelling academic programmes in the coming years. The Centre is trying hard to get the status of a deemed to be University which would add new dimensions to our academic agenda and human resource development. I hope our efforts and endeavour will succeed.

B. Rajan

(Dr. B. Rajan)
DIRECTOR

Multispeciality clinics at RCC, Thiruvananthapuram

RCC conducts advanced level multidisciplinary clinics from Monday to Saturday as described below:-

Clinics	Specialities	Services
A. Hemato/Lymphoreticular malignancy & Sarcoma	Medical Oncology Radiation Oncology Surgical Oncology	High-dose chemotherapy, Peripheral Blood Stem cell Transplantation.
B. Head & Neck	Radiation Oncology Medical Oncology Surgical Oncology	External Radiotherapy-both photon & electron Brachytherapy- both High dose Rate (HDR) and Low Dose Rate (LDR).
C. Breast & Central Nervous System	Radiation Oncology Medical Oncology Surgical Oncology	Breast conservation Breast Reconstruction
D. Gynaec & Genitourinary	Radiation Oncology Surgical Oncology Medical Oncology	Brachytherapy- both HDR & LDR Gynec Tumour Board & Genitourinary Tumour Board.
E. Chest & Gastro	Radiation Oncology Surgical Oncology Medical Oncology	Bronchoscopy, Oesophagoscopy, Colonoscopy Colostomy care, Brachytherapy for Lung, Oesophagus, Bile duct, & Anus. Conformal Radiation Gastro-tumour Board.
F. Pediatric Oncology	Pediatric Oncology Radiation Oncology Surgical Oncology	Pediatric Tumour Board Aggressive chemotherapy for high risk Acute leukemias and Non Hodgkins Lymphomas.
G. Thyroid	Nuclear Medicine Surgical Oncology	Thyroid Scan and uptake, Ultrasonography, in vitro assays, radioiodine therapy, radio nuclide therapy.

DEPARTMENTAL ACTIVITIES

RADIATION ONCOLOGY

Dr. B. Rajan	Professor
Dr. P.G. Jayaprakash	Professor
Dr. S. Parameswaran	Additional Professor
Dr. Suresh Chandra Dutt	Additional Professor
Dr. Jayaprakash Madhavan	Additional Professor
Dr. K. Ramdas	Additional Professor
Dr. K. Ratheesan	Additional Professor
Dr. Francis V. James	Associate Professor
Dr. Thomas Koilparambil	Associate Professor
Dr. Beela Sarah Mathew	Associate Professor
Dr. Aswin Kumar	Assistant Professor
Dr. C.D. Sivanandan	Assistant Professor
Dr. Rejnish Kumar	Assistant Professor
Dr. Susan Mathews	Lecturer
Dr. Sajeed A	Lecturer

The Division has a total staff strength of 15 doctors, from Professor to Lecturer level. All of them have training and experience in both state-of-the-art radiotherapy and solid tumour chemotherapy, a matter of prime importance in this era of concurrent chemo-radiotherapy for most major cancer sites. The four major site-wise Clinics conducted by the Division, with the assistance of Surgical and Medical Oncology divisions, are Head & Neck, Breast & Central Nervous System, Gynaec & Genitourinary and Chest & Gastro.

Academic activities

The Division was actively engaged in teaching, organisation of seminars & workshops and clinical & basic research activities of the Centre. The Gynaec & Uro-Oncology clinic of the Division organised a seminar on "Radical treatment of early stage prostate cancer" during October 2004. A workshop on "State-of-the-art techniques in radiotherapy" was also conducted by this clinic on 12th March 2005.

The Chest & Gastro clinic organised CMEs on "Gastrointestinal malignancies" and "Colon & Pancreatic cancer". Each clinic has also conducted regular tumour board meetings jointly with the concerned departments in Medical College, Trivandrum.

Ongoing Research Projects

1. Atlas Trial Project. (Funded by: Atlas Trial Office, Clinical Trial Service Unit, Oxford, UK)
Principal Investigator : Dr. B. Rajan
2. Atlas ER-Assay. (Funded by: Atlas Trial Office, Clinical Trial Service Unit, Oxford, UK)
Principal Investigator : Dr. B. Rajan
3. High Background Radiation Area Project, Karunagapally: Cancer occurrence in the Natural Radiation Area of Kerala. (Funded by: Health Research Foundation, Japan)
Principal Investigator : Dr. B. Rajan
Co-Investigator : Dr. Raghuram K. Nair
4. Establishing a Tobacco Cessation Clinic (Funded by: WHO & Govt. of India)
Principal Investigator : Dr. B. Rajan
Co-Investigator : Dr. Jayakrishnan
5. Development of an in vitro cellular model to predict tumor response to radiotherapy in carcinoma cervix. (Funded by: Kerala State Council for Science, Technology and Environment, Govt. of Kerala).
Principal Investigator : Dr. P.G. Jayaprakash
6. Phase III randomized study of chemo-radiotherapy in Carcinoma cervix with cisplatin + or - gemcite (Funded by: Eli Lilly (India) Pvt. Ltd, Haryana)
Principal Investigator : Dr. P.G. Jayaprakash
7. Gemcite and cisplatin in patients with locally advanced or metastatic urinary bladder cancer. (Funded by: Eli Lilly (India) Pvt. Ltd, Haryana)
Principal Investigator : Dr. P.G. Jayaprakash

8. A randomized, double blind, placebo controlled phase II study of oral recombinant human lactoferrin (rhLF) monotherapy in patients with locally advanced or metastatic non-small cell lung cancer (NSCLC) who have failed 1 or 2 line chemotherapy. (Funded by: Reliance Clinical Research Services, Mumbai)
Principal Investigator : Dr. Jayaprakash Madhavan
Co-Investigator : Dr. C.D. Sivanandan
9. Phase III trial of farnesyl transferase inhibitor in pancreatic cancer.
Principal Investigator: Dr. Jayaprakash Madhavan
10. Phase II trial of docetaxel vs docetaxel + human lactoferrin in lung cancer.
Principal Investigator : Dr. Jayaprakash Madhavan
11. A randomized, double blind, placebo controlled phase II study of oral recombinant human lactoferrin (rhLF) in combination with Carboplatin and Paclitaxel (C/P) chemotherapy in patients with locally advanced and /or metastatic non-small cell lung cancer (NSCLC). (Funded by: Reliance Clinical Research Services, Mumbai.)
Principal Investigator : Dr. Jayaprakash Madhavan
Co-Investigator : Dr. C.D. Sivanandan
12. Randomized clinical trial to test the efficacy of Ayurvedic mouthwash in the management of radiation induced-oral mucositis. (Funded by: Dept. of AYUSH, Govt. of India)
Principal Investigator : Dr. K. Ramdas
13. A phase II randomized, double blind, placebo controlled, multicentre comparative study of ZD1839 250 mg or 500 mg (IRESSA TM) given either continuously or concomitantly with Cisplatin + radiotherapy for the treatment of patients with previously untreated, unresected late stage III/IV non-metastatic Head and Neck squamous cell carcinoma. (Funded by: Quintiles Research India Pvt. Ltd.)
Principal Investigator : Dr. K. Ramdas
14. Trivandrum Oral Cancer Screening (TOCS) Project: Follow up program for oral cancer prevention. (Funded by: International

Agency for Research on Cancer, France)

Principal Investigator : Dr. K. Ramdas

15. Estimation of tobacco attributable mortality in Kerala. *(Funded by: International Agency for Research on Cancer, France)*

Principal Investigator : Dr. K. Ramdas

16. Comparative evaluation of visual inspection after application of acetic acid and lugol's iodine to test clinical cancer prevention. *(Funded by: International Agency for Research on Cancer, France)*

Principal Investigator : Dr. K. Ramdas

17. Efficacy of Varanadi Ghrita as a biological response modifier in controlling the recurrence of treated Head & Neck cancers: a randomized pilot study. *(Funded by: Kerala State Council for Science, Technology and Environment, Govt of Kerala)*

Principal Investigator : Dr. K. Ramdas

18. A phase III randomized, stratified, parallel group, multi-center, comparative study of ZD 1839 (IRESSA) 250 mg and 500 mg versus Methotrexate for previously treated patients with squamous cell carcinoma of the head and neck. *(Funded by: Siro Clinpharm Pvt. Ltd. Mumbai)*

Principal Investigator : Dr. K. Ramdas

19. Molecular epidemiology of cancer of the oral cavity and oropharynx: a multicentre case control study.

Principal Investigator : Dr. K. Ramdas

20. Quality of life assessment in oral cancer patients. *(Funded by: University Grants Commission, New Delhi)*

Principal Investigator : Dr. K. Ramdas

21. Quality of life assessment in breast cancer patients. *(Funded by: Indian Council of Medical Research, New Delhi)*

Principal Investigator : Dr. K. Ramdas

22. Role of anterior chemotherapy in operable stage II and IV carcinoma of tongue: a randomized control trial.

Principal Investigator : Dr. K. Ramdas

23. A randomized, double blind, parallel group, multicentre, phase III study comparing the efficacy and tolerability of Fulvestrant 500 mg with Fulvestrant 250 mg in post-menopausal women with estrogen receptor positive advanced breast cancer progressing or relapsing after previous endocrine therapy.

Principal Investigator : Dr. K. Ratheesan

Co- Investigator : Dr. S. Parameswaran

24. Genetic determinants of treatment response in advanced uterine cervix cancer patients undergoing radical chemoradiotherapy.

Principal Investigator : Dr. Aswin Kumar

Merits, Conferences / Workshops / Training programmes attended, Papers presented

Dr. P.G. Jayaprakash

- 1: Chairman (Technical and Purchasing committee), for the purchase of Telecobalt unit at Malabar Cancer Centre, Thalassery, Kerala.
- 2: Technical Member, for inspection of Radiotherapy facility at Medical College, Trivandrum.
- 3: Examiner, MD/DMRT Examination, Dr. M.G.R. Medical University, Chennai. 26-27 April 2004.
4. Organizing secretary: Workshop on "State-of-the-art technique in radiotherapy", Regional Cancer Centre, Trivandrum. 12 March 2005 & seminar on "Radical treatment of early stage prostate cancer", October 2004.

Dr. P.G. Jayaprakash & Dr. Jayaprakash Madhavan

40th Annual meeting of the American Society of Clinical Oncology, New Orleans, USA. 5-8 June 2004.

Dr. P.G. Jayaprakash, Dr. S. Parameswaran, Dr. K. Ratheesan & Dr. K. Ramdas

XI Biennial conference of the Indian Society of Oncology & XIII Biennial conference of Indian Society of Medical & Pediatric Oncology, Bangalore. 8-10 October 2004.

Dr. P.G. Jayaprakash, Dr. Jayaprakash Madhavan & Dr. Sajeed A.

1st National conference of Indian Brachytherapy Society, Chennai. 5 February 2005.

Dr. P.G. Jayaprakash & Dr. Sajeed A.

European Society for Therapeutic Radiology and Oncology (ESTRO); Annual conference, Tata Memorial Hospital, Mumbai. 28 February-3 March 2005.

Dr. S. Parameswaran

1. Vice-President, Breast cancer foundation of India.
2. VIII Annual conference of breast cancer foundation of India, Cuttack. 6-8 March 2005.
3. 26th Annual national conference of the Association of Radiation Oncologists of India (AROI), Ludhiana. 25-28 November 2004.

Dr. Jayaprakash Madhavan

1. Advanced course in diagnosis and treatment of neuroendocrine tumours, Uppasala University, Sweden. 13-19 November 2004.
2. 26th Annual national conference of the Association of Radiation Oncologists of India (AROI), Ludhiana. 25-28 November 2004. Papers: 1. "Imatinib in metastatic gastrointestinal stromal tumour: RCC experience" & 2. " Case report of complete response of GIST with Imatinib".
3. Clinical investigators meeting of the Lung Cancer Project, Goa. 4-5 July 2004.

Dr. K. Ratheesan

29th European Society of Medical Oncology (ESMO) Conference, Vienna, Austria. 29 October – 2 November 2004.

Dr. Francis V. James

1. XI Biennial conference of the Indian Society of Oncology & XIII Biennial conference of Indian Society of Medical & Pediatric Oncology, Bangalore. 8-10 October 2004. Paper: "Metachromous testicular germ cell tumor; first case report from India".
2. European Society for Therapeutic Radiology and Oncology (ESTRO) annual conference, Tata Memorial Hospital, Mumbai.



*Inauguration of symposium on State-of -the-Art Radiotherapy techniques:
The Ayyagiri Initiative by Professor M. Krishnan Nair,
Founder Director, RCC (12th March 2005)*

28 February-3 March 2005. Paper: "Mould brachytherapy for squamous cell carcinoma-penis".

Dr. Beela Sarah Mathew

1. CME on adjuvant systemic therapy for early breast cancer, Tata Memorial Hospital, Mumbai, 20-21 November 2004
2. Training In Intensity Modulated Radiotherapy, Clatterbridge Centre of Oncology, UK, 10-15 May 2004.

Dr. C.D. Sivanandan

Symposium on Cytóprotection, Jalpur, 17-19 December 2004.

SURGICAL ONCOLOGY

Dr. Paul Sebastian	Additional Professor
Dr. Chitrathara K	Associate Professor (on leave)
Dr. Jem Prabhakar	Associate Professor
Dr. Namrata Dhakkad	Associate Professor (on leave)
Dr. Manoj Pandey	Associate Professor
Dr. Shaji Thomas	Associate Professor
Dr. Bipin T.Varghese	Assistant Professor
Dr. Paul Augustine	Assistant Professor
Dr. Chandramohan K.	Assistant Professor (on deputation)
Dr. Elizabeth Mathew lype	Assistant Professor
Dr. Balagopal P.G	Assistant Professor
Dr. Rema P.	Lecturer
Dr. Kurian Cherian	Lecturer
Dr. Madhu Muralee	Lecturer
Dr. Arun Peter	Lecturer

A notable achievement during the period under report was the commissioning of a Carl Zeiss state-of-the-art operating microscope, Midas Rex precision drill and saw system and other teaching accessories purchased with the help of a FIST Grant of the Department of Science and Technology, Government of India.

Clinical activities

2544 surgeries (Major 2119 and Minor 425) and 1665 endoscopic procedures were carried out during 2004-2005.

Table - 1: Major operations: Site wise distribution

Site	Number	Percentage
Head and Neck	943	44.51
Breast	601	28.36
Thorax & Abdomen	153	7.22
Genito-urinary	209	9.86
Bone & Extremity soft tissue sarcoma	113	5.33
Skin and other miscellaneous tumours	100	4.72
Total	2119	100



Dr. K. Mohandas, Director of Sree Chitra Tirunal Institute of Medical Sciences and Technology, delivering the inaugural address at the CME on 'Reconstructive Options in Oncology' (23.01.05). Chief Guest - Dr. Soo Khee Chee, Director, National Cancer Centre, Singapore.

Table - 2: Head and Neck Cancer: Site wise distribution

Site	Number	Percentage
Oral cavity & Oropharynx	522	55.36
Larynx & Hypopharynx	27	2.86
Metastatic neck nodes	121	12.83
Thyroid	152	16.12
Salivary glands	32	3.39
Others	89	9.44
Total	943	100

Table - 3: Breast cancer: Operative procedures

Procedure	Numbers
Modified Radical Mastectomy	428
Breast conservation	161
Breast reconstruction	12
Total	601

Table - 4: Endoscopic procedures

Procedures	Numbers
Nasopharyngoscopy	602
Bronchoscopy	140
Upper GI Endoscopy	385
Colonoscopy	232
Oesophageal stricture dilatation	28
Oesophageal stenting	11
Rigid Nasal Endoscopy & DL- Scopy	173
Cystoscopy / Colposcopy	61
LEEP	33
Total	1665

Academic Activities

1. Organized '2nd international workshop on Post-laryngectomy voice rehabilitation', on 31 December 2004.
2. Organized CME on "Reconstructive options in oncology", on 23 January 2005.

3. Training in Surgical Oncology for postgraduates in Surgery, ENT and Maxillofacial Surgery from various medical and dental colleges in Kerala, Tamil Nadu and Karnataka.

Ongoing Research Projects

1. Molecular analysis of surgical markers in oral cancer patients. (Funded by: State Council for Science, Technology & Environment, Govt. of Kerala)
Principal Investigator : Dr. Paul Sebastian
Co-investigator : Dr. Bipin T.Varghese
2. Multicentric clinical study on role of IRESSA (Gefitinib) Epidermal Growth Factor in inoperable Head and Neck cancers. (Sponsored by: Quintiles).
Co-investigator : Dr. Bipin T.Varghese
3. Mode of INK4A/MTS1 inactivation and over expression of RB1 genes of oral carcinoma. (Funded by: Department of Science & Technology, Govt. of India)
Co-investigator : Dr. Paul Sebastian
4. Photodiagnosis of oral cancer using laser induced fluorescence and reflectance spectroscopy. (Funded by: Dept. of Biotechnology, Govt. of India)
Co-investigator : Dr. Paul Sebastian
5. Trivandrum Oral Cancer Screening Study (TOCS). (Funded by: International Agency for Research on Cancer (IARC), France)
Co-investigators : Dr. Paul Sebastian, Dr. Manoj Pandey
6. Cervical Cancer Control Project. (Funded by: IARC, France & Bill and Mellinda Gates Foundation, USA)
Co-investigators : Dr. Paul Sebastian, Dr. Rema P.
7. Trivandrum Quality of Life Study (TQOLS) in patients with head and neck cancer undergoing curative treatment (Funded by UGC, New Delhi).
Co-investigator : Manoj Pandey
8. Trivandrum Quality of Life Study (TQOLS) in patients with breast

cancer undergoing curative treatment. (Funded by: ICMR, New Delhi)

- Co-investigator : Dr. Manoj Pandey
9. Prospective study on the necessity of hemithyroidectomy in laryngectomy.
Principal Investigator : Dr. Paul Sebastian
Co-investigator : Dr. Elizabeth Mathew Iype
10. Risk factors for failure of PMMC flaps in Head and Neck cancer.
Principal Investigator : Dr. Paul Sebastian
Co-investigator : Dr. Balagopal PG
11. Role of anterior chemotherapy in locally advanced carcinoma tongue: A randomized controlled study.
Co-investigators : Dr. Paul Sebastian, Dr. Shaji Thomas, Dr. Bipin T. Varghese, Dr. Elizabeth Mathew Iype, Dr. Balagopal PG

Fellowship, Conferences / Workshops / Training programmes attended, Papers presented

Dr. Paul Sebastian

1. International visiting Fellow at Department of Otolaryngology, Head and Neck Surgery and Loyola University Medical College, with Dr. Guy Petruzelli, Chairman of Dept. of Otolaryngology Services, Chicago. 16-21 August 2004.
2. 16th International Head and Neck cancer conference, Washington DC. 8-11 August 2004. Papers: 1. "Fate of skin component of intra orally placed flap in head and neck cancer". 2. "Simple technique for identification and preservation of marginal mandibular nerve in Head and Neck surgery".
3. 5th Annual meeting of International Network for Cancer Treatment and Research (INCTR), Cairo, Egypt. 2-5 October 2004. Talk on "Simple, low cost innovative technique for head and neck reconstruction - 10 year experience from a RCC in a developing country".

4. Head and Neck Cooperative Oncology Group, Cochin. November 2004. Talk on, "Regulations in the conduct of randomized clinical trials".
5. Workshop on cancer research methodology, Tata Memorial Hospital, Mumbai. 18-19 November 2004.

Dr. Jem Prabhakar

1. XIV National conference and workshop of the Indian Association of Surgical Gastroenterology, Kochi. 16-19 September 2004.
2. Training in microvascular techniques conducted by the Indian Society of Reconstructive Microsurgery, at the Ethicon Institute of Surgical Education, Delhi. October 2004.
3. Workshop on cancer research methodology, Tata Memorial Hospital, Mumbai. 18-19 November 2004.
4. Adjuvant systemic therapy in breast cancer, Tata Memorial Hospital, Mumbai. 20-21 November 2004.

Dr. Jem Prabhakar & Dr. Bipin T. Varghese

- XI Biennial conference of the Indian Society of Oncology and XII Biennial conference of the Indian Society of Medical and Paediatric Oncology, Bangalore. 7-10 October 2004.

Dr. Shaji Thomas

1. Organized CME on "Reconstructive options in oncology" at Regional Cancer Centre, Trivandrum. 23 January 2005.
2. CME on Post laryngectomy voice rehabilitation, RCC, Trivandrum. 31 December 2004.
3. Advanced hands on microsurgical training course (one week), Ganga Hospital, Coimbatore. 31 May - 7 June 2004.
4. Indo-American CME, Trivandrum. 29-30 December 2004.

Dr. Bipin T. Varghese

1. Annual state conference of Association of Otolaryngologists of India - Kerala Chapter (KENTCON 2004), Trivandrum, November 2004. Lecture on "Near Total Laryngectomy".

2. Organizing secretary: 2nd International CME on voice preservation and rehabilitation in laryngectomy, RCC, Trivandrum. 31 December 2004.

3. 4th Annual national conference of the Foundation for Head and Neck Oncology, Hyderabad. 4 - 6 January 2005. Paper: "Near total laryngectomy for advanced cancer of larynx and hypopharynx".

4. Advanced hands on microsurgical training course (one week), Ganga Hospital, Coimbatore. 31 May - 7 June 2004.

Dr. Elizabeth Mathew Iype

1. 6th International Head and Neck cancer conference, Washington DC. 6-11 August 2004. Papers: 1. "The role of supraomohyoid neck dissection in the management of N0 neck in oral cancer". 2. "Treatment results of 1068 cases of carcinoma larynx".

2. Annual state conference of Association of Otolaryngologists of India - Kerala Chapter (KENTCON 2004), Trivandrum. November 2004.

3. 4th Annual national conference of the Foundation for Head and Neck Oncology, Hyderabad. 4 - 6 January 2005. Paper: "The use of stapler in laryngeal surgery".

