



**REGIONAL
CANCER
CENTRE**

THIRUVANANTHAPURAM

2002-2003



REGIONAL CANCER CENTRE

THIRUVANANTHAPURAM - 695 011, KERALA, INDIA

REPORT OF ACTIVITIES 2002 - 2003

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CONTENTS

	Page No
I. Organisation and Services	5
II. Overview	9
III. Departmental Activities	11
1. Radiation Oncology	11
2. Surgical Oncology	15
3. Anaesthesiology	22
4. Paediatric Oncology	24
5. Medical Oncology	26
6. Dental Care	27
7. Clinical Services & Medical Records	29
8. Nursing Services	31
9. Pain & Palliative Care	33
10. Blood Bank	35
11. Cytopathology	36
12. Imageology	43
13. Nuclear Medicine	45
14. Radiation Physics	47
15. Epidemiology & Clinical Research	50
16. Basic Research	59
17. Laboratory Medicine & Tumour Biology	65
18. Clinical Laboratory services	68
19. Library & Information Service	70
20. Information Systems	71
21. Community Oncology	72
22. E.C.D.C. Palakkad	76
IV. Publications	78
V. Non - academic staff Strength	86
VI. Accounts	89

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
Imagology
Nuclear Medicine
Clinical Laboratory
AFFILIATED UNITS
Nursing
Palliative Care
Pain Clinic
Blood Bank
Pharmacy
Medical Records

RESEARCH

Basic Research
Laboratory Medicine
& Tumor Biology

Epidemiology &
Clinical research

Community Oncology
Outreach
Programmes
ECDC, Ernakulam
ECDC, Palakkad

Information Systems
Library & Information
service

**GOVERNING BODY MEMBERS OF
REGIONAL CANCER CENTRE**

- | | | |
|-----|---|--------------------|
| 1. | Sri. A.K. Antony
Hon'ble Chief Minister of Kerala | Chairman |
| 2. | Adv. Sri. P. Sankaran
Hon'ble Minister for Health & family
Welfare, Govt. of Kerala | Vice-Chairman |
| 3. | Sri. K. Ramamoorthy, IAS
Secretary to Govt. of Kerala, Health &
Family Welfare | Alt. Vice-Chairman |
| 4. | Smt. Sudha Pillai, IAS
Principal Secretary, Finance Department,
Govt. of Kerala | Member |
| 5. | Sri. S. M. Vijayanand, IAS
Secretary to Govt. of Kerala,
Planning Department | -do- |
| 6. | Dr. S.P. Agarwal
Director General of Health Services,
Govt. of India | -do- |
| 7. | Sri. L.P. Naik
Secretary, Health & Family Welfare,
Govt. of India | -do- |
| 8. | Dr. M.S. Valiathan
Chairman, STEC, Trivandrum | -do- |
| 9. | Dr. K. Mohandas
Director, SCTIMST, Trivandrum. | -do- |
| 10. | Dr. S.C. Gupta
Former Director, VSSC, Trivandrum | -do- |
| 11. | Dr.K.A. Kumar
Director of Medical Education, Trivandrum | -do- |
| 12. | Dr. P.C. Kesavankutty Nair
Principal, Medical College, Trivandrum. | -do- |
| 13. | Dr.M. Krishnan Nair
Director, RCC, Trivandrum. | Convener |

**EXECUTIVE COMMITTEE MEMBERS OF THE
REGIONAL CANCER CENTRE**

- | | | |
|----|---|----------|
| 1. | Sri. K. Ramamoorthy, IAS
Secretary to Govt. of Kerala, Health &
Family Welfare. | Chairman |
| 2. | Smt. Sudha Pillai, IAS
Principal Secretary, Finance Department,
Govt. of Kerala | Member |
| 3. | Sri. S. M. Vijayanand, IAS
Secretary to Govt. of Kerala. Planning
Department | -do- |
| 4. | Dr.K.A. Kumar
Director of Medical Education, Trivandrum | -do- |
| 5. | Dr. P.C. Kosavankutty Nair
Principal, Medical College, Trivandrum. | -do- |
| 6. | Dr.M. Krishnan Nair
Director, RCC, Trivandrum. | Convener |

OVERVIEW

Regional Cancer Centre, Trivandrum which is a pioneer institute for cancer diagnosis, treatment and cancer control activities in the country, continues its triumphant march in its fight against cancer. There has been an overall improvement observed in clinical services of the centre subsequent to reorganisation as site wise multi-disciplinary clinics.

The cancer control activities initiated by RCC at the district and village level continues without any let up and receives support from International organisations such as UNFPA and IARC. RCC conducted a number of WHO sponsored training programmes during this year. The workshop on life-style related diseases among school teachers in Kerala was inaugurated by Shri. Nalakathu Sooppy, Hon. Minister for Education. Shri. P. Sankaran, Hon. Minister for Health, Kerala inaugurated a training programme for doctors on cancer control. The other training programmes were centred on Cancer registry, pain relief and palliative care and quality assurance in Fine Needle Aspiration and Cervical Cytology.

RCC hosted the 22nd Annual Convention of the Indian Association of Cancer Research and International Symposium on cancer causes and control. The programme attracted a large number of scientists from within and outside the country and was attended by Dr. Paul Kleihues, Director, International Agency for Research Against Cancer, Lyon, France.

RCC celebrated cancer awareness day as cancer survivors day on 7th November, 2002 by bringing together a large number of cancer survivors from different parts of the state. The celebration was inaugurated by Shri. K. Karunakaran M.P, former Chief Minister of Kerala.

World Health Day was celebrated on 7th April by organising a mass walk.

A number of dignitaries from India and abroad visited the hospital. The notable persons in this group were: Dr. Beatrice Wabudeya, Hon. Minister of State for Primary Health Care, Govt. of Uganda; Dr. Kebede Tadesse, Minister for Health, Federal Democratic Republic of Ethiopia; Lt. Gen. A.K. Lahiri, DGHS and Colonel Commandant of AMC; Dr. Omi, Director, WHO Western Pacific Region; Dr. A. Syrota, Dr. B. Butrillaux and Prof. J. Leguay from Atomic Energy Commission, France.

For the first time, an RCC staff club day was celebrated which was inaugurated by Shri. G. Karthikeyan, Minister for Cultural Affairs, Kerala.

I am very happy to present the activity report of the various divisions of the centre.


DIRECTOR



World Health Day Celebrations. Inauguration of mass walk by Shri. K.Karunakaran MP in the presence of Shri. P.Shankaran, Hon. Minister for Health, Shri. V.S.Shivakumar MP, Shri. K.Mohan Kumar M.L.A., Prof.J.Chandra, Mayor



His highness Marthanda Varma Uthradam Thirunal inaugurating the 22nd Annual Convention of the Indian Association of Cancer Research and International symposium on cancer causes and control. Looking on are Dr. M. Krishnan Nair (Chairman, Organizing Committee), Dr. Paul Kleihues (Director, International Agency for Research Against Cancer), Dr. Ekbal (Vice-Chancellor, University of Kerala), Dr. R. V. Thampam (Director, Rajiv Gandhi Centre for Biotechnology) and Dr. M. Rasdhakrishna Pillai (Organizing Secretary)



Cancer Awareness Day Celebration being Inaugurated by Shri. K.Karunakaran MP.



Union of long term survivors on Cancer Awareness Day

DEPARTMENTAL ACTIVITIES
RADIATION ONCOLOGY

Dr. M. Krishnan Nair	Professor
Dr. B. Rajan	Professor
Dr. P. G. Jayaprakash	Additional Professor
Dr. Sureshchandra Dutt	Additional Professor
Dr. S. Parameswaran	Additional Professor
Dr. Jayaprakash Madhavan	Additional Professor
Dr. V. N. Bhattathiri	Associate Professor
Dr. K. Ramadas	Associate Professor
Dr. K. Ratheesan	Associate Professor
Dr. Thomas Koiparambil	Associate Professor
Dr. Francis V. James	Associate Professor
Dr. Beela Sarah Mathew	Assistant Professor
Dr. Aswin Kumar	Assistant Professor
Dr. C. D. Sivanandan	Assistant Professor

Teaching/ Training Programme

As in the previous year, the division continues to be fully involved in the post-graduate teaching programme for MD Radiotherapy and DMRT, University of Kerala. Annually 2 students are recruited for MD Radiotherapy and 3 for DMRT.