Dr. Paul Augustine

1. XIV National conference of Indian Association of Surgical Gastroenterology (IASG 2004), Kochi. 16-19 September 2004.

2. Workshop on cancer research methodology, Tata Memorial Hospital, Mumbai. 18-19 November 2004.

3. Adjuvant systemic therapy in breast cancer, Tata Memorial Hospital, Mumbai. 20-21 November 2004.

4. Indo-American CME, Trivandrum. 29-30 December 2004.

Dr. Balagopal P.G.

1. 53rd annual conference of Neurological Society of India, Indore. 16-19 December 2004.

2. Mid term conference of the Neurological Society of India, Kerala Chapter.
3. Indo-American CME, Trivandrum. 29-30 December 2004.

Dr. Rema P.

1. International symposium on Gynaec-Oncology, Bangalore. 7-8 December 2004.
2. Colposcopy: alternative cervical cancer screening strategies and treatment of pre invasive lesions, Regional Cancer Centre, Trivandrum. 7-12 November 2004.

Dr. Kurian Cherian & Dr. Madhu Muralee

1. CME on Post-laryngectomy voice rehabilitation, Regional Cancer Centre, Trivandrum. 31 December 2004
2. CME on "Reconstructive options in oncology", Regional Cancer Centre, Trivandrum. 23 January 2005.

Dr. Arun Peter

1. Annual conference of the Vascular Society of India, Bangalore. November 2004.



Interactive session with Prof. Frans JM Hilgers, Chairman, Department of Head and Neck Surgical Oncology, The Netherlands Cancer Institute and Prof. B. Rajasekhar, Head of Dept. of Speech and Hearing, Kasturba Medical College, Manipal at the 2nd International CME on Post Laryngectomy Voice Rehabilitation (31st December 2004)



*Shri. K.K.Ramachandran Master, Hon'ble Minister for Health. Govt. of Kerala
inaugurating the Operating Microscope & Ultrasound scanner (22nd December 2004)*

MEDICAL ONCOLOGY

Dr. Geetha N	Additional Professor
Dr. Sreejith Nair	Associate Professor
Dr. Mirsa Hussain	Assistant Professor
Dr. Prakash N P	Assistant Professor (On Leave)
Dr. Santhosh Thyagu	Lecturer
Dr. Lall V S	Resident Medical Officer

Clinical activities

The Division is primarily involved in the diagnosis and management of haematological and lymphoreticular malignancies, sarcomas and other solid tumors where intensive chemotherapy is indicated. It conducted outpatient clinics on 6 days a week and 1500 new cases were seen during the reporting year. The follow ups were about 20000. About 2500 patients were administered high profile chemotherapy. Autologous bone marrow transplantation, following high dose chemotherapy, for multiple myeloma was performed in 6 patients.

Academic activities

Postgraduate residents in General Medicine and Radiation Oncology were given training in Medical Oncology. In addition, staff nurses were given training in patient care. A Continuing Medical Education programme was also conducted.

Ongoing Research Projects

1. Limb-salvage surgery versus above knee amputation for osteosarcoma of lower extremity: A comparative assessment of functional outcome and quality-of-life.
Principal Investigator : Dr. Geetha N.
2. Molecular Remission with Arsenic Trioxide in Acute Promyelocytic Leukaemia (Indian APML Study Group - IASG)
Principal Investigator : Dr. Geetha N.
3. Recombinant Human Granulocyte Colony Stimulating Factor (rHu-GCSF) in Acute Myeloid Leukaemia.
Principal Investigator : Dr. Geetha N.

4. A clinical study to evaluate the tolerability, safety and efficacy of amphotericin B emulsion (Amphomul) as empirical antifungal therapy in patients with febrile neutropenia.

Principal Investigator : Dr. Geetha N.

5. Protocol Number TTP-200-03-01. A randomized trial of Pivane plus Docetaxel or Docetaxel monotherapy in patients with chemotherapy resistant advanced Non Small Cell Lung Cancer.

Co-Investigator : Dr. Geetha N.

Conferences attended/Papers presented, Nominations

Dr. Geetha N

1. 29th European Society of Medical Oncology conference, Vienna, Austria. 29 October- 2 November 2004. Paper: "Lymphoblastic lymphoma: a review of 56 cases from India".
2. XI Biennial conference of the Indian Society of Oncology and XII Biennial conference of the Indian Society of Medical and Paediatric Oncology, Bangalore. 7-10 October 2004.

Papers: 1. Results of treatment of high grade Non Hodgkin's lymphoma with MCP 842. 2. Tetraploid acute lymphatic leukemia in association with skeletal lesions – a rare entity. 3. Acute lymphoblastic leukemia & lymphoblastic lymphoma presenting with skin and subcutaneous involvement. 4. Multifocal synchronous osteosarcoma

3. Member, American Society of Hematology and European Society of Medical Oncology

Dr. Santhosh Thyagu

1. Indo-American CME, Trivandrum. 29-30 December 2004
2. International haematology conference, Mumbai. January 2005.

Dr. Lali V S

XI Biennial conference of the Indian Society of Oncology and XII Biennial conference of the Indian Society of Medical and Paediatric Oncology, Bangalore. 7-10 October 2004.

- Papers: 1. Extraskelatal osteosarcoma: a review of 8 cases.
2. Malignant lymphoma presenting as ovarian mass.



Inauguration of 'Prathyasa', a patient welfare organization for children with cancer (28th December 2004)

PAEDIATRIC ONCOLOGY

Dr. P. Kusumakumary

Additional Professor & Head

Dr. Priya Kumari T

Associate Professor

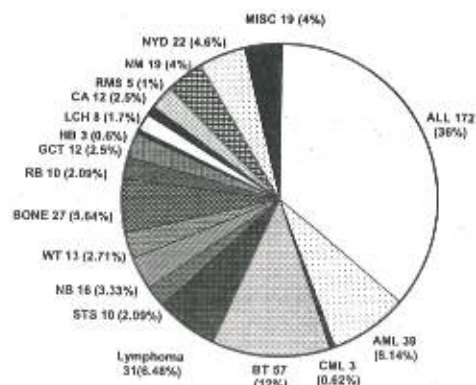
Dr. Usha Suresh

Lecturer

Clinical Activities

Table - 5: Patient statistics

Paediatric Cases	No	Percentage
Acute Lymphoblastic Leukaemia	172	36
Acute Myeloid Leukaemia	39	8.14
AML	3	0.62
Brain Tumour	57	12
Lymphoma	31	6.48
Soft Tissue Sarcoma	10	2.09
Neuroblastoma	16	3.33
Wilm's Tumour	13	2.71
Bone Tumour	27	5.64
Retinoblastoma	10	2.09
Germ Cell Tumour	12	2.5
Hepatic Tumour	3	0.6
Histiocytosis	8	1.7
Rhabdomyosarcoma	5	1
Carcinoma	12	2.5
Non Malignant	19	4
NYD	22	4.6
Miscellaneous	19	4
Total number of new patients	471	100
Total number of out patient visits	13,654	



The most common malignancy reported was Acute Lymphoblastic Leukaemia (36%).

Paediatric tumour boards with a multidisciplinary team consisting of Paediatric Oncologists, Radiation Oncologists, Paediatric Surgeons and Pathologists were conducted on every Monday at 2 pm and major management decisions were taken by this team. The Division also conducted counselling sessions for parents also.

Academic and Research activities

Teaching and training of Postgraduates of Paediatrics and Radiotherapy, Undergraduate medical students, M.Sc. & B.Sc. nursing students.

Conferences / Workshops attended, Papers presented

Dr. P. Kusumakumari

- 5th Annual meeting of International Network for Cancer Treatment and Research (INCTR), Cairo, Egypt. 2-5 October 2004.
- Paediatric Hematology Oncology CME (PHOCON), KMC Manipal 4 – 5 November 2004. Invited talk : "Ewings Sarcoma - recent advances in management" & "Wilms tumour – Update".

Dr. P. Kusumakumari & Dr. Priya Kumari T

36th Congress of the International Society of Paediatric Oncology (SIOP 2004), Oslo, Norway. 16 – 19 September 2004.



'Music for Relief'. (Sangeetha Santhwanam). Music concert for patients by Shri.Balachandra Menon (25th October 2004)

CYTOPATHOLOGY

Dr. Elizabeth K. Abraham	Professor & Head
Dr. Jayasree K	Additional Professor
Dr. Rekha A. Nair	Associate Professor
Dr. Anitha Mathews	Associate Professor
Dr. Thara Somanathan	Assistant Professor
Dr. Nileena Nayak	Assistant Professor
Dr. TR Preethi	Lecturer
Dr. K Raveendran Pillai	Assistant Professor
Dr. S Lakshmi	Lecturer

1. Achievements

The Division was awarded a sum of Rs. 29 lakhs under the FIST programme of the Department of Science and Technology, Govt. of India, to improve the infrastructure for Teaching and Research in Molecular Pathology.

A WHO In country Fellowship training programme was commenced for "Cytopathology with emphasis on Cancer Cytology" and Two doctors from Tripura are undergoing training.

Work is in progress for 'Development of training module and manual for Laboratory Technicians for District Cancer Control Programme', under WHO funding.

Telepathology consultations were done with Tata Memorial Hospital, Mumbai and Early Cancer Detection Centre, Emakulam through the Telemedicine network of RCC.

2. Diagnostic Services

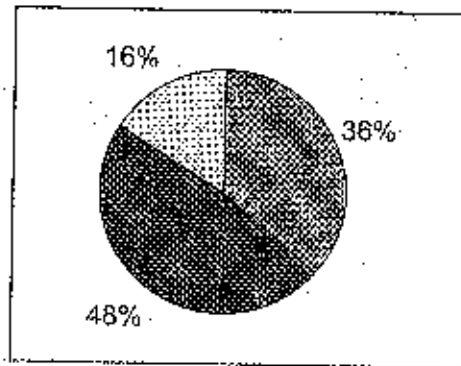
A. Total Workload at a Glance

A total of 26889 diagnostic cases were studied, which included 9781 Surgical pathology, 12811 Cytopathology, and 4297 Haematopathology cases. Among this malignancy was reported in 10556 cases. (Table - 6 & Fig. 1)

Table - 6: Total workload

	Surgical pathology	Haemato pathology	Cytopathology	Total
No. of cases	9781	4297	12811	26889
Malignancy	7482	911	2163	10556

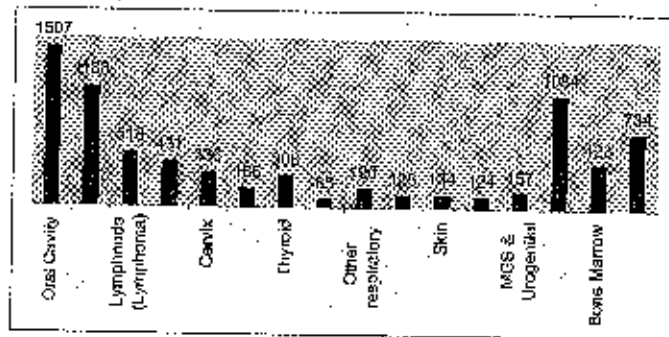
Fig. - 1: Total workload (n=26889)



B. Surgical pathology

a) Histopathology: Out of the 9781 cases of histopathological specimens, 6683 cases were surgical specimens of the Centre and 3098 were review cases referred from other hospitals. Among these malignancy was reported in 6398 cases. The predominant sites of malignancy were oral cavity, breast, GIT, cervix, and lymph nodes (Fig. 2)

Fig. - 2: Surgical Pathology - Malignant cases (n=6398)

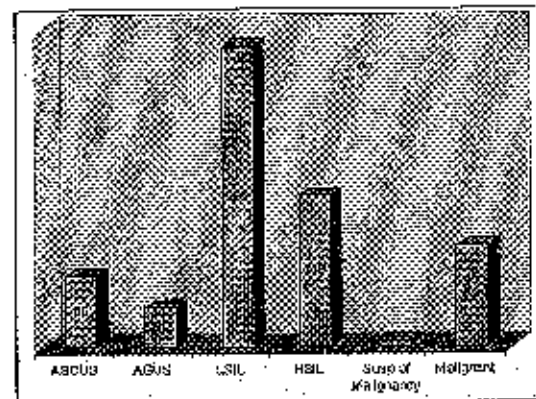


b) Immunohistochemical (IHC) staining: IHC staining was done in cases where diagnostic difficulty was met by routine stains. Immunophenotyping was carried out on almost all lymphoma cases. Out of the 3838 immunohistochemical tests performed, 1163 were for assessing Estrogen receptor status, 680 tests for Progesterone receptor status and 338 for Her2neu marker detection in breast cancer patients. Rest of the immunomarkers were done for proper classification of undifferentiated tumors.

C. Cytopathology

1) Gynaec Cytopathology: 4804 cervical smears were examined, of which 525 cases were from different projects. Out of this, 525 were having epithelial lesions / malignancy (Fig. 3) and 4279 were negative for epithelial lesions. Second opinion on cervical smears were given to smears referred from Peripheral centers.

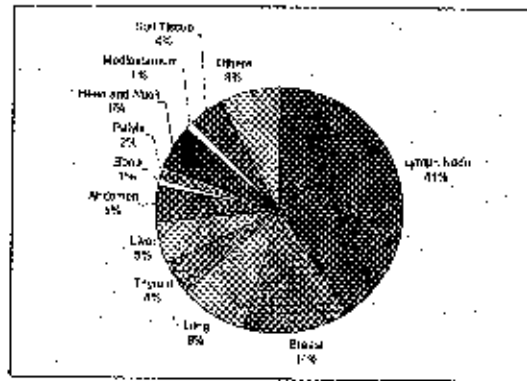
Fig. 3: Cervical epithelial lesions / malignancy (n=525)



ASCUS - Atypical Squamous Cells of Undetermined Significance
 AGUS - Atypical Glandular Cells of Undetermined Significance
 LSIL - Low grade Squamous Intra epithelial Lesion
 HSL - High grade Squamous Intra epithelial Lesion

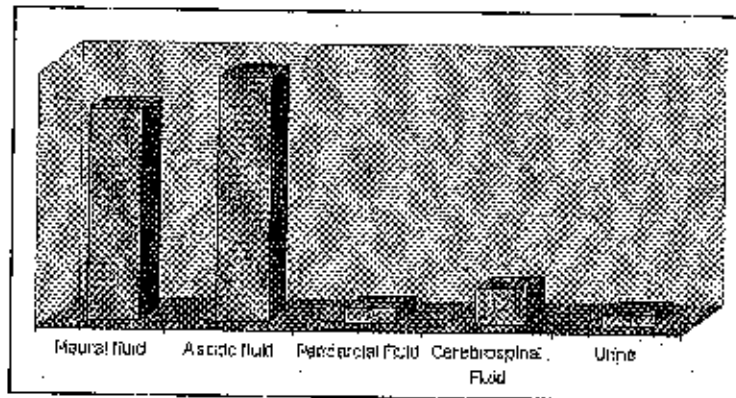
2) Fine Needle Aspiration Cytology: 6311 Fine needle aspirations were performed and the major sites of aspiration were lymph node (1481), thyroid (1041) and breast (890). Out of this 1795 were malignant. Among the malignancies, majority were lymph nodes (727) of which 604 were metastatic. (Fig. 4)

Fig. - 4: FNAC - Malignant lesions (n=1795)



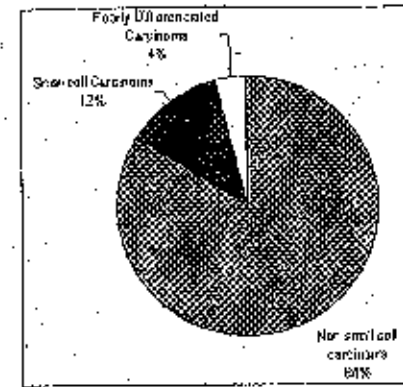
c) Fluid Cytology: A total of 1078 effusions and other body fluid samples were processed, which included Cerebrospinal fluid (53), Ascitic fluid (274), Pleural fluid (215), Urine (19) and Pericardial fluid (37). Among these malignancy was reported in 181 samples. (Fig. 5)

Fig. - 5: Fluid cytology - Malignant (n=181)



d) Sputum Cytology: Out of the 618 sputum samples studied malignancy was reported in 50 cases. 51 cases were reported have atypical / suspicious cells for malignancy (Fig. 6)

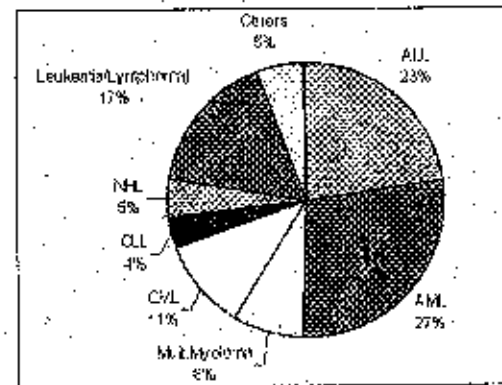
Fig. - 6: Sputum cytology - Malignant (n=50)



D Haematopathology

279 haematopathological cases were studied including 3062 bone marrow samples, 1019 peripheral blood smears and 198 haematology slide reviews. Out of this malignancies were reported in 91 and it included 208 Acute Lymphoblastic Leukemia, 251 Acute Myeloid Leukemia, 98 Chronic Myeloid Leukemia, 33 Chronic Lymphoblastic Leukemia, 42 Non-Hodgkins Lymphoma, 154 Leukemia/Lymphoma and 75 Multiple myeloma cases. (Fig. 7) Surface immunotyping was done on 256 cases.

Fig. - 7: Haematological malignancies - Bone marrow (n=911)



3. Teaching / Training programmes

Regular one year Post-doctoral Certificate in Oncopathology and one year Cytotechnologists training were conducted in addition to the training provided for Cytotechnicians and Histotechnicians. Short term theory and practical teaching were provided to B.Sc. (Medical) students of Mahatma Gandhi University, Kottayam. One month posting was given to MD Pathology students of Kottayam, Calicut and Trivandrum Medical Colleges. Hands on training in histotechnology and immunohistochemistry was given to laboratory technicians.

4. Academic activities

Organised CME programme on "Cytology of Effusions", 8 January 2005, for Pathologists and Cytotechnologists throughout Kerala and adjacent Tamil Nadu. Regular slide seminars, journal conference, tumour board meetings in RCC and SAT hospital were conducted.

5. Ongoing Research Projects

1. Trivandrum Oral Cancer Screening project. (Funded by International Agency for Research on Cancer, France)
Co-investigators : Dr. Elizabeth K. Abraham & Dr. Thara Somanathan
2. Adjuvant tamoxifen in breast cancer - Long against short (Funded by: Clinical Services unit, Oxford, UK)
Co-investigator : Dr. Elizabeth K. Abraham
3. Multicentric project on evaluation & validation of molecular markers in oral cancer. (Funded by: Dept of Biotechnology)
Co-investigator : Dr. Elizabeth K. Abraham
4. Tumour suppressor genes in nasopharyngeal carcinoma - evaluation. (Funded by: State Council for Science, Technology and Environment).
Principal Investigator : Dr. K. Jayasree
5. Human papillomavirus associated cancers in Natural Background Radiation area of Kerala- Evaluation of HPV genotypes in relation to radiation exposure levels. (Funded by: Department of Epidemiology and Preventive Medicine, Kagoshima University, Japan)
Principal Investigator : Dr. K. Jayasree

Comparative evaluation of early detection of cervical cancer precursors by VIA, VILI, HPV testing and colposcopy. (Funded by: International Agency for Research on Cancer, France)

Co-investigator : Dr. Thara Somanathan

Phase II randomized double blind placebo controlled multicentre comparative study of ZD1839-250/500mg (IRESSA) given either continuously or concomitantly with cisplatin and radiotherapy for treatment of patients with previously untreated, unresected late stage III/IV, no metastasis Head and Neck squamous cell carcinoma.

Co-investigator : Dr. Nileena Nayak

Phase III randomized stratified parallel group multicentre comparative study of ZD1839-250/500mg (IRESSA) versus methotrexate for previously treated patients with squamous cell carcinoma of Head and Neck.

Co-investigator : Dr. Nileena Nayak

Identification of markers for biological grading of malignant lesions in the bronchopulmonary mucosa. (Funded by: State Council for Science Technology and Environment).

Principal Investigator : Dr. K. Raveendran Pilla

Co-investigator : Dr. Elizabeth K. Abraham

Trivandrum Corporation Cervical Cancer Control Programme. (Funded by: Corporation of Trivandrum)

Co-investigators : Dr. K. Raveendran Pillai & Dr. K. Sujathan

Study of Gal-3, Gal-1, T-antigen and Bcl2 expression in breast cancer. (Funded by: State Council for Science Technology and Environment).

Principal Investigator : Dr. K. Sujathan

Co-investigator : Dr. Elizabeth K. Abraham

Development of human papillomavirus vaccine prototype/s - Molecular epidemiology of HPV types prevalent in India and identification of HPV-16 L1 & E6 variants. (Funded by: Department of Biotechnology)

Co-investigator : Dr. Lakshmi S.

6. Awards, Conferences / CMEs / Workshops attended, Papers presented

Dr. Elizabeth K. Abraham, Dr. Rekha A. Nair, Dr. Anitha Mathews & Dr. Nileena Nayak

7th Annual CME programme of International Academy of Pathology (Indian Division)- (IAP-ID), SCTIMST, Trivandrum. 26 September 2004.

Dr. Elizabeth K. Abraham, Dr. Rekha A. Nair, Dr. Anitha Mathews & Dr. Thara Somanathan, Dr. Raveendran Pillai K. & Sri. Jayalal K.S.

CME on "Colposcopy training and cervical precancer management" at the International School of Colposcopy, Community Oncology, RCC Trivandrum. 7-11 November 2004.

Dr. Elizabeth K. Abraham, Dr. Rekha A. Nair, Dr. Nileena Nayak, Dr. Raveendran Pillai K., Dr. Lakshmi S., Sri. Mani K.S. & Sri. Jayalal K.S.

CME on "Flow Cytometry: Principles and applications", RCC Trivandrum. 9 November 2004.

Dr. K. Jayasree

1. Awarded UICC-ICRETT Fellowship for short term training (Visiting Clinician Programme) in Mayo Clinic, Rochester, Minnesota, USA under the guidance of Dr. K. Krishnan Unni, from August to October, 2004.
2. National oral and maxillofacial pathology conference, Calicut November 2004.
3. Practical Surgical Pathology CME Program at Mayo Clinic, Rochester, Minnesota, USA. 16-18 September 2004.
4. International Skeletal Society course on musculoskeletal radiology and interactive orthopaedic radiology, pathology meeting, TMH, Bombay. February 2005.

Dr. Rekha A. Nair

1. Indian Association of Pathologists and Microbiologists (Kerala chapter) meeting, Kochi. 14 August 2004.



Inauguration of the CME on Cytology of Effusions by Dr. M. Balaraman Nair, Former Director of Medical Education (8th January 2005).

2. EMBO (European Molecular Biology Laboratory) workshop on "Cell interactions in development and disease", CCMB, Hyderabad. 16-18 December 2004.
3. 1st Annual International conference on "Translational research for cancer and other diseases", CCMB, Hyderabad. 19-20 March 2005.

Dr. Anitha Mathews

XI biennial conference of Indian Society of Oncology & XIII biennial conference of Indian Society of Medical & Paediatric Oncology, Bangalore. 7-10 October 2004. Paper: "Adrenal cortical carcinoma with vaginal metastasis".

Dr. Thara Somanathan

64th annual conference of Indian Academy of Cytologists, Bhopal. December 2004.

Dr. K. Raveendran Pillai

24th Annual convention of the Indian Association of Cancer Research and International symposium on Human Papillomavirus and cervical cancer, Noida. 9-12 February 2005. Paper: "Expression pattern of tumour associated genes in Small cell carcinoma and Non-small cell carcinoma of lung".

Dr. K. Sujathan

24th Annual convention of the Indian Association of Cancer Research and International symposium on Human Papillomavirus and cervical cancer, Noida. 9-12 February 2005.

IMAGEOLOGY

Dr. K. Ramachandran Professor & Head
 Dr. A.S. Krishnakumar Additional Professor
 Dr. M.Venugopal Assistant Professor

Table -7: Diagnostic and interventional studies done

Plain X-ray	23636
Special investigations using X-rays :	
Barium meal	26
Barium swallow	329
Barium enema	6
Mammography single	1496
Mammography double	1283
CT Scan	6543
CT & guided procedures	340
Ultrasound	8852
Doppler studies	153
USS guided FNAC	276

Academic Activities:

Training and short term postings in various imaging modalities including mammography were provided to Radiologists from various parts of Kerala. 2 Post graduate doctors had observer training in ultrasound for 6 weeks. Postgraduate students (4 nos.) from Dental Colleges in Trivandrum and Kamataka had posting in the Division. In addition to the daily noon clinics, the Division actively participated in the monthly meetings of Trivandrum Radiology Club, Pulmonary Radiology Club in SUT Hospital, etc.

The Division continues to impart training to undergraduate medical students, CRA students and Diploma holders, MLT students etc. Interesting and rare films were added to the film library, which was well utilized by the radiologists and students alike.

The Division jointly sponsored the CME in connection with the annual State meeting of Indian Radiological & Imaging Association, Kerala

at Achuthamenon Centre, SCTIMST, Thiruvananthapuram. Another notable achievement is the commissioning of a state-of-the-art Doppler Ultrasound machine (Aloka SSD 3500). Steps have been initiated to install in the next academic year a Mammography unit, stereotaxy and Mammotome Biopsy facility, 16 Slice Multi-slice CT Scanner, another Ultrasound scanner, etc.

Merits, Conferences / Workshops / Training programme attended, Papers presented

Dr. K. Ramachandran

1. Examiner MD (Radiodiagnosis) & DMRD in University of Kerala University of Calicut.

2. 58th Annual congress of Indian Radiological & Imaging Association, Agra. 22- 25 January 2005. Paper, "Mammography in carcinoma breast: a Regional Cancer Centre experience".

3. IMA workshop on "Malaria and Dengue fever", Trivandrum. 23 May 2004.

Dr. K. Ramachandran, Dr. A. S. Krishnakumar & Dr. M. Venugopal

1. Annual State conference of Indian Radiological & Imaging Association and CME programme in Radiodiagnosis, Achuthamenon Centre, SCTIMST, Trivandrum. 13-14 November 2004

Dr. A. S. Krishnakumar

1. Annual conference of the Society of Nuclear Medicine, Southern Chapter, Trivandrum. 12 June 2004

2. XI Conference of Indian Society of Oncology, Bangalore. 8-10 August, 2004.

3. CME on MRI abdomen, Nizam Institute, Hyderabad. 19- 23 November 2004.

Dr. K. Ramachandran & Dr. M. Venugopal

1. Orientation training on "Infertility management", Kerala State Institute of Health and Family Welfare, Thiruvananthapuram. 1st & 17th March 2005.

NUCLEAR MEDICINE

Dr. V. M. Pradeep

Additional Professor & Head

Dr. A. Sreekumar

Associate Professor

The Division provides diagnostic and therapeutic facilities using of radioactive sources. The services offered include in-vitro assays, in vivo diagnostics, various types of scans, treatment for thyrotoxicosis and thyroid cancer as well as palliative treatment of bone pain. It is the only center in the State that provides high-dose therapy using radioactive sources. The In-vitro assay section was the first of its kind to start functioning in the State in the early 1981. The division also participated in academic activities including teaching and research collaborations.

Thyroid Clinic

The major part of the work comprised evaluation and treatment of Thyroid disorders. Facilities included thyroid scanning, ultrasonography, in-vitro assays, and radiolodine therapy. 136 cases attended the thyroid clinic as new cases with direct referrals as well as follow-up cases. These were primarily cases of Thyroid cancer and Thyrotoxicosis. The other cases were referred for various investigations such as thyroid function tests, thyroid uptake and scan. The commissioning of the new ultrasound machine has further improved the patient care provided.

Thyroid scans & Uptake	3637
Thyroid ultrasound	394
Thyrotoxicosis	173
Ca Thyroid	572

Thyroid scans were done with radioiodine (I-131) & technetium (Tc99m). Large dose, whole body radiolodine scans were done for Ca Thyroid. For medullary thyroid cancers 99m-Tc(V) DMSA was used.

Immunoassay

The Immunoassay section performed 17725 assays of thyroid hormones, tumor markers, and miscellaneous assays.

Imaging (Gamma Camera)

The Division has a Siemens Gamma Camera, Basicam Model with a micro delta computer and is used for static and dynamic scintigraphy. It is also used for dynamic renal studies including pediatric renal evaluation. Technetium for the purpose of these scans is eluted from Molybdenum using Mo-Tc generator from BARC. Scanning for medullary thyroid carcinomas is being done using 99mTc(V)-DMSA and 31-I-MIBG.

Radionuclide therapy

Radionuclide therapy section of this Division is one of the largest in the country. The Division has been recognized by the Atomic Energy Regulatory Board as a training Centre for high dose treatment with various radioactive sources. The division has a full-fledged radionuclide therapy ward with delay tank for the treatment of thyroid cancer. There are facilities for bone pain palliation using 89-Sr and 153-Samarium.

Conferences attended / Papers presented

Dr. V.M. Pradeep

Annual conference of the Indian Radiological and Imaging Association, Kerala chapter, SCTIMST, Thiruvananthapuram, 13-14 November 2004. Chaired the session: "Nuclear Medicine in renal disorders".

Dr. A. Sreekumar

Annual conference of the Society of Nuclear Medicine, Southern chapter, 12 June 2004. Paper: "An interesting case report of carcinoma lung with paraneoplastic syndrome".

2nd Annual conference of the Association of Nuclear Medicine Physicians of India, Darjeeling, 28-31 October 2004. Paper: "Insular carcinoma thyroid".

RADIATION PHYSICS

Dr. Raghu Ram K. Nair	Associate Professor
Dr. Thayal Singh Elias	Associate Professor
Sri. Raghu Kumar P	Assistant Professor
Sri. Saju B	Assistant Professor
Sri. Giri Purushothaman	Lecturer- Electronics Engineering
Dr. C. A. Davis	Additional Professor (on leave)

Table - 8: Patient Services

Services	Total Number
External Beam Radiotherapy	7330
Brachytherapy	1338
Conventional	
Interstitial Implantation	48
Mould	1
Microselectron HDR	
Gynaec	1127
Oesophagus	137
Bronchus	6
Others	19
Total	8668
Simulator	6532
Mould Room Shells & Special blocks	2264

Academic Activities

Classes were conducted in Medical Physics and practical training were imparted to students of: DRT, B.Sc. MLT, DMLT, B.Sc. & M.Sc. Nursing, MBBS, DMRT, DMRD, MDS (Oral Radiology), MCh Radiotherapy, MD & Dip NB (Radiodiagnosis)

Training Program

Three months Refresher program in Imageology/Nuclear Medicine Radiotherapy for Radiographers started in 1994 has covered 28 trainees in Imageology/Nuclear Medicine and 30 trainees in Radiotherapy till March 2005. Two Dip RP students from BARC, Mumbai attended two months training in 2004.

Ongoing Research Projects

Natural Background Radiation Registry (NBRR): Physics Studies (Funded by: Health Research Foundation, Japan) TLD and SSNTD dose measurements completed. Work under way for cancer risk estimation.

Co-Principal Investigator : Dr. Raghu Ram K. Nair
Development of indigenous software controlled remote afterloading micro high dose rate system in brachytherapy. (Funded by: Department of Science & Technology, Govt. of India)

Principal Investigator : Dr. T.S. Elias

Merits, Conferences / Workshops / Symposia attended, Papers presented

- 1. **Dr. Raghu Ram K. Nair**
Physics Examiner for MD (Radiodiagnosis) / DMRD of University of Kerala.
- 2. Research supervision for PhD programs in Mahatma Gandhi University, Kottayam and University of Kerala.
- 3. Program committee member- International conference on "High Levels of Natural Radiation and Radon Areas", Osaka, Japan. 6-10 September 2004. Paper: "Individual dose estimation- our experience with the Karunagappally study in Kerala, India".

Dr. Raghu Ram K. Nair, Dr. Thayal Singh Elias, Sri. P. Raghukumar & Sri. Saju B.
State-of-the-art Radiotherapy"- Ayyagiri initiative symposium, RCC, Trivandrum. 12-13 March 2005.

Dr. Raghu Ram K. Nair & Sri. P. Raghukumar

European Society for Therapeutic Radiology and Oncology (ESTRO) International symposium, Tata Memorial Hospital, Mumbai. February - 3 March 2005.

Sri P. Raghukumar

1. Examiner, B. Sc. MRT of Mahatma Gandhi University, Kottayam. Supervising guide for M.Sc. Physics project students.
2. Workshop on IMRT, Tata Memorial Hospital, Mumbai. 24-25 September 2004.
3. International seminar on Brachytherapy, Indian Brachytherapy Society, Chennai. 5 February 2005.

Sri. Saju B

1. Supervising guide for M.Sc. Physics project students.
2. Training in Intensity Modulated Radiotherapy, Pearson Hospital, UK. 24 May - 3 June 2004.
3. Annual conference of the Association of Medical Physicists in India, Rajiv Gandhi Cancer Institute and Research Centre, Delhi. 28-31 October 2004.

Sri. Giri Purushothaman

XV National conference on "Medical devices and biomaterials" SCTIMST, Trivandrum. 21-22 January 2005.

ANAESTHESIOLOGY

Dr. Rachel Cherian Koshy	Additional Professor and Head
Dr. Mary Thomas	Assistant Professor
Dr. Venugopal A	Assistant Professor
Dr. Mallika Balakrishnan	Assistant Professor
Dr. Renju Kuriakose	Assistant Professor (on leave from 23-10-2004)
Dr. Ajay Pillai	Assistant Professor
Dr. Deepak V	Lecturer
Dr. Sudha P	Lecturer

Clinical activities

The Division provided anaesthetics for all major surgeries, day care procedures, post-surgical care, endoscopic procedures (both diagnostic and therapeutic), short term and long term paediatric central venous cannulations, radiation therapy and CT guided biopsies.

A contribution of Rs, 40,00,000/- worth of hospital supplies and disposables were made to RCC through an International Charitable Organization called Medical Bridges (USA) through the efforts of Dr. Mary Thomas.

New cases seen in Pre-Anaesthetic Clinic (PAC)	2434
Review cases seen in PAC	2624
Total	5088
Major surgical procedures under anaesthesia	2016
Day care procedures under anaesthesia	284
Total	2300

Table - 9: Site-wise breakup of surgeries done under anaesthesia

Site	Number	Percentage
Head and Neck	943	44.51
Breast	601	28.36
Thorax & Abdomen	153	7.22
Genito-urinary	209	9.86
Bone & Extremity soft tissue sarcoma	113	5.33
Skin and other miscellaneous tumours	100	4.72
Total	2119	100

Table - 10: Special anaesthesia techniques

Technique	No
Total intravenous anaesthesia	221
Blind nasal intubation	59
Fiberoptic intubation	18
Laryngeal Mask Airway	2
Regional blocks	9
GA + Epidural	278
Combined spinal epidural anaesthesia	108

**Fellowship, Conferences / Workshops / CMEs attended
Papers presented**

Dr. Rachel Cherian Koshy

1. Awarded UICC ICRETT Fellowship In February 2005 for training in Long Term Central Venous Access and Intensive Care at Lee General Infirmary, UK.
2. 5th Annual meeting of International Network for Cancer Treatment and Research (INCTR). Cairo, Egypt. 2-5 October 2004.
3. Workshops on advanced cardiac life support and neonatal resuscitation programme conducted by Indian Institute of Emergency Medical Services and American Heart Association 26-29 December 2004.

Participated in Fraesenius conference on Transfusion alternatives, New Delhi. 9-11 March 2005.

Dr. Mallika Balakrishnan, Dr. Ajay Pillai & Dr. A. Venugopal

ISACON - KERALA - 2004: 28th Annual conference of Indian Society of Anaesthesiologists, Kerala State branch, Cochin. 9-10 October 2004.

ISACON - 2004: 52nd Annual national conference of Indian Society of Anaesthesiologists, Bhopal. 26-30 December 2004.

Dr. Mallika Balakrishnan & Dr. Sudha P.

CME on "Reconstructive options in oncology - current concepts", Regional Cancer Centre, Trivandrum. 23 January 2005.

Dr. Ajay Pillai, Dr. Venugopal & Dr. Sudha P.

Pain and palliative care CME, "Care beyond cure", Regional Cancer Centre, Trivandrum. 6 March 2005.

Dr. Deepak V.

South Zone Critical Care Conference, Mangalore. 5-6 March 2005.

BASIC RESEARCH

Dr. Prabha Balaram	Professor
Dr. Ravindran Ankathil	Additional Professor
Dr. S. Kannan	Associate Professor
Dr. P. Remani	Associate Professor
Dr. Thomas Abraham	Scientific Officer

The main objectives of this Division centred around the alterations leading to malignant transformation at the cellular and molecular levels, evaluating the potential of these alterations as markers for cancer management, and identification of natural products that can augment the anti-tumour and immunologic mechanisms in the cancer patients. The major findings that emerged from the work in the laboratory are (1) demonstration of differential immune modulatory activities of sera (70% patients with blocking activity and 15 % with enhancing activity) from oral and cervix cancer patients. This activity affects the proteins of the TCR signal transduction system and correlates strongly with the prognosis of the patient. (2) The mechanism for overexpression/stabilization of p53 protein in oral cancer is due to mechanisms other than mutation. (3) p53 expression was observed in 61% Nasopharyngeal carcinomas with deletions in exon 7 in 44% cases and exons 5 and 6 in 20% of the cases. (4) Hydatidiform moles (HM) are characterized by no change in the mitotic proteins and mitotic rate with low apoptotic rate suggesting it to be a disease due to accumulation of cells rather than hyper proliferation. (5) The EGFR-Akt pathway is active in apoptosis in HM and increase in expression of EGFR and Akt is associated with increase in Bcl2 expression and reduction in BAX expression and reduced apoptosis as measured by TUNEL assay and DNA laddering. (6) Over expression of intracellular domain of EGFR and the presence of extra cellular domain in higher concentrations in circulation points towards the role of EGFR in cellular transformation. (7) Lectin binding studies using Trichosanthis agglutinin (TAA) and Momordica charantia lectin (MCL) showed that these two Galactose specific lectins can be used for identifying the potential premalignant lesions of uterine cervix and also for assessing the progression of the disease. (8) The ayurvedic preparation 'Indukantha Gritha' induces TH1 type of immune

reaction with increase in CD4 cell type and TH1 cytokines. (9) A study is in progress to isolate and identify the active principle in the extracts of Aegle marmelos, which shows strong apoptotic activity in Dalton ascites cells from mice. (10) Telomerase expression levels were elevated in high-risk MDS patients compared to low risk groups and controls. Patients carrying unfavourable single karyotype anomalies and those with complex karyotype defects carrying unfavourable single anomalies showed elevated telomerase expression. (11) Demonstration of the importance of achieving a genetic response with Interferon- α therapy and the contribution of a cytogenetic response toward survival prolongation. (12) Spectrum of prevalence of BRCA1 or 2 mutations in breast and breast/ovarian cancer families in Kerala may differ from other populations studied, and that there is a slight preponderance of population specific nonsense mutations.

Ongoing Research Programmes

1. Evaluation and validation of molecular markers in oral cancer: A multicentric study (2001-2005). (Funded by: Department of Biotechnology, Government of India)

2. Molecular alterations in Nasopharyngeal cancer with special reference to oncogenes and tumour suppressor genes (2001-2004). (Funded by: Indian Council of Medical Research)

3. Analysis of molecular alterations in GTD with reference to treatment potential (2001-2004). (Funded by: Department of Science and Technology, Govt. of India)

4. Immunomodulatory activities of rasayana- Indukantha Gritha (2001-2004). (Funded by: Ministry of Family Welfare, Govt. of India)

5. Evaluation of T-cell mediated signal transduction in oral cancer patients in relation to immune response and response to therapy (2001-2004). (Funded by: Indian Council of Medical Research, Government of India)

T-cell mediated signal transduction: correlation with immune response and response to therapy in patients with cancer of the uterine cervix (2002-2005). (Funded by: State Council for Science, Technology and Environment, Govt. of Kerala)

7. Cytogenetic and haematologic response studies of Alpha Interferon therapy in Chronic Myeloid Leukemia patients (2002-2005). (Funded by: State Council for Science, Technology and Environment, Govt. of Kerala)
8. Prognostic evaluation of karyotype changes and telomerase activity in preleukemic and leukemic conditions (2002-2005) (Funded by: Indian Council of Medical Research)
9. Germline mutation analysis of BRCA2 gene in hereditary Breast Ovarian cancer families in Kerala (2004-2007). (Funded by Indian Council of Medical Research)
10. Characterization of molecular alterations in p53 and Cyclin D1 gene in oral carcinoma (2001-2004). (Funded by: State Council for Science, Technology and Environment, Govt. of Kerala)
11. Mode of INK4A/MTS1 inactivation and over-expression of RB genes in oral carcinoma (2004-2007). (Funded by: Department of Science and Technology, Govt. of India)
12. Indigenous plant lectins and their use as reagents in Immunology and Pathology. (Funded by: Indian Council of Medical Research)

Ongoing Doctoral Programmes

1. Adhesion protein as metastatic markers
2. T cell signal transduction in correlation with immune response and response to therapy in patients with cancer of the uterine cervix.
3. Molecular alterations in relation to radiation response in squamous cell carcinoma.
4. Analysis of molecular alterations of epidermal growth factor receptor in GTD.
5. Immunomodulatory activities of Rasayana: 'Indukantha Giltha' in experimental animals.
6. Rb protein and related genes in the regulation of cell cycle progression in oral cancer.
7. Molecular alterations in nasopharyngeal carcinoma with reference to cell cycle regulatory genes and tumour suppressor genes.

8. Cytogenetic studies in myelodysplastic syndromes.
9. Cytogenetic and molecular genetic studies in Acute Non lymphocytic Leukemias
10. Genetic susceptibility studies in lung cancer
11. Molecular genetic analysis of germline BRCA2 gene mutations and pathobiology of BRCA2 gene mutated hereditary breast cancer.
12. Genetic profile of fetal wastage: A hospital based study.
13. Genetic determinants of radiation response in uterine cervix cancer patients undergoing radiotherapy.
14. Characterization of molecular alterations in p53 gene in oral carcinoma.
15. Characterization of molecular alterations in INK4A/MTS-1/p16 gene in oral carcinoma.
16. Characterization of molecular alterations in Cyclin D1 gene in oral carcinoma.
17. Molecular studies on involvement of p14/ARF gene in oral carcinoma
18. Plant lectins and their applications in oncology.
19. Anti-cancer studies in selected medicinal plants used in traditional and folkore medicine of Kerala with particular reference to the Western Ghats.
20. Multiparametric evaluation of radiation induced changes in the erythrocytes of cancer patients.
21. Antitumour properties of selected medicinal plants of Zingiberaceae.

CME organised / Training provided

1. CME on 'Flow Cytometry: Principles and applications', RCC, Trivandrum, 9 November 2004.
2. Training for M.D. Microbiology students (2 months), M.Sc. Biotechnology students (3 months).