Ongoing Research Projects

- 1. Natural background radiation and cancer, Karunagappally**
(Funding agency: Health Research Foundation, Japan)
Principal investigator Dr. M. Krishnan Nair
- 2. National Environmental health profile and comparative health risk assessment.**
(Funding agency: World Health Organization (WHO) & Ministry of Environment and Forests (MoEF).
Principal Investigator Dr. M. Krishnan Nair
- 3. Adjuvant tamoxifen in breast cancer – Longer against shorter**
(Funding agency: ATLAS- Clinical trial Services Unit, Oxford, U.K.)
Principal Investigator Dr. B. Rajan

4. **Estrogen receptor gene polymorphism in breast cancer and response to tamoxifen treatment**
(Funding agency: Science & Technology Department, Govt. of Kerala.)
Principal Investigator Dr. B. Rajan
5. **Case-control study of breast cancer in South Asia comparing rural and urban women.**
(Funding agency: International Agency for Research on Cancer, Lyon.)
Co-Principal Investigator Dr. B. Rajan
6. **Trivandrum oral cancer screening study (TOCS).**
(Funding agency: International Agency for Research on Cancer, Lyon, France)
Principal investigator Dr. K. Ramadas
7. **Genotyping of the CYP1A and GSTM1 genes in tobacco associated oral cancers.**
(Funding agency: Indian Council of Medical Research, New Delhi)
Principal investigator Dr. K. Ramadas
8. **Multicentre study of cremophor-free, protein stabilized, nanoparticle formulation of paclitaxel (ABJ-007) in patients with stage IV metastatic breast cancer.**
(Funding agency: Quintiles India Ltd.)
Principal investigator Dr. M. Krishnan Nair
Co-Investigator Dr. K. Ratheesan
9. **Tobacco related mortality study**
(Funding agency: International Agency for Research on Cancer, Lyon, France)
Principal investigator Dr. K. Ramadas

Conferences / Workshops Attended

Dr.M. Krishnan Nair

1. ASCO meeting in Orlando from 18-22 May 2002.
2. INCTR meeting in Brussels from 25-28 May 2002.
3. Cancer Prevention and control under the National Cancer Control Programme at BMCHRC, Jaipur on 23-25 March 2002.

4. Standardization of digital information of facilitate implementation of telemedicine systems using IT enabled services at CGO complex, New Delhi on 23rd July 2002.
5. All India workshop on WHO project on Development of an Atlas of cancer in India at Indian Institute of Science, Bangalore from 31 July to 2 August 2002.
6. 18th Annual review meeting of the National Cancer Registry Programme held at Tata Memorial Hospital, Mumbai on 21 November 2002 and inaugural meeting of the AROI on 22 November at Bangalore.
7. The first seminar on the National Comprehensive Cancer Network (NCCN) for India at BMCHRC, Jaipur on 21-22 December 2002.
8. Evidence Based Management of common cancers in India at Tata Memorial Hospital, Mumbai from 28 February to 2 March 2003.

Dr.B. Rajan

1. ICON meeting on Breast cancer, Goa, 21-24 June 2002.
2. ICON, Pune, 9-12 August 2002.
3. Evidence based management of common cancers, Mumbai, 28th February to 2nd March 2003 IARC Meeting, Maciras, 3-4 March 2003.

Dr. Aswin Kumar

1. Workshop-information system and knowledge Management SCTIMST, Tvm, 7-8 December 2002.
2. Novartis Oncology Meeting, Mumbai, 28-29 March 2003.

Dr. Jayaprakash Madhavan

1. Investigators meet on study of gemetabine, New Delhi, 27-30 September 2002.
2. CME on colorectal cancer, Bangalore, 20-25 November 2002.
3. NCCN Meeting, Jaipur, 20-23 December 2002.
4. Oncology Update, Bombay, 31st January to 3rd February 2003.

Dr. Ratheesan . K

GCP Theory and Practice, Mumbai 12-16 February 2003.

Dr. S. Parameswaran, Dr. Thomas Koiparampil & Dr. Suresh Chandra Dutt

24th National conf. of Association of Radiation Oncologists of India, Bangalore, 20-25 November 2003.

Dr. P.G. Jayaprakash

1. 17th National Conf. of Indian Society of Oncologists, Bombay, 13-19 November 2002.

2. Oncology update 2003, Mumbai, 31st January to 3rd February 2003

Dr. Beela Sarah Mathew

Evidence based Management of common cancers, Mumbai, 27th February to 3rd March 2003.

SURGICAL ONCOLOGY

Dr. Paul Sebastian	-	Additional Professor
Dr. K. Chitrathara	-	Associate Professor
Dr. Jom Prabhakar	-	Associate Professor
Dr. Cherian Koshy	-	Associate Professor
Dr. Namrata Dhakkad	-	Associate Professor
Dr. Manoj Pandey	-	Assistant Professor
Dr. Shaji Thomas	-	Assistant Professor
Dr. Bipin T. Varghese	-	Assistant Professor
Dr. Paul Augustine	-	Assistant Professor
Dr. Firoz Rajan	-	Assistant Professor
Dr. Balagopal PG	-	Lecturer
Dr. K. Chandramohan	-	Lecturer
Dr. Elizabeth M. Iype	-	Lecturer

Clinical activities

During the reporting year 2818 surgeries (major: 1933 and minor: 885) and 1365 endoscopic procedures were carried out. Compared to the previous year, the work output increased by 30 percent.

Table-1: Major operations - distribution by region

Region	No (1933)	Percentage
Head and Neck	855	44.2
Breast	518	26.8
Thorax and Abdomen	166	8.6
Genito Urinary	264	13.7
Bone and extremity soft tissue sarcoma	88	4.6
Skin and other miscellaneous tumours	42	2.1

Table-2: Head and neck cancer- site distribution

Site	No (855)	Percentage
Oral cavity and oropharynx	533	62.3
Larynx and hypopharynx	32	3.7
Metastatic Neck Nodes	119	13.9
Thyroid	104	12.2
Salivary gland	27	3.2
Others	40	4.7

Table-3: Breast Cancer – Operative Procedures

	No.
Modified radical Mastectomy	406
BCT	56
Breast Reconstruction	16

Table-4: Endoscopic procedures

	No (1365)
Nasopharyngoscopy	160
Bronchoscopy	75
Upper GI endoscopy	292
Colonoscopy	132
Esophageal stricture dilatation	46
Esophageal stenting	4
Rigid nasal endoscopy and DL scopy	340
Cystoscopy	316

Academic activities

- 1 Organized a live surgery workshop in connection with the annual conference of the Association of Surgeons of India, May 2002.
- 2 Organized a CME on Salivary Neoplasms in July 2002.
- 3 Provided training in surgical oncology for postgraduate students in Surgery, ENT and Maxillofacial Surgery from various medical and dental colleges in Kerala, Tamil Nadu and Karnataka.