3. Training in Cytogenetics for 91 B.Sc. MLT students of Mahatma Gandhi University, Calicut University etc.

Investigations for clinical management

Routine Flow cytometric analysis for:

Diagnosis : 40 samples & Research : 200 samples

Cytogenetic analysis:

Bone Marrow Karyotype : 354 Samples

Peripheral Blood Lymphocyte Karyotype : 102 Samples

Merits, Conferences / Seminars / Training programmes attended, Papers presented

Dr. Prabha Balaram

Positions held:

Member : Governing Body, Amala Cancer Centre, Trichur

Executive Committee member : Indian Society for Radiation Biology

Executive Member : Indian Association of Biomedical Scientists

Executive Member : Indian Association for Cancer Research

Referee for research projects and publications:

ICMR : 12 CSIR : 1 DST : 3 DBT : 3 STED :

Examiner: 1. M.Sc. Microbial Genetechnology,
Madurai Kamraj University, Madurai.

2. PhD, Mahatma Gandhi University & Calicut University

1. 17th Kerala Science Congress, Peechi. 29-31 January 2004.
Papers: 1. "Immunomodulation of T lymphocyte signal transduction by serum from oral cancer patients". 2. "Alteration of the epidermal growth factor receptor in complete hydatidiform moles". 3. "p53 autoantibodies in the sera of premalignant and malignant lesions of the oral cavity".
2. 24th Annual convention of Indian Association of Cancer Research & International symposium on Human Papillomavirus and cervical cancer, Noida. 9-12 February 2005. Papers: 1. "Immunomodulatory activity of Indukantha Ghrita on T-cell subpopulation and cytokine secretion in Mice". 2. "Expression of

DNA-damage repair proteins in relation to viral infection in primary nasopharyngeal carcinoma".

3. 14th GCC Medical education conference, Abu Dhabi. September 2004. Paper: "Down regulation of adhesion protein E-Cadherin in Epstein-Barr virus infected primary Nasopharyngeal Carcinomas".

4. International Conference on Biotechnology and Neurosciences, IUSAT, Cochin. December 2004. Invited talk: "Epidermal Growth Factor Receptor in relation to proliferation, apoptosis and invasion in GTD".

Dr. Ravindran Ankathil

1. 14th Biennial conference of Indian Society of Oncology, Bangalore. 8-10 October 2004. Paper: "Novel genetic determinants of prognosis in Acute Non Lymphocytic Leukemia".

2. 14th ADNAT symposium and 30th Indian Society of Human Genetics Conference, CCMB, Hyderabad. 20-23 February 2005. Paper: "Molecular genetic alterations as predictive prognostic markers in Acute Myeloblastic Leukemia patients".

3. International symposium on chromosomes in Human Genome, KAS College, Coimbatore. 3-4 December 2004. Invited talk: "Series on chromosomes 13 and 17".

4. National seminar on recent trends in Biotechnology, Sathya Sai Institute of Higher Learning, Prasanthi Nilayam, Andhra Pradesh. 9-11 February 2005. Invited talk: "Genetic markers of cancer susceptibility".

Dr. Kannan S

1. 24th Annual convention of Indian Association for Cancer Research, Noida. 9-12 February 2005.

Papers: 1. H-Ras 81T->C polymorphism associated with oral cancer risk.

2. Significance of intraoral site-wise analysis of clinico-biological factors in oral cancer.

3. P53 mutation profiling and HPV typing in oral carcinoma.

Dr. Remani P.

1. 21st International Lectin Meeting (INTERLEC 21), Kanagawa, Japan. 23-28 May 2004.

Papers: 1. Mitogenic activity of a lectin from the seeds of *Artocarpus hirsuta*.

2. Altered expression of *Momordica charantia* lectin specific cell surface glycoconjugates on oral premalignant and malignant lesions.

2. CME on 'Flow Cytometry – Principles and Applications', RCO, Trivandrum. 9 November 2004.
3. 24th Annual convention of Indian Association for Cancer Research, Noida. 9-12 February 2005. Paper: "Expression of *Momordica charantia* lectin specific glycoconjugates in premalignant and malignant lesions of uterine cervix.
4. Two weeks training in Molecular Oncology at Dept. of Radiation Biology and Medical Genetics, Graduate School of Medicine, Osaka, Japan. 28 May -13 June 2004.

Dr. Hariharan S.

AMBO training course in Molecular biology at Summer School 2004, Graduate school of Frontier Biosciences, Osaka University, Japan. 12 July - 6 August 2004.

Srl. Hareendran NK

1. CME on 'Flow Cytometry – Principles and Applications', RCO, Trivandrum. 9 November 2004.
2. Training in Flow Cytometry, Haemato-Oncology Laboratory, Tata Memorial Hospital, Mumbai. 24 January - 5 February 2005.

MOLECULAR MEDICINE, DRUG DEVELOPMENT AND CHEMOINFORMATICS

Dr. M. Radhakrishna Pillai Additional Professor and Head
(Till 28 February 2005)

The Division of Molecular Medicine, Drug Development and Chemoinformatics was founded on the understanding that basic research in molecular and cellular biology is fundamentally important to the advancement of the medical sciences. The educational program ranging from training graduate, postgraduate and doctoral students involved a close participation of basic and clinical scientists in every step. The Division sought greater, more comprehensive understanding of human biology and disease, which forms the primary goal of biomedical research. Moreover, we not only look at the molecular structure of life but also translate these molecules to the clinic for improved understanding, diagnosis and treatment of human disease.

Research Projects:

1. Isolation and characterisation of anti-cervical cancer agents from natural compounds
2. Nutrigenomics, homocysteine and cervical cancer
3. NF- κ B and COX-2 in oral surgical margins and assessment of minimal residual disease
4. Programmed cell death as a determinant for treatment outcome in cervical cancer
5. Molecular screening for oral tumorigenesis: profiles of DNA repair genes
6. Benzamide riboside induced apoptosis in human cervical cancer cell lines
7. Chemoinformatics and molecular modeling

Research in this area can be grouped into two heads:

Structure prediction and analysis: Using advanced bioinformatics methodologies 3 D model of the human Smad 5, a protein playing key roles in oncogenesis, was generated. The predicted model has

led to an interesting hypothesis linking Smad 5 and the human papillomavirus E6 oncoprotein.

Molecular Docking: Molecular docking, implemented in window based packages such as Hex and G.O.L.D was used for protein-protein docking and protein-small molecule docking studies. The protein-protein docking methodology was successfully used to analyze a specific molecular interaction, human BRCA1- HPV E6 protein. This study revealed amino acid residues involved in the protein-protein interface and provides a structural basis for transcriptional co-activation by HPV E2. Protein-small molecule docking was used for the molecular target prediction of a few natural compounds such as curcumin and resveratrol. Virtual screening of chemical libraries based on docking, was also implemented and a few novel putative ligands or "virtual hits" were identified for further validation.

Ongoing Research Projects

1. Polymorphism in CYP1A1, GSTM1 and XRCC1 genes and susceptibility in oral cancer. (Funded by: Dept. of Biotechnology, Govt. of India, 2001-2004)
2. Human papillomavirus E6, E7 and p53 gene polymorphism in Indian cervical carcinoma. (Funded by: Indian Council for Medical Research, 2002-2004)
3. Cellular and molecular manifestations of natural plant compounds on human papillomavirus infected cells. (Funded by: Indian Council for Medical Research, 2002-2004)
4. Fund for Improvement of Science & Technology Infrastructure in Universities and Higher Educational Institutions. (Funded by: Dept. of Science and Technology, Govt. of India, 2000-2005)
5. Ras gene mutation and tumor response to radiation therapy. (Funded by: Kerala State Council for Science, Technology & Environment, 2003-2005). [With Dr. Jayaprakash Madhavan, Division of Radiation Oncology]
6. Cellular pharmacology of anti-tumor and anti-viral activity of curcumin against cervical cancer. (Funded by: Council of Scientific and Industrial Research, 2003-2006)

Molecular markers for the detection and progression of cervical cancer. (Funded by: Department of Biotechnology, 2003-2006)

The nutri-genomics of cervical cancer. (Funded by: Kerala State Council for Science, Technology and Environment, 2004-2007)

Development of human papillomavirus vaccine prototype/s – Molecular epidemiology of HPV types prevalent in India and identification of HPV-16 L1 & E6 variants. (Funded by: Department of Biotechnology, 2005-2008)

Human Resource Development

The division is an important training center in cell and molecular biology for postgraduate students from various universities/colleges. 10 B. Sc. and 31 M. Sc. Biotechnology & Biochemistry theses were done during the period. 2 PhD theses and 3 MD theses were awarded.

Merits, Conferences / Workshops / Seminars attended, Papers presented

M. Radhakrishna Pillai

1. Fellow, Indian Academy of Sciences, Bangalore.
2. In recognition of the outstanding contributions in medical biotechnology, appointed as Director of the prestigious Rajiv Gandhi Centre for Biotechnology, Thiruvananthapuram.
3. International conference on Biotechnology and Neuroscience, Cochin University of Science and Technology, Cochin, December 2004. Best original paper: "Homocysteine and the nutrigenomics of cervical cancer progression".
4. Seminar on Medical, Plant and Industrial Biotechnology, Cochin University of Science and Technology, Cochin, June 2004. Invited Talk: "Molecular mechanisms of tumor invasion in oral cancer".
5. International workshop on Cervical cancer, National Centre for Biological Sciences, Bangalore, India, November 2004. Invited Talk: "Molecular epidemiology of human papillomaviruses in India and its clinical significance to anti viral therapeutics".
6. 24th Annual convention of Indian Association for Cancer Research & International symposium on Human Papillomavirus and Cervical Cancer, Institute of Cytology & Preventive Oncology, Noida, India, 9-12 February 2005. Invited Talk: "The nutrigenomics of cervical cancer".

EPIDEMIOLOGY & CLINICAL RESEARCH

Dr. Aleyamma Mathew Associate Professor

Ms. Padmakumary Amma G Lecturer

Dr. Kalavathy M C Lecturer

Cancer Registries

1. Hospital Based Cancer Registry [HBCR], Regional Cancer Centre, Trivandrum (Partially funded by: Indian Council of Medical Research, New Delhi)

A total of 8390 patients (4385 males and 4005 females) were reported during the year 2002. The commonest site of cancer was oral cavity among males and breast among females (Tables:- 11-14).

Table - 11: HBCR, 2002: Leading sites of cancer by sex

Rank	Male				Female			
	ICD-10	Site	No.	%	ICD-10	Site	No.	%
1	C00-C06	Oral cavity	693	15.8	C50	Breast	1152	28.7
2	C34	Lung	611	13.9	C53	Cervix uteri	439	11.0
3	C81-C85, C96	Lymphoma	312	7.1	C73	Thyroid	372	9.3
4	C91-C95	Leukaemia	306	7	C00-C06	Oral cavity	370	9.3
5	C09-10, 12-14	Pharynx	268	6.1	C56	Ovary	240	6.0
	C00-C96	Total	4385		C00-C96	Total	4005	

Table - 12: HBCR, 2002: System wise distribution (%) of cancer cases

%		%
3.4	Brain & Nervous System	2.0
22.3	Oral Cavity & Pharynx	10.1
2.8	Thyroid	9.3
19.6	Respiratory System	2.9
0.3	Breast	28.8
8.7	Esophagus & Stomach	2.7
8.5	Other Digestive Organs	4.7
2.9	Urinary tract	0.7
3.8	Reproductive System	20.4
3.8	Bone, Conn. tissue & Skin	2.5
8.8	Leukemia & Myeloma	6.3
7.1	Lymphoma	3.0
3.2	All Others	6.6
Male 4385	Total 8390	Female 4005



Table - 13: HBCR, 2002: CANCER SITES AND FIVE-YEAR AGE GROUPS

(% = proportion of total cancers) - Male

ICD-10 SITE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	Total	%	
C00 Lip	0	0	0	0	0	0	0	2	1	1	1	4	2	1	1	2	17	0.4	
C01 Base of tongue	0	0	0	0	0	0	0	0	0	1	7	4	11	4	5	4	40	0.9	
C02 Tongue	0	0	0	0	0	3	4	3	19	23	37	49	28	29	15	17	326	5.2	
C03 Gum	0	0	0	0	1	0	0	1	0	16	6	17	10	11	12	9	77	1.3	
C04 Floor of mouth	0	0	0	0	1	0	0	1	0	16	6	17	10	11	12	9	77	1.3	
C05 Palate	0	0	0	0	0	1	0	0	4	6	9	13	10	7	8	6	64	1.5	
C06 Other mouth	0	0	0	0	0	0	0	4	4	4	4	14	7	10	3	6	55	1.3	
C07 Parotid gland	0	0	0	0	1	2	6	9	27	34	28	25	34	24	24	24	214	4.9	
C08 Salivary gland	0	0	0	0	0	0	0	1	0	2	7	1	3	0	2	0	22	0.5	
C09 Tonsil	0	0	0	0	0	0	0	0	2	2	2	7	0	6	7	0	7	0.2	
C10 Oropharynx	0	0	0	0	0	0	0	0	2	3	10	4	6	5	4	2	36	0.8	
C11 Nasopharynx	0	0	0	0	2	7	1	2	2	6	2	3	5	5	1	1	101	2.4	
C12 Pyrimiform sinus	0	0	0	0	0	0	0	1	2	7	9	6	7	9	5	10	58	1.3	
C13 Hypopharynx	0	0	0	0	0	0	0	0	3	4	5	6	7	9	5	10	58	1.3	
C14 Pharynx unspecified	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C15 Oesophagus	0	0	0	0	0	0	0	0	1	0	0	2	3	1	1	0	8	0.2	
C16 Stomach	0	0	0	0	0	1	2	2	8	8	26	27	30	39	24	75	182	4.2	
C17 Small intestine	0	0	0	0	0	0	2	4	2	16	17	22	30	34	26	25	13	203	4.6
C18 Colon	0	0	0	0	0	1	10	8	6	5	9	10	5	8	9	2	73	1.7	
C19 Rectosigmoid colon	0	0	1	0	0	0	0	0	2	2	2	0	2	2	0	0	11	0.3	
C20 Rectum	0	0	0	0	2	2	6	3	6	12	17	13	15	13	12	8	109	2.5	
C21 Anus & anal canal	0	0	0	0	0	0	0	0	0	1	2	1	1	1	2	0	6	0.2	
C22 Liver	1	1	0	0	0	4	4	8	12	4	9	10	16	12	6	6	93	2.1	
C23 Gall bladder	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2	0	6	0.2	
C24 Other biliary tract	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C25 Pancreas	0	0	0	0	0	0	1	3	4	4	8	6	6	17	7	3	4	58	1.3
C30 Nasal cavity	0	0	0	0	0	1	3	4	4	8	6	6	17	7	3	4	58	1.3	
C31 Accessory sinus	0	0	0	2	1	3	1	1	1	2	0	1	0	0	1	1	8	0.2	
C32 Larynx	0	0	0	0	0	1	0	2	2	8	6	8	10	3	3	2	50	1.1	
C33 Trachea	0	0	0	0	0	0	0	2	3	18	22	38	43	26	19	16	188	4.3	
C34 Lung	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
C37 Thyroid	0	0	0	0	0	0	0	0	1	1	4	6	0	0	0	0	6	0.1	
C39 Heart & mediast.	0	0	1	1	3	0	1	4	1	4	0	0	0	0	0	0	6	0.1	
C40 Bone of limbs	0	2	2	13	3	0	2	0	0	1	2	2	3	2	1	4	26	0.6	
C41 Other bone	0	1	0	1	2	3	0	0	0	1	1	0	1	1	0	0	7	0.2	
C43 Skin, melanoma	0	0	0	0	1	3	0	0	0	1	1	1	2	0	0	0	8	0.2	

HBCR, 2002: CANCER SITES AND FIVE-YEAR AGE GROUPS

(% = proportion of total cancers) - Male (Table-13 Contd...)

ICD-10 SITE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	Total	%
C44 Skin other	0	0	0	0	0	1	3	4	5	7	7	7	0	4	4	9	59	1.3
C47 Periph. nerv. sys.	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
C48 Retroperitoneum	1	0	0	0	0	0	0	0	1	1	1	2	2	0	0	0	8	0.2
C49 Connective tissue	4	3	3	5	2	8	5	2	6	8	3	5	2	6	2	3	67	1.5
C50 Breast	0	0	0	0	0	0	1	1	0	0	1	4	6	2	1	2	12	0.3
C60 Penis	0	0	0	0	0	0	0	3	1	5	2	4	4	4	5	0	28	0.6
C61 Prostate	0	0	0	0	0	0	0	1	3	4	4	8	12	20	26	78	1.8	
C62 Testis	0	0	0	3	4	2	6	2	1	1	0	0	0	0	0	0	26	0.6
C64 Kidney	8	3	0	0	1	0	0	5	2	3	1	8	4	0	3	38	0.9	
C66 Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	3	0.1
C67 Urinary bladder	1	0	0	0	0	0	0	2	4	4	6	4	11	15	15	8	70	1.6
C68 Oth. urin. organs	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.0
C69 Eye	8	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	9	0.2
C71 Brain	8	9	9	10	7	13	13	18	11	15	15	5	5	4	3	1	144	3.3
C72 Spinal cord	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	4	0.1
C73 Thyroid gland	0	0	0	5	6	4	19	9	10	11	15	12	5	14	7	5	122	2.8
C74 Adrenal gland	4	1	1	0	0	0	0	2	1	0	0	0	0	0	0	0	9	0.2
C75 Oth. endo. gland	0	1	2	1	0	0	0	0	1	0	0	0	0	0	0	0	5	0.1
C76 Ill defined sites	1	0	0	1	1	0	0	0	0	1	1	0	0	1	0	0	6	0.1
C77 Sec. lymphnode	0	0	0	1	0	3	2	3	4	10	13	13	20	22	14	10	115	2.6
C78 Sec. resp & diges.	0	0	0	1	0	1	2	2	4	4	10	9	12	11	4	5	65	1.5
C79 Sec. other sites	0	0	0	0	1	0	0	3	5	5	12	5	10	7	8	6	62	1.4
C80 Pri. unknown	0	0	0	0	1	2	1	2	1	2	2	4	4	4	3	3	29	0.7
C81 Hodgkins disease	0	3	5	4	8	6	4	2	4	5	5	5	1	1	2	1	61	1.4
C82 Follicular NHL	0	0	0	1	0	1	0	4	8	4	4	5	5	1	3	1	41	0.9
C83 Diffuse NHL	4	4	1	3	4	4	7	4	11	13	10	11	13	10	12	12	123	2.8
C84 I-cell lymphoma	0	0	0	0	0	3	1	3	4	4	4	2	2	0	2	3	34	0.8
C85 Other NHL	0	0	1	2	3	0	1	3	5	4	5	4	3	7	7	5	52	1.2
C80 Multiple myeloma	0	0	0	0	0	0	0	3	3	12	12	14	15	13	10	10	97	2.2
C91 Leuke., lymphoid	29	17	15	17	8	4	3	5	3	2	8	5	3	4	2	0	127	2.9
C92 Leuke., myeloid	2	4	3	9	15	72	17	9	18	19	7	15	6	4	3	3	151	3.4
C93 Leuke., monocytic	2	0	0	0	1	0	1	0	1	0	0	0	0	1	1	0	7	0.2
C95 Leuke., unspc.	4	2	0	2	0	2	3	1	1	1	1	0	0	1	2	1	21	0.5
C96 Oth. lymph. neo.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0.0
All sites	78	56	49	86	78	100	138	154	262	411	509	560	697	545	408	343	4385	100.0

TABLE - 14: HBCR, 2002: CANCER SITES AND FIVE-YEAR AGE GROUPS
 (% = proportion of total cancers) - Female

ICD_10 SITE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	Total	%
C00 Lip	0	0	0	0	0	0	0	0	0	1	1	2	1	2	3	6	16	0.4
C02 Tongue	0	0	0	0	0	0	8	1	2	13	13	21	17	20	9	11	115	2.9
C03 Gum	0	0	0	1	0	0	0	1	2	5	7	9	9	10	11	14	69	1.7
C04 Floor of mouth	0	0	0	0	0	0	1	0	0	1	1	1	0	1	0	0	5	0.1
C05 Palate	0	0	0	1	1	0	0	1	0	1	2	1	0	4	1	2	14	0.3
C06 Other mouth	0	0	0	0	0	0	0	2	4	18	16	21	23	25	15	27	151	3.8
C07 Parotid gland	1	0	0	4	2	2	2	1	2	4	1	1	1	0	0	0	21	0.5
C08 Salivary gland	0	0	0	0	0	2	0	0	0	1	0	0	2	3	1	1	10	0.2
C10 Oropharynx	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3	0.1
C11 Nasopharynx	0	0	0	2	1	1	2	0	4	1	2	0	2	1	0	1	17	0.4
C12 Pyiform sinus	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	4	0.1
C13 Hypopharynx	0	0	0	0	0	1	1	3	0	2	1	2	1	2	0	1	14	0.3
C14 Pharynx unspc.	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.0
C15 Oesophagus	0	0	0	0	0	1	0	4	5	6	5	6	5	11	4	10	57	1.4
C16 Stomach	0	0	0	0	2	1	1	7	9	0	7	6	11	7	3	1	65	1.4
C17 Small intestine	0	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	5	0.1
C18 Colon	0	0	0	0	0	0	1	1	1	6	6	7	7	6	2	0	37	0.9
C19 Rectosigmoid colon	0	0	0	0	0	0	2	1	2	3	1	1	1	0	0	0	11	0.3
C20 Rectum	0	0	0	0	0	1	2	3	6	12	8	13	10	6	8	5	74	1.8
C21 Anus & anal canal	0	0	0	0	0	0	1	1	0	0	0	1	2	2	0	0	7	0.2
C22 Liver	1	1	0	0	0	1	7	0	2	3	0	1	2	5	1	2	20	0.5
C23 Gall bladder	0	0	0	0	0	0	0	0	1	2	2	1	1	2	0	0	9	0.2
C25 Pancreas	0	0	0	0	0	0	0	2	2	3	4	3	3	1	2	2	22	0.5
C26 Other digest organs	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0.0
C30 Nasal cavity	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
C31 Accessory sinus	1	0	0	0	0	1	0	1	2	0	2	2	1	6	2	0	18	0.4
C32 Larynx	0	0	0	0	1	0	1	0	0	0	2	0	2	1	3	0	10	0.2
C34 Lung	0	0	1	0	0	0	2	5	10	5	10	13	8	17	5	9	85	2.1
C37 Thymus	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0.0
C38 Heart & mediastinum	0	0	0	0	0	0	0	0	1	1	0	2	1	0	1	2	8	0.2
C40 Bone of limbs	1	2	5	5	3	2	0	1	0	0	0	0	0	0	0	0	19	0.5
C41 Other bone	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	12	0.3

HBCR, 2002: CANCER SITES AND FIVE-YEAR AGE GROUPS
 (% = proportion of total cancers) - Female (Table 14 Contd.)