Research Projects

1. Trivandrum Oral Cancer Screening Study (TOCS), for oral malignant and premalignant lesions (Funded by IARC)
Co-investigators- Dr. Paul Sobastian, Dr. Manoj Pandey
2. Role of Vitamin A prophylaxis in preventing malignant transformation of oral premalignant lesions (Funded by IARC)
Co-investigator- Dr. Manoj Pandey
3. Study into the role of vitamin A in preventing the second primary malignancy in treated oral cancer (Funded by IARC)
Co-investigator- Dr. Manoj Pandey
4. Open labeled single group study into the effect of M4N and G4N in advanced oral and cervical cancer (Funded by John's Hopkins University)
Co-investigator- Dr. Manoj Pandey
5. Genotyping of the CYP1A and GSTM1 genes in tobacco associated oral cancer (Funded by ICMR)
Co-investigator- Dr. Manoj Pandey
6. Metalloproteinases in oral cancer (Funded by ICMR)
Co-investigator- Dr. Manoj Pandey
7. Comparative evaluation of early detection of cervical cancer precursor by acetic acid and Schillers iodine in Kerala. (Funded by IARC)
Co-investigators: Dr. Namrata Dhakad, Dr. Paul Sebastian, Dr. Chitrathara
8. Natural history of genital HPV infection (Funded by IARC)
Co-investigators: Dr. Namrata Dhakad, Dr. Paul Sebastian, Dr. Chitrathara
9. Cervical Cancer Control Project (Funded by IARC)
Co-investigators: Dr. Namrata Dhakad, Dr. Paul Sebastian, Dr. Chitrathara
10. Trivandrum quality of life study (TQOLS) in patients with head and neck cancer undergoing curative treatment (Funded by UGC New Delhi).
Co-investigator- Dr. Manoj Pandey

11. Trivandrum Quality of Life Study (TQOLS) in patients with Breast cancer undergoing curative treatment (Funded by ICMR, New Delhi)
Co-investigator- Dr. Manoj Pandey

Award / Honors / Conferences / Workshops

Dr. Paul Sebastian

Invited lectures

1. Role of surgery in the management of the axilla in carcinoma breast at the Annual Conference of Association of Surgeons of India Kerala Chapter, Trivandrum May 2002
2. Terminal care of patients in developing countries at the INCTR Meeting 2002, Brussels, Belgium, May 2002
3. Management of cutaneous malignancies at the ASI Conference, Alleppey, August 2002
4. Surgical management of breast cancer at the WHO Workshop for Doctors on Cancer Control on Oral, Breast and Cervical Cancers, Trivandrum, October 2002
5. The role of RCC, Trivandrum in the development of palliative care in Kerala at the WHO Workshop on Palliative Care and Cancer Pain Relief, Trivandrum, December 2002
6. Chemoprevention in Head and Neck cancers at the Evidence Based Management of Common Cancers Conference, Mumbai, March 2003

Conferences and workshops attended

1. Faculty of the Live Surgery Workshop in RCC organized by ASI Kerala Chapter during the Annual Conference, May 2002
2. Workshop on Reconstructive Surgery of the Breast organized by European School of Oncology, Dusseldorf, Germany, May 2002
3. Indian Society of Oncology Biennial Conference, Mumbai, November 2002

Dr. Namrata Dhakad

1. Faculty for course on cervical cancer screening by visual inspection with acetic acid and with Lugol's Iodine and treatment of lesions with cryotherapy and Loop electro surgical excision procedure. At MNJ institute of oncology and RCC, Hyderabad. Organized by Regional cancer centre Trivandrum and IARC, 2-5 April 2002.
2. Guest lecture on treatment of preinvasive cervical cancer with cryotherapy and Loop electro surgical excision procedure at a CME organized by Obst. and Gyn. Society of Hyderabad on 4th April 2002.
3. Faculty for Live Colposcopy Workshop and CME on Preventive Oncology conducted at SAT, organised by Kerala Obs and Gynae Society, FOGSI Oncology and Trophoblastic Committee and Federation of Obstetrics Society of Kerala on 12 may 2002.
4. Panel discussion -- Gynaecological cancer in 77th All India Medical Conference of Indian Medical Association held at Trivandrum 20th July 2002.
5. Delivered a CME lecture on management of premalignant and malignant lesion of cervix at Regional Cancer Centre, Trivandrum for WHO Training Programme for Medical Officers on Awareness and Early Detection of Cancer, on 30th October 2002
6. Attended IV Annual Surgical Oncology Workshop (Gynaec Oncology) at Cancer Institute WIA, Chennai, 23-25 January 2003.

Dr. Manoj Pandey

Editor-in-Chief:

World Journal of Surgical Oncology (published by biomod central <http://www.wjso.com/start.asp>)

Editor:

Advances in Oncology, Published by Jaypee Brothers, New Delhi

Reviewer:

Cancer, Cancer Strategy; Neoplasia; European J Cancer Prevention; Indian Journal of Cancer; Journal of Postgraduate Medicine.

Books Edited:

Advances in Oncology, Volume 2, Jaypee Brothers Med. Publishers (P) Ltd., New Delhi; 2002.

Conferences Attended

1. Annual Conference of Indian Society of Wound Management and International CME, Woundcon 2002, Trivandrum April 13-14, 2002.
2. Annual conference of ASI Kerala Chapter, KASICON 2002, and operative workshop, Trivandrum, May 3-5, 2002.
3. Annual conference of Cochrane Collaboration, Norway, July 31-Aug 3, 2002.

Invited Speaker

1. Symposium on breast cancer. ASI South zone meeting, KASICON 2002, Kanya Kumari, February 22, 2002.
2. Surgeon as prognostic factor. Annual conference of ASI Kerala Chapter, Trivandrum May 3-5, 2002.
3. Stop cancer in its track. Annual conference of Indian Association of Surgical Oncology, NATCON IASO 2002, Ooty, September 2002.
4. Gene therapy for breast cancer. ASICON 2002, Annual conference of Association of Surgeons of India, Kolkata Dec 25-31, 2002.

Dr. Bipin T Varghese

1. South Indian Plastic Surgeons Association conf. Trivandrum, 26-28 February 2002.
2. Kerala AOICON 2002 Calicut, 30th August to 2nd September 2002.

Dr. Chitrathara. K

1. Pre conf. workshop and annual conf south zone urological society of India. Calicut, 8-12 August 2002.
2. 1st world summit on renal surgery- Live telecast surgery Ahmedabad, 3-9 February 2003.

Dr. Jem Prabhakar

Evidence based management of common cancers Mumbai, 27th February to 3rd March 2003

Dr. Paul Augustine

1. KASICON - 2002 Trivandrum, 3-5 February 2002.
2. Evidence based management of common cancers Mumbai, 27th February to 3rd March 2003.

Dr. Elizabeth Mathew Iype

1. Reviewer, Australasian J of Cancer & Indian Journal of Cancer.
2. Annual conference of Indian Assoc. of neuro Otology Cochin Nov. 2002.
3. International CME Wound con. Trivandrum, April 2002.

ANAESTHESIOLOGY

Dr. Rachel Chorian Koshy	Associate Professor
Dr. Mary Thomas	Assistant Professor
Dr. A. Venugopal	Assistant Professor
Dr. Mallika Balakrishnan	Lecturer
Dr. Renju Kuriakose	Lecturer
Dr. Ajay Pillai	Lecturer

The new operation theatre complex (4 Operating rooms) and ICU was made functional from 1-4-2002 with 30% increase in turnover of major surgical procedures compared to the previous year. The procurement of two Siemens Servo 900C ICU ventilators provides necessary ventilatory support for high risk patients.