ICD_10 SITE	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	Total	%
C44 Skin other	1	0	0	0	0	0	1	0	0	2	0	7	2	5	6	6	33	0.8
C48 Retroperitoneum	1	0	0	0	1	0	0	0	1	1	0	1	1	0	1	0	7	0.2
C49 Connective tissue	3	2	2	3	4	2	3	2	3	2	5	0	3	2	0	4	40	1.0
C50 Breast	0	0	0	1	4	27	59	123	168	211	171	146	107	75	35	33	1152	28.8
C51 Vagina	0	0	0	0	0	0	2	1	0	1	0	0	0	2	2	4	12	0.3
C52 Vulva	0	0	0	0	0	1	0	0	1	0	2	5	5	6	2	1	23	0.6
C53 Cervix	0	0	0	0	0	0	2	29	34	64	58	63	64	51	46	28	439	11.0
C54 Body uterus	0	0	0	0	1	5	2	5	6	9	21	16	13	8	3	5	94	2.3
C55 Uterus unspecified	0	0	0	0	0	1	0	1	0	3	2	3	0	0	1	0	12	0.3
C56 Ovary	0	1	2	7	11	7	9	18	14	43	42	24	27	18	10	8	240	6.0
C57 Other genital organs	0	0	0	0	0	0	0	0	1	4	1	0	0	0	0	0	6	0.1
C58 Placenta	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0.0
C64 Kidney	3	0	0	0	0	1	1	0	0	2	3	0	0	0	1	0	12	0.3
C66 Ureter	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
C67 Urinary bladder	1	0	0	0	0	0	0	1	1	0	0	0	3	3	1	4	14	0.4
C69 Eye	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0.1
C71 Brain	10	5	8	2	3	7	7	6	5	7	6	2	4	3	3	2	78	1.9
C72 Spinal cord	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.0
C73 Thyroid gland	0	0	2	14	31	53	48	61	38	34	32	19	16	10	7	7	372	9.3
C74 Adrenal gland	3	0	0	0	0	0	0	1	0	1	0	0	2	1	0	0	7	0.2
C75 Oth. endocr. glands	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	3	0.1
C76 Ill defined sites	2	0	0	0	0	0	0	0	0	2	1	0	1	0	0	0	6	0.1
C77 Sec. lymphoid	0	0	0	0	0	2	1	3	2	1	5	3	3	4	5	2	31	0.8
C78 Sec. resp & diges	0	0	0	1	0	2	1	3	4	8	4	9	10	13	8	3	66	1.6
C79 Sec. other sites	0	0	0	1	0	1	1	5	3	2	7	6	3	3	1	0	33	0.8
C80 Primary unknown	0	0	0	0	0	1	2	1	0	2	4	5	1	1	0	0	17	0.4
C81 Hodgkins disease	0	0	0	4	2	3	3	2	0	1	0	6	0	0	1	1	23	0.6
C82 Follicular NHL	0	0	0	0	1	1	1	1	1	2	4	2	1	2	2	0	18	0.5
C83 Diffuse NHL	0	1	0	3	0	1	3	2	5	3	7	7	4	6	3	3	48	1.2
C84 T-cell lymphoma	0	0	0	0	0	0	1	0	1	0	3	0	0	4	3	1	15	0.4
C85 Other NHL	0	0	0	1	1	0	2	0	0	3	4	0	2	1	0	2	18	0.4
C90 Multiple myeloma	0	0	0	1	1	0	1	2	3	7	6	5	7	6	5	3	47	1.2
C91 Leuka, lymphoid	24	9	7	7	2	2	3	1	7	4	2	1	2	7	1	0	79	2.0
C92 Leuka, myeloid	7	1	10	7	19	6	17	13	9	15	10	10	4	4	3	3	129	3.2
C93 Leuka, monocytic	3	0	1	0	0	1	1	1	0	0	0	1	0	0	0	0	5	0.1
C95 Leuka, unspecified	0	3	1	1	0	0	0	0	0	1	0	1	2	0	2	0	12	0.3
All Sites	65	26	34	68	87	143	198	319	363	531	498	460	393	371	228	217	4085	100.0

2. Population Based Cancer Registry [PBCR], Trivandrum

The PBCR provided data on cancer incidence and mortality covering a population of nearly 1.2 million in the Trivandrum Corporation (urban population) and adjoining three Community Development Blocks (rural population). The incidence rate of all cancers was around 90 per 100,000 in Trivandrum urban and 98 & 81 in Trivandrum rural per 100,000 males and females respectively (Tables - 15 & 16).

Table-15: PBCR - Trivandrum Urban, 2000: Age-adjusted incidence rates (AAR) of five leading cancer sites by sex

Rank	Male				Female			
	ICD-10	Site	AAR	%	ICD-10	Site	AAR	%
1	C00-C06	Oral Cavity	11.8	13.3	C50	Breast	25.3	23.2
2	C34	Lung	7.6	8.3	C53	Cervix uteri	8.4	9.2
3	C32	Larynx	6.2	4.6	C73	Thyroid	7.7	6.9
4	C81	Prostate	4.4	6.6	C56	Ovary	6.4	7.3
5	C18	Colon	4.4	5.0	C54	Body uterus	4.8	4.2
	C00-C96	All sites	89.6	100.0	C00-C96	All sites	91.4	100.0

Table-16: PBCR - Trivandrum Rural, 2000: Age-adjusted incidence rates (AAR) of five leading cancer sites by sex

Rank	Male				Female			
	ICD-10	Site	AAR	%	ICD-10	Site	AAR	%
1	C00-C06	Oral cavity	16.8	17.3	C50	Breast	23.2	28.1
2	C34	Lung	13.5	13.5	C53	Cervix uteri	10.1	12.4
3	C32	Larynx	7.1	6.9	C00-C06	Oral cavity	7.5	9.3
4	C19-20	Rectum	4.4	4.2	C73	Thyroid	5.7	5.6
5	C15	Esophagus	4.2	3.9	C56	Ovary	4.5	7.3
	C00-C96	Total	98.3		C00-C96	Total	81.4	

Publications / Training programmes

Cancer Registry Abstracts (CRAB): Newsletter of the National Cancer Registry Project, ICMR.

Hospital Based Cancer Registry: Annual report for the year 2000.

Hospital Based Cancer Registry: Annual report for the year 2001.

Population Based Cancer Registry (Urban and rural): Annual report for the year 2000.

Research guidance for Doctoral students in Epidemiology, Public Health and Biostatistics.

Training to students of Master of Public Health (MPH) from the Achutha Menon Centre for Health Science Studies, SCTIMST, Trivandrum and Master of Social Work (MSW). Training to Mr. Shiva Hari Sapkota, B.P. Koirala Memorial Cancer Hospital, Nepal for a period of one year.

Cancer Awareness Classes and Cancer Detection Camps

Cancer control programmes in the Thiruvananthapuram Corporation area are in the second phase. 24 cancer awareness classes and 32 cancer screening campaigns were conducted during the period as part of the project funded by the Corporation of Thiruvananthapuram. (Tables -17 & 18)

Table - 17: Cancer Awareness Classes

No.	Place	Date	No. of Participants
1	Poonkulam L.P.S, Tvpm	13/04/04	100
2	Cheruvakkal, Tvpm	12/06/04	50
3	Karunya Vishranthi, Tvpm	12/06/04	20
4	Chakka ITI, Tvpm	11/07/04	50
5	S.N. Nagar, Tvpm	11/07/04	75
6	Vayyamoola, Tvpm	17/07/04	70
7	Alummoodu Jn., Chakkei, Tvpm	31/07/04	70
8	Peroorkada Girls School, Tvpm	06/09/04	35
9	Kunnapuzha U.P.S, Tvpm	18/09/04	50

10	Saraswathy Vidyalayam, P.T.P Nagar, Tvpm	19/09/04	100
11	Sasthamangalam L.P School, Tvpm	02/10/04	50
12	Vattiyookavu L.P School, Tvpm	03/10/04	50
13	Karimadom Colony, Manacaud, Tvpm	13/10/04	100
14	Valiyavila Vidhyadhi Raja H.S., Tvpm	17/10/04	95
15	VFA Office Valiyathura, Tvpm	11/11/04	95
16	Corporation Nursery School, Palkulangara, Tvpm	14/11/04	25
17	Varma Travels, Fort, Tvpm	15/11/04	50
18	Punchakkari, Thiruvallam, Tvpm	05/12/04	25
19	Kuriyathi, Tvpm	02/01/05	10
20	Thampanoor, Tvpm	15/01/15	25
21	Kalippankulam, Tvpm	23/01/05	10
22	Karamana, Tvpm	30/01/05	90
23	Nenniara, Palakkad, Tvpm	18/03/05	300
24	Sreekarlyam, Tvpm	08/03/05	500

Table-18: Cancer Detection Campaign

No	Place	Date	No. of Participants	No. of Pre-cancers	No. of Cancers
1	Thiruvallam BNV School, Tvpm	15/04/04	50	1	-
2	Pachaloor LPS, Tvpm	16/04/04	50	1	-
3	Ponkulam LPS, Tvpm	17/04/04	50	--	-
4	Vazhamuttam, Tvpm	18/04/04	60	2	-
5	Cheruvakkal, Tvpm	13/06/04	50	1	-
6	Karunya Vishranthiy, Tvpm	14/06/04	20	1	-
7	Chakka ITI Poursamathi, Tvpm	10/07/04	100	--	-
8	S.N.Nagar, Tvpm	11/07/04	100	--	2
9	Vayyanoola, Tvpm	18/07/04	80	-	-

10	Alumanoodu Jr., Chakka, Tvpm	01/08/04	80	2	1
11	Perookkada GHS, Tvpm	11/08/04	80	--	--
12	Mannamoola Concordia UPS, Tvpm	12/09/04	50	1	--
13	Kunnappozha UPS, Tvpm	21/09/04	50	2	1
14	Saraswathy Vidhyalayam, Tvpm	26/09/04	130	1	--
15	Vattiyookavu, Tvpm	09/10/04	70	2	--
16	Sasthamangalam LPS, Tvpm	10/10/04	18	1	-
17	Karimadom Colony, Manacadu, Tvpm	14/10/04	110	-	-
18	Valiyavila Vidhyadi Raja School, Tvpm	24/10/04	60	1	-
19	St. Antony's H.S., Valiyathura, Tvpm	13/11/04	80	--	-
20	Palkulangara Nursery School, Tvpm	20/11/04	31	--	--
21	Varma Travels, Fort, Tvpm	21/11/04	40	--	-
22	Punchakkari Thiruvallam, Tvpm	06/12/04	85	2	1
23	Ananthapuram Jagathi, Tvpm	18/12/04	50	--	--
24	Kalady HS, Tvpm	28/12/04	33	-	--
25	SVM School, Tvpm	30/12/04	181	1	--
26	Kuriyathi Vayanasala, Tvpm	08/01/05	70	-	--
27	Thampanoor Union Office, Tvpm	16/01/05	10	-	--
28	Mullala, Tvpm	26/01/05	40	-	--
29	Kalippankulam Grandhasala, Tvpm	29/01/05	85	1	--
30	Karamana HS LPS, Tvpm	05/02/05	50	-	--
31	Karyavattom, Tvpm	13/02/05	200	1	1
32	Kattaikottam, Tvpm	18/03/05	50	-	--

Ongoing Research Projects

Case-control study of breast cancer in south Asia comparing rural and urban women (Collaborators: International Agency for Research on Cancer, Lyon, France)

Principal Investigators : Dr. Aleyamma Mathew and Dr. B. Rajan

2. Cancer ATLAS in India (Collaborators; National Cancer Registry Programme, Technical wing, supported by WHO)
Principal Investigators : Dr. B. Rajan and
Dr. Aleyamma Mathew
3. Development of life-style and dietary questionnaire in India.
(Funded by: National Cancer Institute, USA)
Principal Investigator : Dr. Aleyamma Mathew
4. Pre-cancer & Cancer registry and follow up of pre-cancer cases registered in Early Cancer Detection Centre (ECDC), Palakkad.
(Funded by: Kerala State Council for Science, Technology and Environment)
Principal Investigator : Dr. Kalavathy MC

6. Merits, Conferences / Workshops attended, Papers presented

Dr. Aleyamma Mathew

1. Convenor of MSc. Biostatistics core committee, Mahatma Gandhi University, Kottayam and Research guide in Epidemiology, University of Kerala and Mahatma Gandhi University
2. Guest lecture for Master of Public Health (MPH) students on "Cancer epidemiology in Kerala" at Achutha Menon Centre for Health Science Studies, SCTIMST, Trivandrum, 27 September 2004.
3. 24th Annual convention of Indian Association for Cancer Research, Noida, Uttar Pradesh. 9-12 February 2005. Paper: "A correlation study of organochlorine levels in serum, breast adipose and gluteal adipose tissue among breast cancer cases in Kerala, India".

Dr. Kalavathy MC

XI Biennial conference of the Indian Society of Oncology and XIII Biennial conference of the Indian Society of Medical and Paediatric Oncology, Bangalore. 7-10 October 2004. Paper: "Follow up of cancer patients registered in a rural Early Cancer Detection Centre, Kerala".



Shri. V. Ramachandran, Vice-Chairman, State Planning Board delivering the presidential address in connection with the inaugural function of World No Tobacco day observation. (31st May 2004)

COMMUNITY ONCOLOGY

Dr. Ramani S. Wesley	Additional Professor & Head
Dr. Gigi Thomas	Assistant Professor
Dr. R. Jayakrishnan	Lecturer

The major activities of this Division were centered around human resource development, primary and secondary prevention of common cancers through cancer education and detection camps and early detection clinic functioning in RCC. The Division organised a national workshop on "Colposcopy and cervical precancer management" in conjunction with National Cancer Awareness Day on 7th November 2004.

Human Resource Development

a) Professional education and training:

Trainer trainee programmes were given to 215 doctors, 370 nurses, 90 community volunteers, 1562 teachers and student representatives and 995 office workers.

International School of Colposcopy:

150 doctors, 50 nurses and 10 paramedicals were given training in colposcopy and treatment of pre-invasive lesions of cervix and low cost cervical cancer detection strategies.

b) Public education:

Through 34 cancer education programmes, 5904 persons were trained using audio visual slides and LCD projection as follows. (Table- 19&20)

Table - 19: Cancer Awareness Programmes

Categories	No. of programmes	No. trained
Doctors	2	215
Nurses	7	370
Community Volunteers	1	90
Student representatives & teachers	4	1562
Bank / Factory / Company workers	5	995
Lay public	8	1975
Tribal population	7	437
Total	34	5904

2. Generation and distribution of health education materials

- a) Audio-Visual Aids: 200 slides, photo albums on oral precancers, oral cancers and colposcopy, and 2 CD's on tobacco control were prepared in collaboration with C-DIT for training. The health education materials generated during previous years were distributed among community volunteers and other target groups.
- b) Exhibitions: Seven exhibitions were conducted which were viewed by around three lakhs people, the majority of which were lay public.
- c) Training manuals, Modules and Atlas: Teaching manual for doctors and health workers, four booklets, 3 articles in laypress and 171 health education display boards were prepared.

3. Anti-tobacco programmes and campaigns

Tobacco awareness was given to 5904 persons through 34 programmes. In collaboration with IMA Trivandrum branch, organised an open forum in connection with the World No Tobacco Day based on the current year's theme "Tobacco and poverty: A vicious cycle". The workshop was inaugurated by the Hon'ble Minister for Health and Family Welfare, Government of Kerala, Sri. Kadavoor Sivadasan. A magic show demonstrating the hazards of tobacco was presented by Magician Gopinath Muthukad. Noted film actor, Sri. Suresh Gopi felicitated the gathering.

4. Clinics:

- a) **Early cancer detection clinic:** A total of 8104 persons with warning signals of cancer were evaluated. A total of 56 oral cancers, 37 breast cancers, 18 cervical cancers and 19 other cancers were detected. 235 oral precancerous lesions and 53 benign lesions of the breast and 221 cervical precancers were detected and kept under surveillance.
- b) **Dysplasia clinic:** Out of the 235 cases of oral precancers diagnosed, 127 were leukoplakia and 108 were Oral Sub Mucous Fibrosis. 185 patients had other benign oral lesions. Precancerous conditions were given medication and kept under close follow up. Biopsies were done for 87 high-risk oral precancers and 46 precancers were surgically excised.

1) **Colposcopy clinic:** 2445 colposcopies, 430 colpo directed biopsies, 2490 papsmears, 38 LEEP diathermic excisions and 25 cryotherapies were done for cervical precancers. 120 low grade lesions, 46 high grade lesions (CIN 2 & 3) and 26 invasive cancers were detected.

2) **Breast screening clinic:** Propagation of breast self examination and clinical evaluation of breast disease and referral for mammography were done for 375 patients.

5. Peripheral early cancer detection programmes through ECDCs, Janakeeya Asoothranam programmes and Village Level Cancer Control Programmes

Early Cancer Detection Clinics (ECDC): The peripheral centres and nodal centres were referring patients with precancers and cancers to the ECDC of RCC for confirmation of diagnosis, colposcopy, LEEP, cryotherapy etc. Technical guidance and assistance were also given for the nodal centres of RCC. The main stay of peripheral cancer detection programmes was through 34 cancer detection camps through which 5,603 people were screened.

6. Ongoing Research Projects:

1. Evaluation of early detection of cervical cancer precursors by Visual Inspection with Lugol's Iodine (VILI) and Visual Inspection with Acetic Acid (VIA) and magnified VIA (VIAM) in Kerala, India. (Funded by: International Agency for Research on Cancer and Bill Gates)

Principal Investigator : Dr. Ramani S. Wesley

2. Evaluation of 3 treatment methods (Cryotherapy, Loop Electrosurgical Excision Procedure (LEEP) & Hysterectomy) in the management of precancers of cervix. (Funded by: International Agency for Research on Cancer and Bill Gates)

Principal Investigator : Dr. Ramani S. Wesley

3. Assessment of various cellular and molecular markers associated with HPV mediated cervical cancer progression.

Co-Investigator : Dr. Ramani S. Wesley

4. Satellite training centre for training health professionals in colposcopy, visual screening strategies, cryotherapy. (Funded by Bill Gates through International Agency for Research on Cancer and ACCP)

Principal Investigator : Dr. Ramani S. Wesley

5. Tobacco Cessation Clinic project. (Funded by: WHO)

Investigator : Dr. R. Jayakrishnan

6. Prevention and control of cancer diseases in the Tribal population of Kerala State. (Funded by: Govt. of Kerala)

Principal Investigator : C. Sreekumar

7. Fellowship, Conferences / Training programme attended Papers presented

Dr. Ramani S. Wesley

1. Delivered a guest lecture on 'Cancer control strategies of Kerala' for the Harvard University students at Achuthamenon Centre SCTIMST on 7 January 2005.
2. Attended WHO desk review meeting for editing a manual on 'Comprehensive cervical cancer control' on 17 February 2005.

Dr. Gigi Thomas

1. Kerala Dental Conference, Varkala. 20-21 November 2004. Paper, "Oral cancer diagnosis: a diagnostician's dilemma".
2. XVI Annual conference of Indian Academy of Oral Medicine and Radiology, Goa. 14-16 January 2005. Best paper award for "Trivandrum Oral Cancer Screening Study: Surgical excision of oral precancers".

Dr. R. Jayakrishnan

1. Awarded UICC Asia Pacific Cancer Society Training Grant funded by the William Rudder Memorial Fund (Australia) for participating in the training programme on tobacco control at Melbourne, Australia.

National training programme on Preventive Oncology, Tata Memorial Hospital, Mumbai. 6-7 February 2005.

Training programme on 'Tobacco Cessation', organised by WHO at NIMHANS, Bangalore. 14-19 March 2005.