	Number
Pre Anaesthetic check up	: 2259
Total no. of cases done under Anaesthesia	: 2069

Sitewise breakup of cases done under anaesthesia

Major Head and Neck Surgery	: 855
Extremity/Groin	: 117
Gynaec Urology	: 247
Breast	: 528
Gastro intestinal	: 175
Esophagus	: 18
Endoscopic procedures	: 53
Central Venous access(paediatric)	: 51
Emergency	: 25

Anaesthetic Technique

Balanced General Anaesthesia	: 1591
General anaesthesia +Epidural anaesthesia	: 244
Regional anaesthesia	
Regional Block	: 7
Subarachnoid Block	: 43
Epidural Block	: 59
Combined spinal+epidural	: 21
Total Intravenous anaesthesia	: 104

Conferences / Workshop Attended

Dr. Rachel Cherian Koshy

1. International CME on wound healing - Wound Con-2002, Trivandrum, 13th April 2002
2. IAPC Kerala State Conference and Palliative Care CME, Trichur, 5-7 October 2002
3. Planning of Diploma Programme in Palliative care Medicine, Bangalore, 10-13 February 2003

Dr. Mary Thomas

ISA Trivandrum city Branch, Trivandrum, 13th September 2002

Dr. Venugopal

1. International CME on wound healing- Wound Con-2002, Trivandrum, 13th April 2002
2. 26th Annual Con of Indian Society of Anaesthesiologists, Kannur, 18-21 October 2002
3. ISA Golden 2002 Native conference of Indian Society, Coimbatore, 24-31 December 2002

Dr. Mallika Balakrishnan

1. International CME on wound healing, Trivandrum, 13th April 2002
2. RACE-2003 CME, Chennai, 18-24 February 2003

Dr. Renju Kuriakose

International CME on wound healing, Trivandrum, 13th April 2002

Dr. Ajay Pillai

1. International CME on wound healing, Trivandrum, 13th April 2002
2. 26th Annual conference of Indian society of Anaesthesiologist, Kannur, 18-21 October 2002
3. 50th National conference of Indian society of Anaesthesiologist, Coimbatore, 25-31 December 2002

PAEDIATRIC ONCOLOGY

Dr. P. Kusumakumary	-	Additional Professor
Dr. Priya Kumari T	-	Assistant Professor
Dr. Jayasree P	-	Lecturer

Clinical Activities

Table-5: Distribution of paediatric patients registered during 2002

Paediatric Cases	No	Percentage
Acute Lymphatic Leukaemia	120	29.2
Acute Myeloid Leukaemia	36	8.75
CML	3	0.73
Brain Tumour	49	11.92
Lymphoma	25	5.3
Soft Tissue Sarcoma	7	1.7
Neuroblastoma	22	5.3
Wilm's Tumour	16	3.89
Bone Tumor	19	4.62
Retinoblastoma	16	3.9
Germ Cell Tumour	10	2.43
Hepatic Tumour	4	.97
Histiocytosis	14	3.40
Rhabdomyosarcoma	7	1.70
Carcinoma	5	1.2
Miscellaneous	58	14.1
Total number of new patients	411	100
Total number of out patient visits		11,580

Paediatric tumour board, with a multidisciplinary team consisting of paediatric oncologists, paediatric surgeons, pathologists and radiation oncologists is conducted every Monday at 2 PM.

Research Activities

1. Significance of programmed cell death in paediatric acute lymphoblastic leukaemia - DST funded Project. 2000 - 2003.
Investigator : Dr. Kusuma Kumari. P

2. Susceptibility to childhood ALL. Influence of CyPIA1, CyP2D6, gSTM1 & gSTTI genetic polymorphism. Funded by Council of Scientific and Industrial Research 2000 - 2002.
Investigator : Dr. Kusuma Kumari. P

Conference attended/ Paper presented / Invited talk

Dr. Kusuma Kumari P.

1. Guest lecture, "Langerhans Cell Histiocytosis". National CME on Paediatric Oncology, Chennai May 5th, 2002.
2. Panelist for the discussion on "Malignant round cell neoplasm". Annual conference of IRIA (Indian radiological and imaging association), Kochi, 6-7 April, 2002.
3. Invited talk, "NHL in children". Pedecon 2002, Ahmedabad 17-18 August, 2002.
4. Invited talk, "Psychosocial support of children with cancer". 34th SIOP, Porto, Portugal.
5. Panelist, "Malignant round cell neoplasm". II SIOP Asia Conference, New Delhi November 22-25 2002.
6. Guest speaker, "Childhood lymphomas". National CME on Recent advances in Paediatric Oncology, KMC, Attavar, 8th December 2002.

Dr. Priya Kumari. T

1. Hepatocellular carcinoma in longterm survivors of paediatric Acute lymphoblastic leukaemia - An alarming future problem? II SIOP Asia Conference - New Delhi 22-25 November, 2002
2. Invited talk, "Paediatric cancers - Diagnosis and Management" WHO Cancer registry training programme, Regional Cancer Centre, Thiruvananthapuram. 6-10 January, 2003.

MEDICAL ONCOLOGY

Dr. N. Geetha	- Associate Professor
Dr. Sreejith Nair	- Assistant Professor
Dr. N. P. Prakash	- Assistant Professor
Dr. B. Mirsa Husain	- Assistant Professor
Dr. V.S. Lali	- Resident Medical Officer

The division is responsible for the diagnosis and management of haematological and lympho-reticular malignancies, sarcomas and other solid tumours where intensive chemotherapy is indicated. Autologous bone marrow transplantation following high dose chemotherapy for multiple myeloma was performed in 5 patients.

Academic activities

Post graduate residents in general medicine and radiation oncology were given training in medical oncology. A continuing medical education programme in Medical Oncology was also conducted.

Awards / Merits / Conferences / Workshops

Dr. N. Geetha

Merits & Nominations

1. Editor, Australasian Journal of Cancer
2. Member, Ethics Committee, RCC, Trivandrum

Research Projects

1. A randomised open label comparative multicentre study of Voriconazole Vs. Amphotericin in invasive aspergillosis (Co-investigator)
2. A randomised open label international study of interferon alpha versus peginterferon in chronic myeloid leukaemia (Co-investigator)
3. Multicentre study of Cremophor free protein stabilized nanoparticle formulation of Paclitaxel in patients with stage IV metastatic breast cancer (Co-investigator)
4. Chemotherapy response in osteosarcoma. Role of intrinsic nuclear factors in the prognosis of osteogenic sarcoma (Principal investigator)

Training

Visitorship and training at MD Anderson Medical Centre, Houston, USA, May - June, 2002

Conferences attended and papers presented

1. ASCO Pan Asia Cancer Conference, New Delhi, 24-26 February, 2002.
2. ASCO 2002 Annual meeting, Orlando, Florida, USA, 18-21 May, 2002
3. 18th UICC International Cancer Congress, Oslo, Norway, 30th June - 5th July, 2002
 - a. Uncommon presentations of Osteosarcoma
 - b. Multiple myeloma in the young
4. 34th SIOP Cancer Congress, Porto, Portugal, 18-21 September, 2002
 - a. Pattern of malignancies in the adolescents
 - b. Treatment outcome in osteosarcoma

Dr. Prakash N.P

ASCO-PAN meeting at New Delhi in March 2002

DENTAL CARE

Dr. Nalinakumari, K. R. - Assistant Professor

HIGHLIGHTS OF ACTIVITIES

1. Basic procedures
 - (a) Oral prophylaxis.
 - (b) Conservative therapy.
 - (c) Dental extractions.
2. Minor surgeries Oral Biopsies.
3. Therapeutic management of pre-cancerous and other oral lesions.
4. Management of temporomandibular problems and trismus.
5. Reconstructive procedures construction of maxillofacial prosthesis.
6. Pre & Post radiation Care of teeth including fluoride gel application.
7. Management of oral problems of patients undergoing chemotherapy
8. Providing occlusal adjustments.

TABLE-6 : Patient Statistics

	Number
1. Total number of patients attended	- 3412
2. Total number of new cases	- 585
3. Biopsies taken	- 132
4. Teeth extracted	- 2832
5. Post-radiation (New cases) care	- 199
6. Post-radiation total number of cases	- 650
7. Maxillofacial prosthesis prepared	- 21
8. Conservative therapy	- 0
9. Oral prophylaxis done	- 64
10. Occlusal adjustments done	- 20
11. Dental Extraction Patients (Total Number)	- 762

Pre & post radiation care of teeth

The division provides pre & post radiation care of teeth for cancer patients. In the pre-radiation care we try to eliminate all the conditions such as caries tooth, root stumps, poor oral hygiene etc within the oral cavity which are liable to pose a problem during the next 5-10 years after radiation therapy especially in the head & neck region. This includes procedures like oral prophylaxis, conservative therapy, extractions & oral hygiene instructions for better maintenance during treatment.

Post radiation care includes mainly fluoride therapy, which is advocated to all patients undergoing radiation in the head & neck region and is one of the best possible ways to protect the teeth from sensitivity & post radiation caries. Currently about 650 patients are undergoing fluoride therapy of which about 199 are new cases.

Other Activities

Maxillofacial prosthesis for correcting deformities of the face after surgery in oral cancer.

CLINICAL SERVICES AND MEDICAL RECORDS

G. Rajasekharan Nair

Medical Records Officer.

Table-7 : Number of case records distributed to various divisions during the 2002.

Appointments	1,13,250
ECDC, Ernakulam	1302
NBRR, Karunagapally	763
Academic & Research Study & Reference	16,100
Other purpose, LIC, Billing, Cytology etc	1030
Investigation results, Brachytherapy, teletherapy	15,100
X-rays	1504
Total new Cases Registered	10,174
Total Hospital Deaths	584

Visitors & Training :

Thirteen Medical Documentation students of MG University, Kottayam completed their project work, through this division.

Table-8 Patient attendance during year 2002	Number
New cases registered	10,174
Review	1,22,908
Daily average	390

In - patients

Haematology/Lympho reticular malignancy & Sarcoma	-	1730
Head & Neck	-	703
Breast/CNS	-	480
Gynaec & Genitourinary	-	795
Chest & Gastro	-	644
Pediatric Oncology	-	724

Thyroid	-	266
(One day admission not included in the list)	-	5342
Average in-patient length of stay	-	11
Hospital Deaths	-	584

Table-9: Clinicwise distribution of patient attendance during the year 2002

Clinic	New Cases	Review cases
Haematology/Lympho Recticular & Sarcoma	1302	20,125
Head & Neck	1977	22,238
Breast/CNS	1510	22,748
Gynaece & Genitourinary	1290	17,866
Chosl & Gastro	2056	11,521
Peciatic Oncology	405	10,653
Thyroid	566	6,527
Private Registration	1068	11,230
Total	10,774	1,22,908

NURSING SERVICES

Sr. Vijaya Puthusseril	Chief Nursing Officer & Assoc.Professor
Mrs. Graceama Joseph	Nursing Superintendent
Mrs. S. Geetha	Nursing Supervisor
Mrs. Annamma Jacob	Nursing Supervisor

Training programmes

1. Clinical posting in Oncology Nursing for 3rd year BSc students of College of Nursing, Trivandrum from 24.04.02 to 11.05.02 for 20 students and from 13.05.02 to 25.05.02 for 20 students.
2. Orientation / Observation update for students from Karolinska Institute of Sweden under Global Health Exchange Programme affiliated to College of Nursing, Trivandrum .
3. Clinical posting in Nursing Administration for 4 students of 3rd semester MSc of College of Nursing, Trivandrum (17.06.02 to 29.06.02).
4. Orientation update for 38 students of 3rd year BSc of College of Nursing Kottayam on 22.06.2002.
5. Clinical Posting for 22 students of 3rd year BSc of College of Nursing Thalassery (17.02.03 to 19.02.03).
6. Clinical posting in Nursing Administration for 4 students of 4th semester MSc students of College of Nursing, Trivandrum (17.02. 2003 to 28.02.2003).

Nursing Assistants Training programmes

The 5th batch of Nursing Assistant Training course with of 20 students are on their apprenticeship.

Visitors

1. Dr.Micheal J. Morgan, Assistant Professor from Wayne State University (25.05.03).

Conferences attended

Sr. Vijaya Puthusseril

Meeting of the Nursing Education Committee of Indian Nursing Council at Delhi, on 13th Sept 2003 and presented the syllabus of speciality course in Oncology Nursing.

Suneethi M.S

Attended workshop on 'Management update for Nurse Managers' organized by College of Nursing Trivandrum from 17.04.02 to 27.04.02.

Bensamma Varghese & Shema C

Attended 'Infection Control' organized by College of Nursing, Trivandrum on 28.09.02.

Aritha T & Indulekha K.S attended CME on 'Palliative care' organized by Palliative Care Division of RCC on 12.10.02.

Kumar Thankom

Attended CMAI meeting regarding 'planning in Palliative Medicine and Nursing for doctors and Nurses' as a resource person at Bangalore from 11.02.03 to 16.02.03.

PAIN AND PALLIATIVE CARE

Dr. Rachel Cherian Koshy

Associate Professor

Dr. Vasudevan Mappat

Anesthesiologist

Dr. R. Manjula

Resident Medical Officer

Dr Mary Thomas, Dr Venugopal A, Dr Mallika Balakrishnan, Dr Renju Kuriakose and Dr Ajay Pillai of Anaesthesiology Division and Dr Paul Sebastian and Dr Cherian M Koshy of Surgical Oncology Division offered help and support in delivering Palliative Care service and conduct of various teaching programmes of the division.

Clinical Work

New cases	2258
Repeat visits	5048
Lymphoedema Service	146

Training / Workshops Organized

1. CME Programme on Pain Relief and Palliative Care on 29-6-2002. (73 doctors participated)
2. One month training in Palliative Care for 9 doctors and 4 nurses (in 6 batches)
3. National Palliative Care Workshop 18-22 November 2002 organised by CMAI (32 participants)
4. WHO workshop on Cancer Pain Relief and Palliative Care (43 participants from selected areas in Kerala where there is no palliative care service)
5. CME programme on Palliative Care on 12-10-2002. 59 nurses participated
6. Seminar on Spirituality in Holistic Care on 22-1-2002. Rev Peter Speck from UK was the main speaker. (18 participants)
7. Volunteers training programme from January to March 2002 in order to train them for specific tasks like home care, complementary therapy and lymphoedema care.

The following new peripheral Palliative Care Centres were started:-

1. Pain and Palliative Care Centre, Kollath Hospital, Peroorkada (18-7-2002)
2. Pain and Palliative Care Clinic, Neendakara (9-9-2002)
3. Adimaly Pain and Palliative Care Society (5-10-2002)
4. Pain and Palliative Care Clinic, St Joseph's Hospital, Anchal (16-11-2002)
5. Specialist Hospital, Ernakulam
6. Anwar Hospital, Alwaye
7. Chaithanya Hospital, North Paravur
8. Vanchinad Hospital, Trivandrum

Visitors Ms Gilly Burn and Ms Helen Pasant from UK visited Palliative Care Centre and gave away the certificate of one year training in Palliative Nursing to Ms Sheeja (Jan 2003).

Oral Morphin Consumption was 10.9 kilograms which is being supplied free of cost to all patients requiring pain relief. Apart from distribution through RCC Pharmacy morphine has also been given through our network of peripheral centers including District Hospital Palakkad, Malabar Cancer Society Kannur, District Hospital, Kollam, NBRR Neendakara, ECDC Ernakulam, District Cancer Care Centre Pathanamthitta, ECDC Palakkad, CSI Mission Hospital Attingal and Pain and Palliative Care Centre, Adimaly

Conferences Attended

Dr Rachel Cherian Koshy

WHO Workshop organized by Community Oncology division of RCC 29-11-2002.



WHO Workshop on Pain and Palliative Care

BLOOD BANK

Dr. P. Jayalekshmi - Medical Officer
Mr. P. Meera Sahib - Senior Scientific Officer

During the reporting year there has been considerable increase in the number of blood donors, preparation and issue of blood components mainly packed cells and platelet rich plasma. One blood bank refrigerator and a Platelet incubator and Agitator manufactured by Terumo Penpol were installed on February 2003. During the reporting year five Peripheral Blood stem cell collection had been done on patients with the Cell Separator Machine.