Table - 20: Details of Cancer Awareness Programmes

Date	Place/Venue	Organised by	No. Attended	Type of Participants
07/04/04	Poolappura	Kinostan Latex	70	Employees
21/04/04	Technopark	U.S. Software and Asraya	200	Employees
24/04/04	Vizhinjam	Asraya	150	Lay public
29/04/04	RCC	Asraya	90	Lay public
08/06/04	RCC	B.Sc. Nursing students	60	B.Sc. Nursing students
10/05/04	RCC	Palliative Division, RCC	20	Nurses
19/05/04	Killimanoor	Friends Samskarka Samithi	120	Lay public
20/05/04	RCC	Nursing Division, RCC	90	B.Sc. Nursing students
04/06/04	LIC Pattom	RCA	250	LIC employees
10/06/04	RCC	Nursing Division, RCC	12	M.Sc. Nursing students
22/06/04	SMV High school	RCA	460	Students
04/07/04	Karamana	RCA	120	Lay public
09/07/04 10/07/04	Sultanbathery	Tribal project	136	Tribal people
13/07/04	RCC	Nursing Division, RCC	28	Govt.&Pvt. nurses
22/07/04	Peroorakada	Principal, Public Health Training School	200	Female health workers
24/08/04	Palakkad	Tribal project	33	Tribal people
25/08/04	Palakkad	Tribal project	41	Tribal people
26/08/04	Irunbakachala	Tribal project	63	Tribal people

19	07/09/04	RCC	RCC	120	B.Sc. Nurses
20	10/09/04	Technopark	NEST	225	Software engns
21	07/10/04	Palkulangara	RCA	420	H.S. Students
22	15/10/04	Ananthavadi	Catholic Hospice Centre	250	Collage Industry workers
23	12/11/04	Kanjirankulam	Tabitha	250	Lay public
24	17/11/04	Paiuthippara	Emanuel Marthoma Church	80	EMe women
25	20/11/04	Poonthura	Asraya	250	School children
26	29/11/04	Idukki	Tribal project	72	Tribal people
27	30/11/04	Idukki	Tribal project	52	Tribal people
28	01/12/04	Idukki	Tribal project	45	Tribal people
29	03/12/04	Kottayam	Kaduthuruthy panchayath	275	Health workers
30	08/12/04	Chata	Tamil School	432	H.S. students
31	28/01/05	Kayankulam	Senior citizen's forum	350	Lay public
32	21/02/05 22/02/05	Kozhenchery	District Cancer Centre	550	Lay public
33	25/02/05	Puthupally	Grama Panchayath	375	Lay public
34	18/03/05	RCC	RCC	40	B.Sc. Nursing students

Table - 21: Details of Cancer Detection Camps

Sl. No.	Date	Place	Organised by	Total Screened	New Cancers	Old Cancers	Oral Pre-cancers	Other pre-cancers
1	04/04/04	Wynad	Tribal project	40	1	0	3	
2	06/04/04	Wynad	Tribal project	48	-	-	4	
3	11/06/04	Palghat	Tribal project	68	1	-	2	
4	12/06/04	Gopalapuram	Tribal project	74	-	-	2	
5	30/06/04	Pandalam	Archana Hospital	155	1	-	2	2
6	07/07/04	Alkulam	Airforce	300	-	-	1	5
7	14/07/04	Pandalam	Archana Hospital	62	2	-	4	
8	21/07/04	Sakthikulangara	Asraya	270	4	-	8	8

33/07/04	Idukki	Tribal project	71	-	-	8	-
01/08/04	Idukki	Tribal project	63	-	-	4	-
14/08/04	Manacaud	RCA	70	-	-	4	-
03/09/04	Piravanthoor	Grama Panchayath	110	2	-	3	-
13/09/04	Chenkottukonam	B.Sc. Nursing students	300	3	-	2	-
24/09/04	Vadakara	Vadakara Municipality	350	6	-	8	-
25/09/04	Wynad	Tribal project	89	3	-	3	-
26/09/04	Sultanbathery	Tribal project	56	-	-	3	-
26/09/04	Sultanbathery	Tribal project	79	-	-	5	-
22/11/04	Poojappura	Ayurveda College Hospital	300	3	-	2	-
26/11/04	Neyyattinkara	Municipal Office	350	3	-	5	-
03/12/04	Kaduthuruthi	Grama Panchayath	115	1	-	2	-
04/12/04	Mammala	Lion's club, Sasthamiyal	75	1	-	2	-
10/12/04	Nooranadu	Health Inspector, Charumoodu	242	3	-	7	-
17/12/04	Muvakkumpuzha	Lion's club	265	4	-	1	-
29/12/04	Vithura	Chamayam Resident's Association	150	3	-	5	-
10/01/05	Poojappura	Achutha Menon Foundation	190	5	-	4	-
28/01/05	Kayankulam	Senior Citizens forum	325	4	-	8	-
25/02/05	Puthupally	Grama Panchayath	350	3	-	8	-
04/03/05	Amboori	P.H.C.Amboori	125	2	-	3	-
06/03/05	Edathua	Mahajubilee Hospital & Lions club	350	3	-	4	-
11/03/05	Kayankulam	Senior Citizen's forum	175	2	-	4	-
21/03/05	Idukki	Tribal project	78	-	-	3	-
22/03/05	Idukki	Tribal project	78	-	-	7	-
23/03/05	Amboori	PHC Amboori	200	2	-	2	-
30/03/05	Amboori	PHC Amboori	30	-	-	2	-

PAIN & PALLIATIVE CARE

Dr Cherian Koshy	Associate Professor & Head
Dr. Vasudevan Mappat	Anaesthesiologist (Retired on 31-07-2004)
Dr Manjula	Resident Medical Officer
Dr Prasanth C V	Resident Medical Officer
Dr PT Latha	Lecturer in Sociology

The Division continued to have multifaceted activities that include the conduct of out-patient services and support groups, in-patient care, counseling, home care, rehabilitation, and providing prostheses for post-mastectomy patients.

Eminent personalities like Jan Stjensward, Former Chief WHO collaborating Centre for Palliative Care and Frank Ferris, Medical Director, Palliative Care, San Diego Hospice and Palliative Care Centre, visited the division. The two voluntary organizations 'Ashraya' and 'Care-plus' rendered supportive services to the department. The division also involved in the conduct of the Palliative Clinic at all peripheral centers. A book in Malayalam, "Cancer and Palliative care" authored by Dr. C.V. Prasanth was released on 5th December 2004. Oral morphine solution continued to be manufactured in collaboration with the College of Pharmaceutical Sciences.

Patient statistics

New cases	2802
Follow up cases	4639
Lymphoedema cases	440

CMEs / Training programmes conducted

1. CME on Palliative care under the auspices of Indian Medical Association, 3 January 2004.
2. One day CME - 'Care beyond cure', 6 March 2005.
3. Orientation courses for Medical, Nursing, Dental, MSW, and Overseas Nursing students as well as Volunteers.
4. One month Certificate course for Doctors, Nurses and Nursing assistants.

Award, Conferences / Workshops attended, Papers presented

Dr. Cherian Koshy

5th Annual meeting of International Network for Cancer Treatment and Research (INCTR), Cairo, Egypt. 2-5 October 2004.

Received travel award to present a paper titled 'Domiciliary care of cancer patients requiring palliative support in a developing country-India: The RCC experience', at the Global summit on Palliative Care, Seoul, South Korea. March 2005

Dr. Prasanth CV

International workshop on 'Community participation in palliative care', Manjeri, Kerala. November 2004.

2. Attended 'Training the trainers programme in Palliative Care' organized by WHO at Tata Memorial Hospital, Mumbai. January 2005.

Kumari Thankam, Nursing staff in Charge

Faculty member for Palliative course programmes conducted by Institute of Palliative Care, Calicut.

Oral Morphine consumption

A total of 14.35 Kg of morphine (solution and tablets) was dispensed to patients who reported to the RCC outpatient and to other peripheral centers.

DENTAL CARE

Dr. Nalinakumari K R

Assistant Professor

The Division rendered a wide variety of treatment modalities for the oral health of patients affected by carcinoma.

Clinical activities

1. Basic procedures like oral prophylaxis, periodontal therapy, dental extractions and prosthodontic therapy.
2. Minor surgeries like oral biopsies and Reconstructive procedures such as construction of maxillofacial prosthesis.
3. Therapeutic management of precancerous lesions, osteoradionecrosis and trismus.
4. Pre and post radiation care of teeth.
5. Management of oral problems in patients undergoing chemotherapy like mucositis, rampant caries, xerostomia, etc.

Table - 22: Patient statistics

Total number of patients attended to	3170
Total number of new cases	733
Biopsies	106
Teeth extraction	3721
Post-radiation care (PRC)-new cases	229
Total number of PRC cases	764
Maxillofacial prosthesis	9
Oral prophylaxis	140
Osteoradionecrosis management	11

Table - 23: Site wise distribution of biopsies done

Site	Number	Percentage
Buccal mucosa	61	58.65
Commissure	4	3.84
Hard palate	6	5.76
Dorsum of tongue	1	0.96
Border of tongue	10	9.62
Under surface of tongue	2	1.93
Floor of mouth	3	2.89
Alveolus	17	16.35

Pre and Post radiation care of teeth:

This division developed a preventive programme viz. Fluoride therapy to tackle the problem of post radiation care of teeth, sensitivity, etc. in patients suffering from cancer of the oral cavity, upper and lower parts of the oesophagus, parotid gland etc.

Pre and post-radiation care of teeth included procedures such as oral prophylaxis, conservative dental treatments, preparation of vinyl fluoride caries, application of fluoride gel and oral hygiene instructions.

NURSING SERVICES

Dr. Sr. Vijaya Puthusseril	Chief Nursing Officer & Asso. Professor.
Ms. S. Geetha	Nursing Supervisor
Ms. Annamma Jacob	Nursing Supervisor

The Division provided round the clock quality patient care at the outpatient and inpatient units of the Centre. International Nurses Day (12th May) was commemorated by a panel discussion on "Nurses working with poor against poverty", which was the theme of the year.

Training programmes

1. Orientation/Observation update for students from Sri Mookambika College of Nursing, Kulasekharam on 24th & 27th April 2004 (26 students & 3 faculty members for each day).
2. Clinical posting in Oncology Nursing for 3rd year B.Sc. students of College of Nursing, Thiruvananthapuram from 3rd to 15th May 2004 (16 students) and from 17th to 29th May 2004 (16 students).
3. Clinical posting in Oncology Nursing for M.Sc. students of College of Nursing, Thiruvananthapuram. Four IVth semester students of Medical Surgical Nursing (31st May 2004 to 19th June 2004) and four IIIrd semester students of Paediatric Nursing (11th-23rd September 2004).
4. The State level training programme for nurses on 'Recent trends in cancer care', sponsored by DGHS from 12th to 22nd July 2004 (30 participants).
5. The State level training programme for senior level nurses on 'Update on ward management skills' sponsored by DGHS from 7th-17th September 2004 (30 participants).
6. Orientation/Observation update for students from Karolinska Institute of Sweden under Global Health Exchange programme affiliated to College of Nursing, Thiruvananthapuram on 7th January 2005 (22 students and 1 faculty).
7. Clinical posting in Oncology Nursing for B.Sc. students of college of Nursing, Thiruvananthapuram, from 1st to 9th February & 7th

to 11th March 2005 (26 Students) and from 13th-30th March 2005 (26 students).

2. Orientation/Observation update for students from College of Nursing, Kottayam on 28th February 2005 (22 students and 1 faculty).

Nursing Assistants Training Course

Batch of 19 students completed their course in September 2004.

Merits, Fellowship, Conferences/Training programmes attended, Papers presented

Dr. Sr. Vijaya Puthusseril

External examiner for theory and practical examinations of Post Certificate B.Sc. (N) students at All India Institute of Medical Sciences, New Delhi. May 2004

13th International conference on cancer nursing, Sydney, Australia. 8-12 August 2004.

Dr. Sr. Vijaya Puthusseril, Ms. Sreelekha R, Clinical Instructor & Ms. Reena A. Thankaraj, Staff Nurse

Course Co-coordinators for DGHS aided training programmes for Nurses (10 days), RCC Thiruvananthapuram. July & September 2004.

Ms. Geethakumari B.S, Head Nurse

UICC International Oncology Nursing Fellowship (IONF) of Christie Hospital, Manchester, UK. October 2004.

Ms. Saraswathy Amma P & Sindhu P. M., Staff Nurses

Training programme in 'Microvasculars Surgery' at Ganga Medical Center & Hospitals, Coimbatore. 31st May to 4th June 2004.

Ms. Lizyamma Jacob, Head Nurse

'Inclinerator training programme' at District Hospital, Kollam. 18 May 2004.

Ms. Bindhu M, Staff Nurse

10 days training programme sponsored by DGHS on 'Advanced clinical excellence in critical care' at SCTIMST, Thiruvananthapuram. 26 June 2004.

**Mr. Bijl P.R, Ms. Marykutty Mathew, Ms. Ajitha T.L,
Ms. Vasumathy G & Ms. Kavithakumari C.G (Staff Nurses)**

10 days training programme sponsored by DGHS on 'Recent trends in cancer care' at RCC, Thiruvananthapuram. 12-22 July 2004

Ms. Ilin William, Staff Nurse

10 days training programme sponsored by DGHS on 'Human relations in nursing' at College of Nursing, Thiruvananthapuram. 21-31 July 2004.

Ms. Sally Abraham, Head Nurse

10 days training programme sponsored by DGHS on 'Update nursing management technique: A challenge' at SCTIMS Thiruvananthapuram. 2 -12 August 2004.

**Ms. Sunitakumari, Head Nurse, Ms. Anjamma Joseph,
Ms. Jaya T.S & Aleyamma Mathew (Staff Nurses)**

10 days training programme sponsored by DGHS on 'Update ward management skills' at RCC, Thiruvananthapuram. 7-17 September 2004.

CLINICAL LABORATORY SERVICES

Ms. C. Gangadevi

Technical Officer

This Division, responsible for primary diagnosis of cancer, has one of the well equipped clinical laboratories in the State and provided round the clock emergency services for the benefit of OP and IP patients analyzing 500 samples daily.

The Biochemistry section is well equipped with most modern fully automated Dry chemistry analyzers and Semi wet chemistry analyzers doing 200 samples daily. Specialized services included Protein Electrophoresis, Immunoglobulin assay, etc.

The Hematology section is equipped with four types of automated analyzers doing 375 samples per day. The coagulation profile is being done using the machine THROMBOTRACK

Quality Assurance

For Biochemistry and Hematology investigations, collaboration with TORAD CALIFORNIA was made.

Training

Training was given to B.Sc. MLT and M.Sc. Biotechnology students from different Centres and Universities.

Table - 24: investigations carried out during the period

Biochemistry Investigations	No	Hematology Investigations	No	Urine Analysis	No	Special Investigations	No
Sugar	42292	Hemoglobin	122534	Colour	668	IG Assay	497
Blood Urea	35873	Total Count (WBC)	119692	Reaction	2596	Electro-phoresis	353
Ureterimine	37735	Platelet count	119484	Sp. Gravity	387		
Uric acid	21308	Bleeding Time	5771	Albumin	7499		
Bilirubin	22072	Clotting Time	5771	Sugar	8802		

SGOT	22801	Prothrombin Time	1352	Acetone	1154
SGPT	22916	APTT	440	BJP	539
ALP	19381	PCV	6243	Bile pigments	369
Total protein	22649	ESR	7620	Bile Salt	360
Albumin	12414	RDS	500	Urobilinogen	344
Globulin	12404	Differential Count	22545	Deposit	7139
Cholesterol	851	Retic	89		
Calcium	16097				
Phosphorus	1320				
Sodium	22250				
Potassium	22830				
CCT	8663				
LDH	8010				
Amylase	638				
Total	342504		412174	29867	850

BLOOD BANK

Dr. P. Jayalakshmi

Resident Medical Officer

Sri. P. Meera Sahib

Senior Scientific Officer

During the reporting period there has been considerable increase in the number of Blood donors, preparation and issue of blood components mainly Packed Red Cells and Platelet Rich Plasma.

Table - 25: Blood Bank Statistics

Blood grouping	-	20750
Cross matching	-	6613
Blood donors	-	9145
HbsAg +ve donors	-	91
HCV +ve donors	-	45
HIV +ve donors	-	2
VDRL +ve donors	-	7

Components Prepared

Packed Red Cells	-	8690
Platelet Rich Plasma	-	8189
Single Donor Plasma	-	501
Platelet Pheresis	-	30

Conference attended

Sri. P. Meera Sahib

National conference of Indian Society of Blood Transfusion and Immunohaematology, Chennai. 22-25 November 2004.

CLINICAL SERVICES & MEDICAL RECORDS

Raveendran Nair R.

Administrative officer
(Clinical Services)

This Division is entrusted with Front office management, maintenance of Medical Records, Patient accounts & billing, management of Pharmacy & Vehicles, Cancer Care for Life schemes and other patient related services. During the reporting period this Division was actively involved in the newly introduced Telemedicine services for conducting follow up clinics at various peripheral centers.

1. Clinical Activities

The following Tables and Figures depict the magnitude of patient related activities undertaken during the reporting year.

Table - 26: Total Patient statistics: 2004

Item	Numbers
New cases registered	10255
Review cases*	114649
Total patients (New + Review)	124904
Daily average	416
Average attendance per patient	12
No. of in patient admissions	9805
Total bed occupancy	84078
Average bed occupancy	230
Percentage of bed occupancy	85
Average length of stay	7
Hospital death	533

*Follow up at peripheral centers, Palliative care, consultation from clinic to clinic are not included.

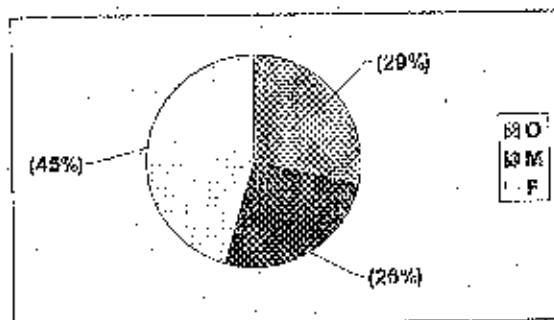
(b). Patient categories

Every new patient reported to RCC is assessed and categorized as M & F.

- O - Affordable to pay fully
- M - Affordable to pay partially
- F - Not affordable to pay

The statistics showed that there has been an increase in 'F' category and decrease in 'O' category.

Fig-8: Categories: Percentage wise registration of new cases: 2004



(b). Patient Distribution: New cases (Age/Sex & Religion wise)

Among 10255 new cases, 52% were males and 48% were females.

Table - 27: Age/sex wise distribution: New cases: 2004

Age Group	Male	Female	Total	Percentage
0 - 14	266	212	478	5%
15 - 24	203	246	449	4%
25 - 34	280	478	758	7%
35 - 44	565	829	1394	14%
45 - 54	1064	1183	2247	22%
55 - 64	1360	971	2331	23%
65 - 74	1168	747	1915	19%
75+	433	250	683	6%
Total	5339	4916	10255	100%
Percentage	52%	48%	100%	

Table - 28: Religion wise distribution: New cases: 2004

Religion	No.	Percentage
Hindu	6148	60%
Muslim	1913	19%
Christian	2194	21%
Total	10255	100%

1(c). Patient Distribution: Multi-specialty clinics

Table - 29: Specialty clinics: New cases: 2004

Clinic	No.	Percentage	
A	1358	13%	A - Lympho reticular system, bone, and CT
B	2213	21%	B - Head and Neck cancers
C	1631	16%	C - Breast and CNS
D	1515	15%	D - Genito urinary and others NOS
E	2419	24%	E - Respiratory and Gastro intestinal
F	478	5%	F - Patient less than 14 years of age
G	641	6%	G - Thyroid
Total	10255	100%	

Table - 30: Speciality clinics: New & Review cases: 2004

Clinic	New	Review*	Total	Average
A	1358	18172	19530	65
B	2213	18167	20380	68
C	1631	22528	24159	81
D	1515	18231	19746	66
E	2419	15226	17645	59
F	478	15499	15977	53
G	641	6826	7467	25
Total	10255	114649	124904	416

Table - 31: Speciality clinics: In-patient admission: 2004

Clinic	Admission**	Percentage
A	2632	27%
B	1691	17%
C	1414	14%
D	1074	11%
E	1374	14%
F	967	10%
G	653	7%
Total	9805	100%

**Admission to palliative care, surgery, also included.

1(d). Patient Distribution: Referral

RCC is getting patients from different hospitals on referral basis. The majority of patients were from teaching hospitals.

Table - 32: Distribution of patients: Referred cases: 2004

Referred from	No.	Percentage
Teaching Hospitals (MCH)	3691	36%
Govt. hospitals	752	7%
Other corp. hospitals	95	1%
ESI hospitals	420	4%
ECDC and peripheral centers	138	1%
Other Cancer Centers	132	1%
Private doctors	2687	28%
Private hospitals	2340	23%
Total	10255	100%

1(e). Patient Registration: Geographical distribution

In RCC more than 26% of patients were from Trivandrum district and more than 12% were from outside the state of Kerala.

Table - 33: Geographical arcawise registration of New cases: 2004

District	Number	Percentage
Trivandrum	2727	26.59%
Kollam	2068	20.16%
Pathanamthitta	720	7.02%
Allapuzha	529	5.15%
Kottayam	273	2.66%
Idukki	148	1.42%
Ernakulam	523	5.09%
Trichur	442	4.31%
Palakkad	350	3.41%
Calicut	295	2.87%
Malappuram	485	4.72%
Wayanad	43	0.41%
Kasargode	95	0.92%
Kannur	323	3.14%
Other states	1236	12.05%
Total	10255	100%

2. Pharmacy

During the reporting period cost wise turnover of pharmacy was Rs.6,58,08,451/-. Out of this, anti-cancer medicines worth of Rs.13,58,295/- was issued free of cost to 187 cancer patients belonging to very low socio-economic status, as recommended by the academic forum of the Centre. They are ALL-95, HD-34, WT-4, NHL-33, GCT-20 and LCH-1.

3. Cancer Care for Life [CCL] Scheme

During the reporting period 134 patients availed the facilities of the Cancer Care for Life scheme of this Centre. Rs.56,55,562/- was spent towards the cost of investigation, treatment etc. of these patients.

4. Student Training

- 1) Thirty students of M.App.Science (Medical documentation) course from M.G University Kottayam have completed their practical study for a period of 15 days on Medical Record organization and management.
- 2) Two students of Hospital Administration have undergone practical training for a period of 1 month.

LIBRARY AND INFORMATION SERVICES

M. Chandrakumaran Nair Senior Librarian

Advancements in computer, communication and associated technologies opened up new vistas in storing, managing and accessing information through digitization. With the aim of providing adequate information on the desktop on cancer and associated subjects to clinicians, researchers, health planners and other health professionals, a digital library adopting current tools and techniques was set up. It includes both physical and virtual collection of documents in the form of CDs/DVDs, electronic journals, E-books, databases, websites, digital records of video clippings, softwares, data files and other internet resources. Library is managing a Local Area Network on a Windows NT platform with Network Attached Storage systems.