Table-10: Blood Bank Statistics		Numbers
Blood grouping	--	18650
Cross Matching	-	6768
Blood Donor	-	6383
HIV +ve Donors	-	15
HCV +ve Donors	-	223
HbsAg +ve Donors	-	100
VDRL +ve Donors	-	7

Components Prepared

Packed Red Cells	-	5879
Platelet Rich Plasma	-	5601
Single Donor Plasma	--	590
Fresh Frozen Plasma	-	260
Platelet Phoresis	-	33

CYTOPATHOLOGY

Dr. Elizabeth K. Abraham
 Dr. Jayasree K
 Dr. Rekha A. Nair
 Dr. Anitha Mathews
 Dr. Thara Somanathan
 Dr. Nileena Nayak
 Dr. Raveendran Pillai K
 Dr. Lakshminarayana K
 Dr. Lakshmi S

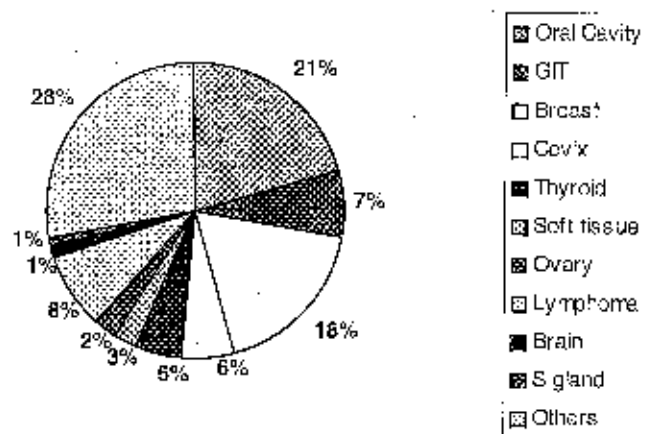
Professor
 Associate Professor
 Associate Professor
 Asst. Professor
 Asst. Professor
 Asst. Professor
 Asst. Professor
 Asst. Professor
 Lecturer (on leave)

I. Diagnostic Services

a. Surgical Pathology

i. Histopathological examinations were done in 9056 cases of which 5637 cases were surgical specimens from the center and 3419 were review of patients referred from other hospitals (Fig 1).

Fig 1 Malignant tumors of major sites -Surgical Pathology
 n=5998



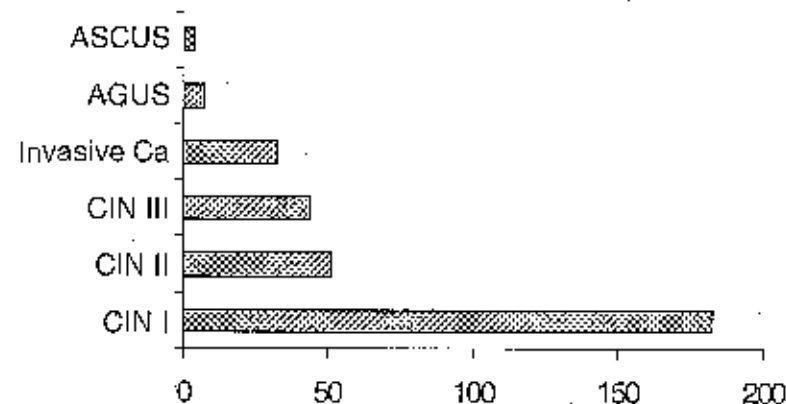
ii. Immunohistochemical staining- In the current year, a total of 2033 immunohistochemical tests were done. IHC staining was also done for finding out estrogen (ER) and progesterone receptor (PR) status of breast cancer patients (995 ER and 603 PR).

b. Cytopathology

i. Gynaec Cytology

Cervical smears were examined for 13,685 women. 279 cervical intraepithelial lesions were reported (Fig.2). Second opinion on cervical smears was given to the peripheral centers.

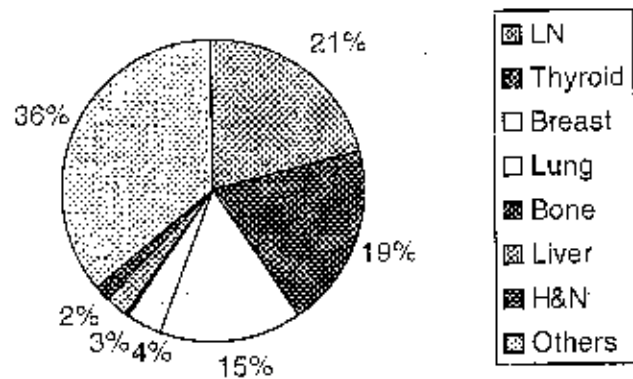
Fig 2 Epithelial Abnormalities In Cervical Smear
 n=312



ii. Fine Needle Aspiration Cytology

From a total of 6535 Fine needle aspiration specimens, 1339 malignancies were diagnosed. The major sites of aspiration were lymphnodes (1375), thyroid (1274) and the breast (988). Total number of malignancies at various sites is depicted in Fig 3. Fine needle aspiration slides of 348 cases from various Early Cancer Detection Centres were reviewed.

Fig 3 Malignant Tumors-FNAC
n=2060



iii. Fluid Cytology

A total of 1121 samples of aspirated fluids from body cavities and natural secretions were examined, which includes 572 samples of Cerebro Spinal Fluid, 194 samples of pleural fluid, 192 samples of ascitic fluid and 44 samples of urine.

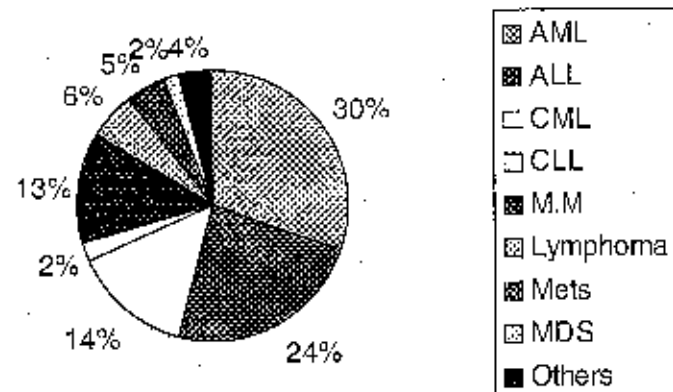
iv. Sputum Cytology

Sputum samples were examined from 650 patients by collecting 4-5 samples from each patient and making 2 smears from each sample.

c. Haematopathology

Materials studied include 2853 bone marrow aspirates and imprints, 889 peripheral smears and 236 slide reviews (Fig 4). Special stains for typing leukemia include Peroxidase, PAS, NSE, and CAE. Immunocytochemical staining using CD7, CD19, CD33, CD13, CD3, CD20, LCA. Immunotyping was done on 183 cases (428 tests) of leukemia.

Fig 4 Hematological Malignancies
n= 648



II. Teaching and Training programmes

Regular one year training for cytotechnologists and six months training for Cytotechnician has been conducted. The division has been accredited by the IAC for diagnostic and examination purpose. Theory and practical teaching have been provided to the B.Sc MLT from the MG University. Regular slide discussion sessions have been conducted for the postgraduate students of Kottayam, Calicut and Trivandrum Medical Colleges. Demonstration /discussion have been conducted for the Radiotherapy PGs.

New course

Postdoctoral certificate course in Oncopathology (one-year) for pathologists.

Facility Augmentation

1. Telepathology facility has been started in collaboration with the Computer division of RCC and ER&DC. It is being utilized for obtaining expert opinion from renowned pathologists from all over the world.
2. Photomicrography facility with digital camera has been installed to improve the quality of teaching/discussion.

Other academic activities

1. Participated in the External Quality control programme of IAC.
2. National IAC Examination for Cytotechnologists and Cytotechnicians.
3. Organized WHO&DGHS Sponsored Training Programme on Quality Assurance in Fine Needle Aspiration and Cervical cytology (January 2003).