Oncology Digital Library

The Digital Library Resources such as RCC publications, Reprints, Library catalogue, Holdings list of journals etc have been updated and were made accessible over the internet. Library continued to provide intranet access to the Current Awareness Services like RCCL Current Contents, Onconews (Press clippings), Conference Alert, Reprint service etc. Desktop full text access to 55 journals was also provided on the library network nodes. As part of the Onconet Project, library has acquired a CD/DVD server in which the CDs are being mirrored. It works on 3 tier architecture and the core functions are CD mirror server application, network storage solution and digital photo library.

Access to DELNET and INIS

Library renewed the membership to DELNET which provided a variety of services to user community. RCC has been provided with free access to International Nuclear Information System (INIS) database of IAEA which carries about 2.5 million abstracted and indexed records and a comprehensive collection of over 600,000 of full text INIS relevant documents including Nuclear Medicine, Radiation physics, Energy, Environment etc.

Access to 'ScienceDirect'

Library provided online access to 'ScienceDirect' of Elsevier which facilitates campus wide access (IP based) to full text of 17 international journals, apart from its abstract database.

Collection Development

During the reporting year, library subscribed to 90 journals of which 55 are international, 520 books, monographs and back volumes, 480 reprints (other than those received in the library) and 60 CD Rom's were added to library resource collection.

Resource sharing

As part of the Resource Sharing programmes, 'RCCL Current Contents' hard copy services was extended to the Kidwai Memorial Institute of Oncology. Library renewed the Institutional membership to British Library. Library continued its activities to interact with national, international organizations to collect necessary information and for information exchange.

External users / Project students / Training

External users continued to enjoy entry to the library with a small consultation fee introduced this year and access to all library materials was provided. A number of external users from Medical colleges, University departments, and other organizations visited the library apart from the short term project students and trainees of the Centre. This Division was responsible for the compilation and editing of the Annual report of the Centre for 2003-04.

Fellowship, Conferences / Workshops attended, Papers presented

Sri. M. Chandrakumaran Nair

1. Awarded the UICC ICRETT Fellowship for one month and visited the Interuniversity Library of Medicine, Paris and other major oncology centres in France in September 2004.
2. International Conference on Information Management in a knowledge society (ICIM 2005), Mumbai, 21-25 February 2005. Paper: "Oncology Digital Library: A learning resource centre for oncologists".

Sri. Saji S. Nair

International CALIBER: annual convention of the Information & Library Network (INFLIBNET) centre, Cochin University of Science & Technology, Kochi. 2-4 February 2005.

INFORMATION SYSTEMS

Manoj G. Systems Manager

The Division continued to support the computerization activities of the Centre by developing and maintaining softwares, servers and Oracle & Ingres databases, LAN & WAN.

Activities:

The division took initiative for the upgradation of Telemedicine and Hospital Information System through the project, "OncoNET - Cancer Care for Rural Masses" in collaboration with C-DAC, Trivandrum and ISRO, with an outlay of Rs.236 lakhs, funded by Ministry of Information Technology, Govt. of India. The following facilities were implemented in RCC and peripheral centers as part of this project:

1. Installed VSAT antennas, Sky IP units and Video Conferencing System in RCC and peripheral centers at Kochi, Palakkad, Kannur, Kozhencherry and Kollam.
2. Developed a software for telemedicine activities to view patient data, registration, follow-up, etc.
3. Installed X-ray scanner and 3-D microscope with camera and DICOM imaging software for tele-pathology and tele-radiology consultations.
4. As part Oncology Resources Centre, technical support was given to purchase and install a Digital Library system in the Library. It is connected to VSAT network and RCC Intranet.
5. Application software development for Hospital Information System was continued. Total 20 modules were identified and 7 modules were implemented. Hardware for web based Hospital Information System: -

Five XEON Servers, one P4 Servers 80 thin clients,
25 PCs, 30 Printers and Networking components.

Training programmes

Training was given to M. Tech., B.Tech, MCA and B.Sc.(Computer Science) students from various colleges.

EARLY CANCER DETECTION CENTRE [ECDC], ERNAKULAM

Dr. Latha.A. Cytopathologist

The ECDC Ernakulam, one of the peripheral centres of RCC, Trivandrum, offers facilities for cancer screening, early detection, periodic follow up of RCC treated patients, pain & palliative care and conducts cancer awareness programmes for the public and members of Kudumbasree unit. The Centre also offers Telemedicine facility and videoconferencing for cancer patients. The Centre provided colposcopy, cytology, histopathology and hematology diagnostic services to the patients referred from other hospitals.

Number persons screened in the Centre	:	6581
Number persons screened in Camps	:	1809
Total	:	8390
Cancer Detection Camps conducted	:	15
Awareness classes conducted	:	15

Table - 34: Details of Cytological specimens: 2004-2005

Specimen	ECDC	Camp	Total
Cervical smear	3757	635	4392
Oral smear	319	10	329
Fine Needle Aspiration Cytology	1629	154	1783
Sputum Cytology	82		82
Colposcopy	5		5
Body fluids	116		116

Table - 35: Details of Gynaecological specimens: 2004-2005

Lesion	ECDC	Follow up	Camp	Total
Normal	284	75	86	455
Inflammation	1247	412	293	1952
Atypical glandular cells	19	7		26
Trichomonas vaginalis infection	447	88	93	628
T.V with Mild Dysplasia	21	4	5	30

T.V with moderate Dysplasia	3		1	4
T.V with Severe Dysplasia	3	3		6
Fungal infection	51	8	23	82
Fungal infection with atypia	5	3	2	10
Human Papillomavirus infection	3	2	1	6
Herpes simplex Virus Infection	343	67	36	446
Viral infection with Mild Dysplasia	18	8	2	28
Viral infection with Moderate Dysplasia	7	4	1	12
Viral infection with Severe Dysplasia	1			1
Mixed infection	301	82	63	446
Mixed infection with Dysplasia	90	43	13	146
Mild Dysplasia	26	12	2	42
Moderate Dysplasia	5	2		7
Severe Dysplasia	9	3	1	13
Autolytic atrophy	4			4
Carcinoma in situ	4			4
Invasive squamous cell carcinoma	21		1	22
Radiation changes	1		1	2
Miscellaneous	19		1	20
Total	2934	823	635	4392

Table - 36: Details of Non-Gynaecological specimens: 2004-2005

Oral lesions	Centre	Camp
Benign	230	10
Pre-malignant	20	
Suspicious	4	
Malignancy	65	
Total	319	10
Sputum		
Benign	67	
Malignant	14	
Miscellaneous	1	
Total	82	

Breast		
Benign	516	38
Suspicious	9	
Malignancy	91	2
Total	616	40
Thyroid		
Benign	444	42
Suspicious	12	
Malignancy	21	
Total	477	42
Lymph node		
Benign	244	5
Malignancy	68	
Total	312	5
Salivary gland		
Benign	36	2
Malignancy	4	
Total	40	2
Liver		
Malignancy	4	
Other sites		
Benign	136	52
Malignancy	4	
Total	140	52
Body fluids		
Nipple Discharge		
Benign	103	13
Ascitic fluid		
Benign	7	
Pleural fluid		
Benign	5	
Urins		
Malignancy	1	

EARLY CANCER DETECTION CENTRE (ECDC), PALAKKAD

Dr. I.B. Sulekha Medical Officer

The Early Cancer Detection Centre, Palakkad, one of the peripheral centres of RCC Trivandrum, offers facilities for cancer awareness, early cancer detection, chemotherapy, pain and palliative care, follow up for cancer patients through RCC doctors and tele-consultation.

Major activities

A total of 28 cancer awareness classes and 30 cancer detection camps were conducted in association with various sponsors, for tribals, Ayalkootam ladies, etc. Conducted a follow up clinic and review examination for high risk persons and cancer patients under STEC Project in July 16, 2004. Tele-medicine programmes started as part of the 'Onconet' project of RCC. Pap smear examination at District Hospital Palakkad is being attended to on all Thursdays since January 2005. 34 new cases were registered at the Pain clinic. Number of follow ups were 123.

Number of persons screened in the Centre	: 1854
Number of persons screened in Camps	: 6500
Total number screened	: 8354

Table - 37: Details of cytological specimens

SPECIMEN	ECDC	CAMP	TOTAL
Cervical smear	325	807	1132
Oral smear	58	78	136
Sputum	15	--	15
Breast (FNAC)	25	29	54
Thyroid (FNAC)	5	71	76
Lymph node (FNAC)	23	3	26
Nipple discharge	7	4	11
Fluids	4	--	4
Other sites	9	24	33
Total	471	1016	1487

Table - 38: Gynaecological specimens

SPECIMEN	ECDC	CAMP	TOTAL
Normal	150	466	616
Inflammation	78	228	306
T.V.Infection	26	49	75
Fungal Infection	2	--	2
HSV Infection	2	11	13
Mixed Infection of TV and HSV	2	--	2
HPV Infection	1	--	1
Endocervicitis	21	34	55
Glandular cell atypia	2	6	8
Mild dysplasia	18	7	25
Moderate dysplasia	7	3	10
Severe dysplasia	3	--	3
Ca in situ	3	--	3
Invasive squamous cell ca	10	3	13
Total	325	807	1132

NATURAL BACKGROUND RADIATION CANCER REGISTRY [NBRR], KARUNAGAPPALLY

Dr. P. Jayalekshmi Officer-in-charge

In India, Karunagappally and Manavalakkurichi are the two areas where the natural radiation levels are three to four times higher than the average. In 1990, a systematic study was initiated by RCC with the support of DAE, Govt. of India, to study the health effects, especially cancer, in relation to natural radiation present in the sea coast of Karunagappally. The study was supported by Health Research Foundation (HRF), Japan from 2000 onwards and cancer control activities & cancer patients support services were supported by charitable organizations and Local Area Development (LAD) funds of 12 panchayats of Karunagappally taluk.

During the reporting period critical evaluation of exposure effects of radiation was attempted in selected cohorts (6 panchayats) using specialized computer package Epicure and the risk analysis was started by measuring individual dose in a sample population. The registry activities continued covering the whole 12 panchayats of Karunagappally taluk and 380 cancer cases were recorded.

Clinical activities

Majority of population living in Karunagappally taluk is very poor and they were provided facilities for cancer diagnosis, follow-ups and pain & palliative care services with community support. These services were strengthened by 'Telemedicine' facilities.

Table-39: Clinical activities and patient services: 2004 - 2005

	Nos.	No. of persons attended
Follow-up clinics	05	387
Cancer awareness classes	07	400
Field clinics & Cervical screening camps.	06	950
Cytology examinations in peripheral hospitals & NBRR (FNAC, Oral Scrape, Cervical smear and Sputum)	60	1213
Cancer cases detected	21	
Pain clinics		1614
Home care services		113

Ongoing Research Projects

1. Dosimetric, Cyto-genetic and Epidemiological studies in High Background Radiation Area. (Funded by: Health Research Foundation, Japan)
2. Population Based Cancer Registry, Karunagappally. (Funded by: NCRP, Indian Council of Medical Research)
3. Cancer control and patient services. (Funded by: Local Area Development, Government of Kerala)
4. Development of an atlas of cancer in India. (Funded by: NCRP, Indian Council of Medical Research)
5. Old age welfare project. (Funded by: Neendakara Grama Panchayat)
6. Nutritional supplement programme. (Funded by: Rotary Club of Kollam West)

Conferences / Workshops attended, Papers presented

Dr. P. Jayalekshmi and Sri. Binu V.S.

6th International conference on high levels of natural radiation and Radon areas: Radiation dose and health effects. Osaka, Japan, 6- 10 September 2004.

Dr. P. Jayalekshmi and Sri. Sugathan R.

Annual review meeting of National Cancer Registry Programme, ICMR, Gangtok, Sikkim, 3 - 4 December 2004. Paper: "Features and working of Population Based Cancer Registry, Karunagappally"

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Hypertrophic pulmonary osteoarthropathy detected by Tc99m Mdp bone scan: a case report and review of literature (Abstract). In: Souvenir : 10th annual conference of Society of Nuclear Medicine India, Southern chapter, 2004 p.28
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**MAJOR PUBLIC FUNCTION AND CONFERENCES/
CME ORGANISED DURING 2004-05**

- 31.05.04 Observance of World No Tobacco Day and Tobacco awareness through Magic: The programme conducted by Shri.Gopinath Muthukad.
- 25.09.04 Inauguration of 'Sangeetha Santhwanam' a series of music concert sponsored by Sri. Sathyasai Orphanage Trust. Shri. Kaithapram Damodaran Nampoothiri led the first programme in this series.
- 16.10.04 Workshop on District Cancer Control Programme (DCCP), organized jointly by RCC and WHO.
- 25.10.04 'Sangeetha Santhwanam' the 2nd in the series of Music Concert by Shri. Balachandra Menon.
- 20.11.04 Music Concert by Dr. Suvama Nalappatt.
- 22.12.04 Inauguration of Operating Microscope & Ultrasound Scanner by Shri. K.K. Ramachandran Master, Hon'ble Minister for Health, Govt. of Kerala.
- 28.12.04 Inauguration of the 'Prathyasa', a patient welfare organization.
- 31.12.05 2nd International CME on Post-Laryngectomy voice rehabilitation.
- 08.01.05 CME on 'Cytology of Effusions'
- 23.01.05 Continuing Medical Education on 'Reconstruction Options in Oncology'. Dr. Soo Khee Chee, Director of the National Cancer Centre was the chief guest.
- 25.01.05 Music concert by Shri. Ramesh Narayan in connection with Sangeetha Santhwanam.
- 06.03.05 Continuing Medical Education on Palliative Care.
- 12.03.05 Symposium on State-of-the-Art Radiotherapy techniques: The Ayyagiri initiative.

NON-ACADEMIC STAFF STRENGTH

Administrative staff

Position	No.	Position	No.
Registrar	1	Cashier Cum Receptionist	1
Controller of Finance	1	Telephone Operator cum - Receptionist Gr.I	1
Administrative Officer	1	Clerk Gr. I	9
Administrative Officer - (Clinical Service)	1	Coding Clerk	1
Accounts Officer	1	Typist Gr. I	1
Public Relations Officer	1	Dark Room Asst.	1
Asst.Administrative Officer	1	Driver Gr.I	3
Asst.Accounts Officer	1	Driver Sr. Gr.	1
Asst.Purchase Officer	1	Senior Helper	19
Asst.Internal Audit Officer	1	Senior Animal Housekeeper	2
Sergeant Gr.I	1	Despatcher	2
Junior Personal Assistant	5	Helper	2
Office Asst. Sr. Gr.	4	Security Guard Gr.I	1
Office Assistant	1	Security Guard	18
Cashier.Gr.I	2	Gardner	1

TECHNICAL AND SCIENTIFIC STAFF

Position	No.	Position	No.
CNO & Assoc.Prof. of Nursing	1	Nursing Supdt. Gr.II	1
Scientific Officer Gr.I	1	Nursing Supervisor	2
Medical Records Officer	1	Radiographer.Sr.Gr	19
Cytotechnologist Sr.Gr.	3	Senior Radiographer	1
Technical Officer	5	Head Nurse. Gr.I	3
Jr.Technical Officer	1	Head Nurse	11

Position	No.	Position	No.
Head Nurse & Clinical Instructor	1	Staff Nurse	90
Cytotechnician, Sr. Gr	2	Protocol Nurse	1
Cytotechnologist	4	Radiographer	2
Senior Lab Technician	1	Lab Technician, Sr. Gr	8
RIA Technician, Gr. I	3	Pharmacist, Gr. I	1
Resident Medical Officer	4	Social Investigator, Gr. I	2
Jr. System Analyst	1	Radiographer Sel. Gr	3
Library Assistant	2	Mould Room Technician, Sr. Gr	1
Lab Technician	1	Anaesthesia Technician, Gr. I	1
Dietitian, Gr. I	1	Theatre Technician -	
Staff Nurse, Gr. I	15	Anaesthesia	1
		Data Entry Operator, Gr. I	3

ENGINEERING STAFF

Position	No.	Position	No.
Chief Maintenance Engineer	1	Electrician Gr. I	1
Maintenance Engineer	1	Electronic Technician Gr. I	1
Supervisor (Electrical) Gr. I	3	Supervisor (Electrical)	1

Best Wishes

RCC BID FAREWELL TO THE FOLLOWING STAFF DURING 2004-2005

- | | |
|-------------------------|-------------------|
| 1. Smt. Seetha .P | Technical Officer |
| 2. Sri. Rajayyan .S | Sr. Helper |
| 3. Dr. Vasudevan Mappat | Anesthesiologist |
| 4. Sister Modestry S.D. | Head Nurse Gr. I |

RCC wishes them a happy and prosperous life ahead

ACCOUNTS
2004-2005

**REGIONAL CANCER CENTRE SOCIETY
BALANCE SHEET**

PREVIOUS YEAR		SCH	LIABILITIES	CURRENT YEAR	
Rs	Pc			Rs	Pc
422,768,979.99		I	CAPITAL FUND	534,102,207.99	
2,645,518.12		II	SPECIFIC FUNDS	5,752,191.82	
3,199,496.00			UNUTILISED GRANTS	24,397,017.00	
1,383,021.95			STAFF WELFARE FUND	1,373,021.95	
40,049,837.10			CCL FUND	41,511,837.10	
506,117.00		III	ADV. RECEIVED FOR RESEARCH PROJECTS	493,717.00	
49,989,911.07		IV	SECURED LOANS	49,802,037.84	
			<u>CURRENT LIABILITIES AND PROVISIONS</u>		
16,693,027.13		V	CURRENT LIABILITIES - OTHERS	13,273,251.82	
29,208,553.40		VI	CREDITORS FOR GOODS SUPPLIED	32,045,796.28	
218,470,812.16		VII	PROVISION FOR DEPRECIATION	253,484,998.16	
784923073.92		TOTAL		856,236,076.86	

Place: Thiruvananthapuram
Date: 23-08-05

SASIDHARAN PILLAI
CONTROLLER OF FINANCE

Dr. B. RAJAN
DIRECTOR

**TRIVANDRUM (Reg. No. 567/21)
AS ON 31ST MARCH 2005**

PREVIOUS YEAR		SCH	ASSETS	CURRENT YEAR	
Rs	Pc			Rs	Pc
95,866,458.00		VII	FIXED ASSETS	507,037,788.84	
16,019,887.00		VIII	INVESTMENTS	49,074,874.00	
			<u>CURRENT ASSETS AND LOANS AND ADVANCES</u>		
11,298,251.29		IX	CLOSING STOCK	14,432,315.32	
2,395,571.37		X	ADVANCES TO PROJECTS	1,588,781.37	
9,315,663.69		XI	ADVANCES - OTHERS	7,853,433.37	
4,613,522.00			INTEREST ACCRUED BUT NOT DUE	3,335,769.00	
11,390,741.00		XII	INVESTIGATION FEES RECEIVABLE	10,201,631.95	
321,208.02		XIII	BALANCE WITH BANKS	179,076.93	
			GRANT RECEIVABLE	20,000,000.00	
121,621.39		XIV	CASH IN HAND	117,493.20	
303,580,152.16		XV	INCOME & EXPENDITURE A/C	342,414,933.18	
784923073.92		TOTAL		958,236,076.96	

As per our report even date attached

FOR VISHNU RAJENDRAN & CO.
CHARTERED ACCOUNTANTS

M.P. JOSE FCA
(PARTNER)
M.No. 204255

**REGIONAL CANCER CENTRE SOCIETY
INCOME AND EXPENDITURE ACCOUNT**

**TRIVANDRUM (Reg. No. 567/81)
FOR THE YEAR ENDED 31st MARCH 2005**

PREVIOUS YEAR	SCH	EXPENDITURE	CURRENT YEAR	
			Rs	Ps
7,465,768.18	A.	Opening Stock	11,298,251.29	
58,850,545.20	A.	Purchases	78,610,908.99	
94,220,186.39	B.	Salaries and Allowances	96,895,248.18	
102,796.00		Uniform and Liveries	106,237.60	
447,747.00	C	Rent,Rates & Taxes	328,512.00	
935,736.00	D	Postage, Telephone & Telegrams	726,165.30	
597,974.50	E	Travelling Expenses	465,614.55	
189,526.10	F	Printing & Stationary	425,239.00	
308,270.00		Advertisement Charges	13,003.00	
15,613,330.05	G	Electricity and Water Charges	12,120,230.00	
112,800.00		Remuneration to Auditors	126,120.00	
3,713,332.97	H	Repairs & Maintenance	5,953,936.50	
1,371,055.00	i	Service Contract Charges	2,931,325.00	
5,515,786.48		Interest & bank Charges	2,967,556.34	
68,680.00		Training/seminar/workshop Expenses	138,240.00	
180,074.00	J	Computer Expenses	265,625.00	
23,267.00		Matress, Linen, & Other hospital expenses	1,402,385.65	
809,013.00		Books & Periodicals	5,551.60	
1,684,015.05		Advances/Debt written off	795,142.00	
238,204.50		Expenses to NTR	1,495,546.00	
19,676,100.00	K	Miscellaneous Expenses	453,474.60	
		Depreciation	35,006,386.00	
211,993,209.42	TOTAL		252,530,699.00	

PREVIOUS YEAR	SCH	INCOME	CURRENT YEAR	
			Rs	Ps
47,012,912.30		Grant-in-aid; Govt of Kerala	35,497,037.00	
711,178.00		Grant-in-aid; Govt of India	622,370.00	
100,110,577.00		Investigation Fees	106,741,734.91	
42,505,057.00		Medicine Receipts	56,998,100.50	
75,116.00		Interest Income	150,532.00	
86,740.00	L	Trainig Fees	79,801.00	
1,189,137.65	M	Miscellaneous Income	1,424,245.00	
11,298,251.29		Closing Stock	14,432,315.32	
9,004,240.18		Excess of Expenditue over Income	36,584,563.27	
211,993,209.42	TOTAL		252,530,699.00	

As per our report even date attached

Place: Thiruvananthapuram
Date: 23-08-05

FOR VISHNU RAJENDRAN & CO.
CHARTERED ACCOUNTANTS

SASIDHARAN PILLAI
CONTROLLER OF FINANCE

Dr.B.RAJAN
DIRECTOR

M.P. JOSE FCA
(PARTNER)
M.No. 204255

REGIONAL CANCER CENTRE SOCIETY
CANCER CARE
INCOME AND EXPENDITURE ACCOUNT

TRIVANDRUM (Reg. No. 567/81)
FOR LIFE SCHEME
FOR THE YEAR ENDED 31st MARCH 2005

EXPENDITURE	CURRENT YEAR		INCOME	CURRENT YEAR	
	Rs	Ps		Rs	Ps
Salaries & Allowances	1,08,000.00		Interest on FD & Investments	3,241,697.25	
Reimbursement to Patients	5,380,040.00				
Printing and Stationery	3,875.00		Excess of Expenditure over income	2,250,217.75	
TOTAL	5,491,915.00		TOTAL	5,491,915.00	

Place: Thiruvananthapuram
Date: 23-08-05

SASIDHARAN PILLAI
CONTROLLER OF FINANCE

Dr.B.RAJAN
DIRECTOR

As per our report even date attached

FOR VISHNU RAJENDRAN & CO.
CHARTERED ACCOUNTANTS

M.P. JOSE FCA
(PARTNER)
M.No. 204255

**SCHEDULE
REGIONAL CANCER CENTRE SOCIETY
SCHEDULE OF FIXED ASSETS**

**VII
TRIVANDRUM (Reg. No. 567/81)
AS ON 31-03-2005**

ITEM	GROSS BLOCK			DEPRECIATION			NET BLOCK		
	Cost on 1.4.04	Additions	Deduction	Cost on 31.3.2005	Upto 31.3.04	Additions	Total upto 31.3.2005	As on 31.3.2005	As on 31.3.04
BUILDINGS, OLD	880170.25			880170.25	519408.43	17035.00	536443.43	323665.82	340701.82
BUILDINGS	30529377.06			30529377.06	14801712.66	801383.00	15703096.66	15228281.40	16027664.40
BUILDINGS, RT	17094500.70			17094500.70	7293322.1	490358.00	7783680.10	8311120.60	9801170.60
BUILDINGS PHASE II	91020500.05	1161389.74		92181889.79	27922519.5	3212986.00	31135487.50	81046896.29	89297980.55
BOUNDARY WALL	127118.63			127118.63	71171.14	2797.00	73968.14	53150.49	58947.49
BUILDING - COBALT UNIT	975347.00			975347.00	139109.35	41813.00	180922.35	794424.65	835237.65
COBALT UNIT	18091455.30	32000.00		18123455.30	7066522.75	1668540.00	8725062.75	9398392.55	11024932.55
BUILDING-LINEARACCELERATOR	2296661.70		111918.00	2183743.70	114783	109167.00	2297910.70	1959773.70	2183876.70
WATER SUPPLY AND DRAINAGE	2114588.43			2114588.43	1717177.12	59511.00	1776788.12	337798.31	397409.31
FURNITURE AND FITTINGS	9850262.43	224200.00		10074462.43	5505845.22	446862.00	6052707.22	4021755.21	4244417.21
OFFICE EQUIPMENTS	2579063.43			2579063.43	1679530.51	134329.00	1814459.51	764803.92	869532.92
HOSPITAL & LAB EQUIPMENTS	122813263.97	46316938.00		169130201.97	82421471.85	13006310.00	95427781.85	73702420.12	40381792.12
ELECTRICAL INSTALLATION	37180392.90			37180392.90	28496578.27	1302722.00	29799300.27	7382092.63	8694614.63
FIRE DETECTION	3841120.00			3841120.00	2318491.05	139144.00	3052635.05	788434.94	927828.94
AIR CONDITIONING	16665404.35	28151.00		16693555.35	13681478.64	453311.00	14131789.64	2551785.61	2973925.61
COMPUTER HARDWARE AND SOFTWARE	3238218.00	17600.00		3255818.00	3081586.98	59292.00	3139878.98	67139.04	127631.04
GAS AND CYLINDER	6613137.05			6613137.05	4967454.35	246853.00	5214307.35	1398829.70	1645682.70
VEHICLES	762581.80			762581.80	450227.37	62470.00	512697.37	249804.23	312364.23
LIBRARY BOOKS AND JOURNALS	16683344.15	1913963.50		18597307.65	7805384.46	1618788.00	9424172.46	9173135.19	8877956.69
LIFT AND ELEVATOR	5913240.00			5913240.00	4677075.83	185424.00	4862499.83	1050740.17	1236164.17
ASSETS (DONATIONS)	337612.00			337612.00	283987.05	8047.00	292014.05	45597.95	53644.95
TELEPHONE EQUIPMENTS	2906108.00	34866.00		2940974.00	2216166.64	106421.00	2322587.64	614387.38	687942.38
HIGH ENERGY LINEAR ACCELERATOR	2200.00	52985563.00		52987763.00		7948164.00	7948164.00	45039598.00	2200.00
LOW ENERGY LINEAR ACCELERATOR	0.00	2834989.40		2834989.40		440245.00	440245.00	2494724.40	0.00
ASSETS-TELEMEDICINES PROJECT	0.00	4909159.00		4909159.00		1963664.00	1963664.00	2945495.00	0.00
HOSPITAL EQUIPMENTS (PROJECT)	3013862.00	724435.00		3738297.00	451628.00	492548.00	944176.00	2791111.00	2595224.00
TOTAL	395866456.04	111283228.84	111918.00	507037768.84	216,478,612.16	35066386.00	253484998.16	253552770.48	177387845.84

AUDITOR'S REPORT

1. We have audited the attached Balance Sheet of the **REGIONAL CANCER CENTRE SOCIETY**, Regn. No. 567/81, Thiruvananthapuram as at 31st March 2005 and the Income and Expenditure Account for the year ended on that date, annexed thereto. These Financial Statements are the responsibility of the Management. Our responsibility is to express an opinion on these Financial Statements based on our audit. We conducted our audit in accordance with the auditing standards generally accepted in India. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Financial Statements are free of material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by the management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.
2. We have obtained all information and explanations, which to the best of our knowledge and belief were necessary for the purpose of our audit.
3. In our opinion, proper books of accounts have been kept by the Society so far as it appears from our examination of those books of accounts.
4. The Balance Sheet, Income and Expenditure account and the schedules thereon are in agreement with the books of maintained by the Society.

In our opinion and to the best of our information and according to the explanations given to us and subject to schedule XVI notes forming part of the accounts and the fact that the balances of items classified under schedule II Specified Funds, schedule VI Creditors for goods supplied and schedule X advance for projects are subject to reconciliation, the impact of which is currently unascertainable.

We report that:

1. The Balance Sheet read together with the schedules and notes thereon gives a true and fair view of the state of affairs of the society as at 31.03.2005.
2. The Income and Expenditure Account read together with the schedules and notes thereon gives a true and fair view of the excess of expenditure over the income of the Society for the year ended 31.03.2005.

For Vishnu Rajendran & Co
Chartered Accountants

Thiruvananthapuram,
23.08.2005

M.P. JOSE FCA
Membership No.204255
(Partner)

**SCHEDULE - XVI
NOTES FORMING PART OF THE ACCOUNTS**

1. Out of the grant received from Government of Kerala during the financial year 2004-2005 amounting to Rs 602.00 Lakhs, an amount of Rs. 247.03 Lakhs have been transferred to Capital Fund representing Fixed Assets acquired or constructed during the year and balance of Rs.354.97 Lakhs have been treated as Revenue and taken to Income and Expenditure Account.
2. Claim made by Executive Engineer, Special Building, PWD amounting to Rs.3,45,615/- and claim made by The Corporation of Trivandrum, vide their In.No.D.O No.R9-2362/94(69) Dt 13/07/2001 for a total amount of Rs.90,26,490/- towards the Property tax liability for the period up to 30/09/2002 are treated as contingent liability during the previous year still retained as contingent liability.
3. A sum of Rs.7,95,142/- has been written off during the year being 1/5 of advances to projects Schedule X, which represents unmatched items during the previous years and to this extent, the excess of expenditure over income of the Society for the current year is over stated.
4. Specified funds amounting to Rs.57,52,191.82/-, classified under Schedule II to the Balance Sheet, represents amounts received for specified purposes from different sources. However, expenses incurred, against these funds during earlier years were not matched against these funds properly. So the balances are not reconciled.
6. Bank interest accrued but not received during the year under Cancer Care for Life Scheme deposits includes interest to the extent of Rs. 18,46,400/- attributable to the previous years and so the current year income is over stated to that extent.
7. Previous year figures have been re-grouped and re-cast wherever necessary to suit the current year's layout.

During the year ended March 31, 2005, RCC has extended help in the nature of subsidy to poor and needy patients to the extent of Rs. 735 lakhs. As a result the income is under stated to that extent.

Sasidharan Pillai
Controller of Finance
Thiruvananthapuram
23.08.05

Dr.B.Rajan
Director

For Vishnu Rajendran & Co.
Chartered Accountants

M.P.Jose FCA
Membership No.204255
(Partner)

**SCHEDULE - XVII
SIGNIFICANT ACCOUNTING POLICIES**

1. The financial statements are prepared on historical cost convention and on accrual method.
2. Fixed Assets are accounted at original cost. Depreciation is provided at the rates as fixed by the management and on written down value method. Full depreciation for the year is provided for in respect of additions irrespective of the time they are put to use during the previous year.
3. Chemicals, Medicines and Consumable and other items of inventory stores are valued at cost on FIFO basis.
4. Grants from Governments are accounted for on the basis of the sanctions received.
5. Contributions in foreign currency are accounted on realization basis.
6. Provident Fund is regularly contributed to the Employees Provident Fund and is deposited with Regional Employees Provident Fund Commissioner.
7. Retirement Benefits are accounted for on cash basis.

Sasidharan Pillai
Controller of Finance
Thiruvananthapuram
23.08.05

Dr.B.Rajan
Director

For Vishnu Rajendran & Co.
Chartered Accountants

M.P.Jose FCA
Membership No.204255
(Partner)

VISHNU RAJENDRAN & CO
Chartered Accountants

Kalthayil Buildings, T. B. Road
P.B. No.227, Kottayam-686001
E-mail: vrandco@sanchamnet.in
Ph: 0481-2581999, 2301999
www.vrandco.com

UTILISATION CERTIFICATE

Certified that the grant of Rs. 6,02,00,000/- (Rupees Six Crores Two Lakhs only) received during the financial year 2004 - 2005 by the REGIONAL CANCER CENTRE SOCIETY, THIRUVANATHAPURAM, (Reg. No. 567/81) from the Health and Family Welfare Department, Government of Kerala as per the Government Orders received have been utilized by the Society during the financial year 2004 - 2005 for the purpose of overall development and maintenance of the Institutions and other working expenses, implementation of projects, construction of building, functioning of Early Cancer Detection Centre and National Tumour Registry.

For Vishnu Rajendran & Co.
Chartered Accountants

Thiruvananthapuram
23.08.05

M.P.Jose FCA
Membership No.204255
(Partner)

VISHNU RAJENDRAN & CO
Chartered Accountants

Kalthayil Buildings, T. B. Road
P.B. No.227, Kottayam-686001
E-mail: vrandco@sanchamnet.in
Ph: 0481-2581999, 2301999
www.vrandco.com

UTILISATION CERTIFICATE

Certified that an amount of Rs. 2,82,51,164.00 (Rupees Two Crores Eighty Two Lakhs Fifty One Thousand One Hundred and sixty four only) has been utilized out of the following grants:-

	Amount (Rs.)
Grant received during the financial year 2004-2005 from Health & Family Welfare Dept., Govt.of India, New Delhi.	5,00,00,000.00
Add:- Unutilised grant of the previous year	26,48,181.00
TOTAL	5,26,48,181.00
Amount set apart for C.T. Scanner	2,43,97,017.00
Grant Utilised During 2004-2005	2,82,51,164.00
TOTAL	5,26,48,181.00

by the REGIONAL CANCER CENTRE SOCIETY, THIRUVANANTHAPURAM, DURING THE YEAR 2004 - 2005 FOR acquiring equipments and spare parts of equipments for the development of the Society.

For Vishnu Rajendran & Co.
Chartered Accountants

Thiruvananthapuram
23.08.05

M.P.Jose FCA
Membership No.204255
(Partner)

**REGIONAL CANCER CENTRE SOCIETY
FOREIGN CONTRIBUTION FOR
BALANCE SHEET**

LIABILITIES	Amount Rs. Ps.	Amount Rs. Ps.
<u>CAPITAL FUND</u>		
As on 1-4-2004	7493917.82	
Add : Utilised During the Year for Fixed assets	790161.00	
	8284078.82	
Less:-Assets trd.to RCC	342212.00	
	7941866.82	
Add: Other Receipts		
Bank Interest	175017.00	
Accumulated interest on F.D	333100.00	8449983.82
Project Balances as Per Schedule		6681268.27
Research Funds as per Schedule		3102553.15
<u>CURRENT LIABILITIES</u>		
Salary Recovery		4,824.00
RCC Payable		268,374.00
Overheads Payable		104756.00
Advances pending Settlement		3000.00
TOTAL		19614759.24

**TRIVANDRUM (Reg. No. 567/81)
RESEARCH PROJECTS
AS ON 31st MARCH 2005**

ASSETS	Amount Rs. Ps.	Amount Rs. Ps.
<u>FIXED ASSETS</u>		
Computer		1326106.00
Printer & UPS		231415.00
Fax Machine		24995.00
Refrigerator		11953.00
Deep Freezer		123674.00
Vehicle		1407937.00
Furniture		408628.29
Equipments		2235005.00
Air Conditioner		70840.00
Photocopier		322735.00
Building Addl. Facilities		785829.55
<u>CURRENT ASSETS & LOANS AND ADVANCES</u>		
Interest Accrued but not Due		552145.00
Term Deposit with S.B.T		4600690.00
Term Deposit with Fed.Bank		4162788.00
Cash In Hand		63266.00
Cash at Bank		2283752.40
Advances Recoverable		3000.00
TOTAL		18614759.24

Vide my report of even date attached.

Trivandrum
30 September 2005

FINANCE MANGER
(PROJECTS)

DIRECTOR

T.AJITH KUMAR B.COM, ACA
CHARTERED ACCOUNTANT
M.No. 209348

REGIONAL CANCER CENTRE SOCIETY TRIVANDRUM (Reg. No. 567/81)
 FOREIGN CONTRIBUTION FOR RESEARCH PROJECTS
 RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31-03-2005

RECEIPTS	Amount Rs. Ps.	PAYMENTS	Amount Rs. Ps.
To Opening balance	8390004.62	By Salary	3885704.70
Foreign Contribution - received during the year	7623502.00	Consumables	168757.00
Interest Received	186472.00	Stationary & Printing	135792.00
Project Advances Recovered	41400.00	Rent & Maintenance	121540.00
		Travelling expenses	702112.00
		Miscellaneous	234901.00
		Repairs	76025.00
		Postage & Communications	136537.50
		Slides & Photographs	15543.00
		Assistance to Patients	2737.00
		Medicines	70889.00
		Registration Fees	39970.00
		Books purchased	4254.00
		Electricity charges	26033.00
		Conference & Seminars	4193.00
		Overheads charged	104756.00
		Furniture	33825.00
		Computer	94200.00
		Vehicle	662188.00
		Project Advances	3000.00
		Spare Parts	32162.00
		Insurance	50490.00
		Excess of Receipts over Payments.	9783821.42
TOTAL	16191378.62	TOTAL	16191378.62

Trivandrum
30 September 2005

FINANCE MANGER, DIRECTOR
(PROJECTS)

Vide my report of even date attached.

T. AJITH KUMAR B.COM, ACA
 CHARTERED ACCOUNTANT
 M.No. 209348

AJITH KUMAR.T. B.Com, ACA
 CHARTERED ACCOUNTANT

T.C.5/1012, Konathukulangara
 Vattiyooruvu, P.O., Trivandrum - 695013
 Telephone : 0471-2485939
 Mobile : 98473 16622
 E-mail: ajithkumarca@yahoo.com

AUDITOR'S REPORT

I have audited the accounts of the Foreign Contribution for Research Projects of the Regional Cancer Centre Society, registered as per T.C Literary Scientific and Charitable Societies Regulation Act XII of 1955 (Reg.No.567/81) with registered office at Medical College P.O, Thiruvananthapuram-695011, Kerala State for the year ending 31st March, 2005 and relevant books and vouchers and certify that according to the audited accounts.

1. The brought forward foreign contribution at the beginning of the financial year 2004-2005 was Rs.83,90,004.62
2. Foreign Contribution worth Rs.76,23,502.00 with interest of Rs.1,36,472.00 were received by the Association during the year ended 31st March, 2005.
3. The balance of unutilized foreign contribution with the association at the end of the financial year 2004-2005 was Rs.97,83,821.42.
4. Certified that the Association has maintained the accounts of foreign contribution and records relating thereto in the manner specified in section 13 of the foreign contribution (Regulation) Act, 1976 read with rule 8 (1) of the foreign contribution (Regulation) Rules, 1976.
5. An asset in the nature of Deep Freezer costing around to Rs.3,42,212/- has been excluded from the concerned head of account in the balance sheet as the same has been transferred to the accounts of RCC and therefore the balance in the Capital Fund account is less by Rs.3,42,212/- during the year ended on March 31, 2005.
6. The information furnished above and in the Balance Sheet and statement of receipts and payments are correct as checked by me.

Trivandrum
30 September 2005

T. AJITH KUMAR B.COM, ACA
 CHARTERED ACCOUNTANT
 M.No. 209348

**REGIONAL CANCER CENTRE SOCIETY
PROJECT CELL (Financial Assistance received
BALANCE SHEET**

**TRIVANDRUM (Reg. No. 567/81)
from National Agencies for Research Projects)
AS ON 31st MARCH 2005**

LIABILITIES	Amount Rs. Ps.	Amount Rs. Ps.
<u>CAPITAL FUND :-</u>		
Income and Expenditure A/c:		
As per Last B/S	2829714.17	
Add: Excess of Income over Expenditure for the year	615481.90	3445196.07
Donation for Specific Purpose	207500.00	
Less:-Utilised during the year	100000.00	107500.00
 Training Fund		1079553.50
<u>Current Liabilities</u>		
Security Deposits	19875.00	
Project Balances	9119149.11	
Recovery from salary	5120.00	
Payable to RCC	56472.00	9200616.11
<u>Other Liabilities</u>		
NBRR Project (sale of vehicle)		85600.00
TOTAL		13918465.68

ASSETS	Amount Rs. Ps.	Amount Rs. Ps.
<u>FIXED ASSETS:-</u>		
Gross Block	263748.44	
Less: Depreciation	142936.54	120811.90
 TERM DEPOSITS :		
SBT	6638093	
Syndicate Bank	1843362	8481455.00
Cash in Hand		33607.00
Cash at Bank		5282591.78
TOTAL		13918465.68

Trivandrum
30 September 2005

FINANCE MANGER
(PROJECTS)

DIRECTOR

T.AJITH KUMAR B.COM, ACA
CHARTERED ACCOUNTANT
M.No. 209348

PROJECT CELL
REGIONAL CANCER CENTRE SOCIETY
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2005

EXPENDITURE	Amount Rs. Ps.	INCOME	Amount Rs. Ps.
Salary Paid	166053.80	Income from Projects	497675.75
Travelling Expenses	7630.00		
Service Charges	350.00	Interests received	366612.00
Audit Fee	20000.00		
Printing & Stationery	9129.91		
Computer Stationery	9225.00		
Postage & Telephone Expenses	1293.00		
Other Miscellaneous Expenses	12735.50		
Depreciation	22388.64		
Excess of Income- Over Expenditure	615481.90		
TOTAL	864287.75	TOTAL	864287.75

Trivandrum
30 September 2005

FINANCE MANGER
(PROJECTS)

DIRECTOR

T.AJITH KUMAR B.COM, ACA
CHARTERED ACCOUNTANT
M.No. 209348

ACKNOWLEDGEMENTS

Ministry of Health & Family Welfare, Government of India
Department of Science and Technology, Government of India
Department of Health & Family Welfare, Government of Kerala
Indian Council of Medical Research, New Delhi
World Health Organisation
International Union Against Cancer (UICC)
National Cancer Institute
International Agency for Research on Cancer (IARC), France
Bhabha Atomic Research Centre, Bombay
Director General of Health Services, Government of India
Medical College, Thiruvananthapuram
Sree Avittam Thirunal Hospital for Women and Children,
Thiruvananthapuram
Dental College, Thiruvananthapuram
Sree Chitra Thirunal Institute of Medical Sciences & Technology,
Thiruvananthapuram
Kerala State Committee on Science, Technology and Environment,
Thiruvananthapuram
Director of Health Services, Government of Kerala
Atomic Energy Commission, Government of India
Census Operations, Kerala
Department of Economics and Statistics, Kerala
State Planning Board, Government of Kerala
University of Kerala
Mahatma Gandhi University, Kerala
Drugs Controller, Thiruvananthapuram
College of Pharmaceutical Sciences, Thiruvananthapuram
United Nations Fund for Population Activities
C-DAC, Thiruvananthapuram
Centre for Earth Science Studies, Thiruvananthapuram
Indian Space Research Organisation
University Grants Commission
The Bill & Melinda Gates Foundation
Asraya, Thiruvananthapuram
CarePlus, Thiruvananthapuram
Regional Cancer Association
Prathyasa, Thiruvananthapuram
K.G. Sukumar Associates
PRS Builders, Thiruvananthapuram