Ongoing Research Projects

1. Trivandrum Oral Cancer Screening study-
Co investigators:Dr.Elizabeth K.Abraham & Dr.Thara Somanathan
2. Adjuvant Tamoxifen in Breast cancer-Long against shortor
Co-investigator :Dr. Elizabeth K. Abraham
3. Molecular alterations in Nasopharyngeal cancer with reference to Oncogenes and tumour suppressor genes
Co-investigator : Dr. Jayasree.K
4. Cell surface changes in leukemic cells. Study using plant lectins.
Co-investigator : Dr.Rekha.A.Nair.
5. Indigeneous plant lectins and their use in Immunology and Pathology.
Co-investigator : Dr.Rekha.A.Nair.
6. Comparative evaluation of early detection of cervical cancer precursors by VIA, VILI, HPV testing and colposcopy.
Co-investigator : Dr. Thara Somanathan
7. Identification of markers for biological grading of malignant lesions in the broncopulmonary mucosa.
Funding agency – Dept of Science, Technology and Environment.
Principal investigator : Dr.K Raveendran Pillai
8. Trivandrum Corporation Cervical Cancer Control Programme
Co investigators-Dr.Raveendran Pillai.K & Mr.Sujathan.K
9. Isolation of a plant lectin and correlation of the tissue binding profile of it with that of animal lectins to evaluate its significance as a diagnostic and/or prognostic marker.
Principal investigator : Mr. Sujathan.K (PhD programme)

Conferences / CMEs /Workshop attended:

Dr. Elizabeth Abraham

WHO & DGHS Sponsored Training Programme on Quality Assurance in Fine Needle Aspiration and Cervical cytology, RCC,Trivandrum 2003-Organizing Secretary &Faculty.

Dr. Jayasree K

1. Annual Conference of Radiology 2002, Kochi, 2002 Faculty.
2. Pre Conference CME on Cytology of Lymphoma and 32nd National IAC Conference at Chandigarh, 2002.
3. WHO & DGHS Sponsored Training Programme on Quality Assurance in Fine Needle Aspiration and Cervical cytology, RCC, Trivandrum 2003- Faculty.

Dr. Rekha A.Nair

1. National CME on Challenges in Surgical Pathology-Thirunelveli Medical College- Tamilnadu 2002.
2. 2nd National CME cum Workshop in Hemato-oncopathology- IICM, AIIMS, New Delhi-2002.
3. Workshop on Quality Assurance in Fine Needle Aspiration- RCC,Trivandrum 2003-Faculty

Dr.Anitha Mathews

1. Cancer Registry Training Programme sponsored by WHO & DGHS, Govt. of India, 2003, at RCC, Trivandrum - Faculty
2. Quality Assurance in Pap smear & Fine Needle Aspiration Cytology Orientation Training Programme, RCC, Trivandrum, 2003.

Dr.Thara Somanathan

1. 32nd Annual Conference of IAC at PGIMER Chandigarh, 2002
2. XVIII Annual Review Meeting of National Cancer Registry Programme, Tata Memorial Hospital, Mumbai, 2002.
3. 57th Indian Dental Conference, Kochi, ,2003-Faculty.
4. National CME on Challenges in Surgical Pathology, Thirunelveli Medical College, 2002
5. CME on Lymphomas, IAC Conference, PGIMER Chandigarh, 2002.

6. Workshop for Doctors on Cancer Control sponsored by WHO and DGHS, RCC, Trivandrum, 2002-Faculty.
7. WHO&DGHS Sponsored Work shop on Quality Assurance in fine needle aspiration and cervical cytology –2003-Faculty.

Dr. Nileena Nayak

1. 2nd national CME and workshop on hematopathology, organized by Laboratory Oncology unit, IRCH at AIIMS, New Delhi 2002
2. WHO and DGHS sponsored training Programme on Quality assurance in FNAC and Cervical Cytology 2003 at Regional Cancer Centre. Faculty.

Dr. Lakshminarayanan.K

1. Published a book titled "Handbook on histotechnology"
2. Idiopathic nephritic syndrome in adults – predictors of histology and therapeutic response – best paper award (tanker award) at Southern chapter of Indian society of Nephrology Annual Conference at Coimbatore, February 2002.

Mr. K.Sujathan

1. WHO&DGHS Sponsored Work shop on Quality Assurance in fine needle aspiration and cervical cytology 2003-Joint organizing secretary & Faculty .
2. XXIIInd Annual conference of Indian Association of Cancer Research, Trivandrum, 2003.

Dr. Raveendran Pillai.K, Mrs. Veena VS, Mr. Jayalal K.S and Mr. Mani K.S

WHO&DGHS Sponsored Work shop on Quality Assurance in fine needle aspiration and cervical cytology 2003-Faculty.



Workshop on quality assurance in FNAC. Inauguration by Shri. K.Mohan Kumar, MLA.

IMAGEOLOGY

Dr. K. Ramachandran	-	Professor
Dr. A.S. Krishnakumar	-	Associate Professor
Dr. M. Venugopal	-	Lecturer

Table 11 : Diagnostic and interventional studies Number

Plain X-ray	:	19017
Barium Meal	:	23
Barium Swallow	:	197
Myelogram	:	10
Mammography	:	1795
CT Scan	:	7224
CT & guided procedures	:	332
Ultrasound	:	9174
Doppler studies	:	156

Academic Activities:

Training in various imaging modalities including mammography was provided to Radiologists from various parts of Kerala. Post graduates in Radiodiagnosis from various Medical Colleges, had short term postings. Five post graduate doctors had observer training in ultrasound for 6 weeks. Post graduate students from Dental College, Trivandrum were trained. In addition to the daily noon clinics, we have actively participated in the monthly meetings of Trivandrum Radiology Club, Pulmonary Radiology Club in SUT Hospital.

Conferences / CMEs / Workshop attended:

Dr. K. Ramachandran

- 1) Faculty in WHO workshop for doctors on Cancer Control sponsored by the WHO and Directorate General of Health Services, (28th & 29th October) at Regional Cancer Centre, Trivandrum.
- 2) IR & IA South Zone CME 2002 (28th & 29th September 2002) at SCTIMST, Trivandrum.
- 3) 77th All India Medical Conference 2002 of Indian Medical Association (19-21 July 2002) at Trivandrum.

Dr. A.S. Krishnakumar

- 1) IRIA South Zone Conferences held at Thiruvananthapuram September 28th & 29th September, 2002.
- 2) IMA National Conferences on July 19th to 21st 2002 at Thiruvananthapuram.
- 3) 6th Sheffield International Conferences on diagnostic Imaging at Kochi on January 2003.
- 4) Organising Committee Member of 12th International Symposium on recent advances in causes and control – January 10th to 12th 2003 at RCC, Thiruvananthapuram.

Dr. Venugopal.M

1. "Guided Aspiration techniques": Training Programme on Quality Assurance in fine needle aspiration cytology, organized by Division of Cytopathology, RCC, Trivandrum, sponsored by WHO & DGHS (Govt.of India) & conducted in the Regional Cancer Centre, Trivandrum (January 15 – 18, 2003).
2. IRIA South Zone Conferences held at Thiruvananthapuram September 28th & 29th 2002.

NUCLEAR MEDICINE

Dr.V.M.Pradeep
Dr.A.Sraekumar

Additional Professor
Asst. Professor.

The division provides diagnostic and therapeutic facilities using open radioactive sources. The center attracts a large group of patients who come from various districts of Kerala as well as South Tamil Nadu and Karnataka, Male and Sri Lanka. The work includes in-vitro assays, various types of scans, and treatment for Thyrotoxicosis and thyroid cancer as well as palliative treatment of bone pain. This is the only center in the state that provides high-dose therapy using radioactive sources. Now the assay section caters to more than 40,000 patients annually. The division participates in several teaching and other academic activities. This year the division came in the map of the National Board of Examinations, by conducting the DipNB Examination (Nuclear Medicine).

Thyroid Clinic.

Facilities for comprehensive diagnostic and therapeutic options for various thyroid disorders are available. These include thyroid scanning, ultrasonography, in-vitro assays, and radioiodine therapy. 10133 cases attended the thyroid clinic as now cases with direct referrals and follow-up cases. These were primarily cases of Ca Thyroid 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.

Breakup of thyroid investigations

Thyroid Scans + Uptake	4038
Thyroid Ultrasound	733
Thyrotoxicosis	202
Ca Thyroid	421

Thyroid scans are done with radioiodine (I-131), technetium (Tc99m). Large dose, whole body radioiodine scans are done for Ca.Thyroid. Both rectilinear scanner and gamma camera are used for thyroid scanning. An ECIL uptake system is used for Thyroid uptake studies.

Immunoassay

The Immunoassay section performed 19866 assays of thyroid hormones, tumor markers and miscellaneous assays.

Imaging - (Gamma Camera)

The division has a Siemens Gamma Camera, Basicam Model with a microdelta computer. This equipment is used for static and dynamic scintigraphy. Bone scans for cancer patients forms the main work on this instrument. Dynamic renal studies including pediatric renal evaluation are the second most important. Tetrofosmin imaging was introduced recently. Technetium for the purpose of these scans is eluted from Molybdenum using Mo-Tc generator from BARC. Scanning for medullary Ca. Thyroid using $^{99m}\text{Tc(V)}$ -DMSA was started. ^{131}I -MIBG scanning for Medullary Ca thyroid has also been started.

Radionuclide therapy

Radionuclide therapy section of Nuclear Medicine is one of the largest in the country. The division has a full-fledged radionuclide therapy ward with delay tank for the treatment of thyroid cancer. The division has facilities for bone pain palliation using ^{89}Sr . Treatment of bone pain using ^{153}Sm -EDTMP was also started.

Dr. A.Sreekumar

Papers presented

1. "I-131 MIBG Scintigraphy in Paediatric Malignancies" at the Annual Conference of Association of Radiation Oncologist of India [AROI] – November 2002, Bangalore.
2. "Hypertrophic Pulmonary Osteoarthropathy" Detected by Tc- 99m MDP-A case report and review of literature at the 34th Annual Conference of Society of Nuclear Medicine of India Kolkata – December 2002.
3. Invited talk on "Differentiated Thyroid Carcinomas" at the National Consensus Conference on Thyroid Carcinoma, Kochi April 2003.

RADIATION PHYSICS

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

Table-12: Patient Services

Treatment	Number
External Beam Radiotherapy	7088
Brachytherapy	
Conventional	
Interstitial Implantation	47
Mould	8
Selectron LDR	85
Microselectron HDR	
Gynaec	957
Oesophagus	144
Soft tissue sarcoma	14
Others	16
Simulator	5663
Mould Room -- Shells & special blocks	1416

Academic Activities

Classes were conducted in Medical Physics and practical training imparted to the following categories of students:

Diploma in Radiological Technology (DRT); B.Sc. MLT; DMLT; B.Sc. Nursing; M.Sc. Nursing; MBBS; DMRT; DMRD; MDS(Oral Radiology); MD Radiotherapy; MD & Dip NB (Radiodiagnosis)

Training Programme

Three months Refresher program in Imageology/Nuclear Medicine and Radiotherapy for Radiographers started in 1994 has covered 118 Trainees in Imageology/Nuclear Medicine and 26 Trainees in Radiotherapy till March 2002. Dr. Raghu Ram K.Nair coordinates the program.

Research Projects

Projects completed

1. **Dosimetry of early head and neck cancers, mantle field treatment and cervical cancer with special reference to radiation protection.**
(Funded by AERB Mumbai)
Principal Investigator: Sri T.S.Elias
2. **Development of indigenous after-loading brachytherapy unit (Qri) in the treatment of Ca Cx**
Principal Investigator: Sri T.S.Elias
(Funded by Dept. of Science & Technology, New Delhi and RCC, Trivandrum)

Projects ongoing

1. Natural Background Radiation Registry (NBRF) – Physics Studies (Funded by Health Research Foundation, Japan)
Co. investigator: Raghu Ram K Nair
2. Fabrication of beam direction device for external beam therapy (funded by STEC, Govt of Kerala)
Principal Investigator: Sri T.S.Elias
3. Development of Indigenous software controlled remote afterloading micro high dose rate system in Brachytherapy.
(Funded by DST, New Delhi)
Principal Investigator: Sri T.S.Elias

Awards/Honours/Fellowship/Nominations/Training

Dr Raghu Ram K.Nair

1. Faculty Member for Workshop on Ultrasound Training for Doctors in DHS, Govt of Kerala, 12-06-2002.
2. Examiner for MD (Radiodiagnosis)/DMRD of University of Kerala.
3. Examiner for PhD qualifying examination, University of Calicut
4. Research Supervision for the following Ph D programs:
 - i. Design, Development and evaluation of indigenous Computer controlled Remote Afterloading System for the treatment of Carcinoma Cervix- Sri Thayal Singh Elias, Kerala University

- ii. Calibration, Dosimetry and Safety in Brachytherapy Techniques in the treatment of malignant Diseases- Sri P. Raghu kumar, M.G.University, Kottayam
- iii. Development of a Quality Assurance protocol, dose measurement and radiation safety evaluation in CT Scanners- Sri K.A.Davis M.G.University, Kottayam
- iv. Modification of Radiotherapy by physical parameters- Dr Sajeed A, Kerala University

Dr. C.A.Davis

1. Awarded Ph D in Physics by University of Kerala for the thesis "Studies on the Physical parameters in the treatment of malignant disease by using external radiation beams" in Oct 2002.
2. Examiner for Ph D Qualifying Examination of University of Calicut.
3. DAE-BRNS National Laser Symposium at SCTIMST, Trivandrum, 14- 16 Nov 2002.

Sri P.Raghu kumar

1. Examiner, B.Sc MRT, M.G.University, Kottayam.
2. Examiner, DRT, Medical College, Alappay.

Sri B. Saju

Two weeks Training in High Energy Linear Accelerator at Crawley, UK – September,2002

Sri Giri Purushothaman

- DAE-BRNS National Laser Symposium at SCTIMST, Trivandrum, 12-16 November 2002.

EPIDEMIOLOGY AND CLINICAL RESEARCH

Dr. Aleyamma Mathew

Associate Professor of

Epidemiology & Clinical Research

Ms. Padmakumary Amma G

Lecturer in Biostatistics

Dr. Kalavati M C

Lecturer in Epidemiology

The division runs Hospital-based cancer registry, and Population-based cancer registry, Trivandrum, conducts epidemiological as well as clinical research studies, organizes cancer-screening programmes and provides statistical consultancy for various ongoing research projects at the hospital.

Cancer registries

1. Hospital Cancer Registry, Regional Cancer Centre, Trivandrum

(Partially funded by Indian Council of Medical Research, New Delhi)

A total of 7988 patients reported during the year 2000. Please see tables 13 to 16.

**Table-13 : Hospital Cancer Registry - Trivandrum : Number of Cancer Cases 2000
Age by Site - Male**

ICD10	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	%
		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
C00	LIP	-	-	-	-	-	-	-	1	-	1	1	3	4	1	3	14	0.26	
C01	BASE OF TONGUE	-	-	-	-	-	-	-	1	4	6	7	10	9	6	-	44	1.13	
C02	TONGUE	-	-	-	-	2	2	-	8	15	29	28	21	21	13	10	187	4.8	
C03	GUM	-	-	-	-	-	-	1	2	1	4	15	5	16	6	13	15	76	2
C04	FLOOR OF MOUTH	-	-	-	-	-	-	-	2	2	1	6	4	9	0	4	6	65	1.16
C05	PALATE	-	-	-	-	-	-	-	2	1	5	4	6	7	7	5	4	41	1.05
C06	OTHER MOUTH	-	-	-	1	-	1	1	3	13	25	24	28	37	37	15	14	190	5.1
C07	PAROTID GL.	-	-	-	1	-	2	-	2	-	2	1	2	4	3	1	-	19	0.49
C08	SALIVARY GL.	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-	2	0.05
C09	TONSIL	-	-	-	-	-	-	-	-	3	3	12	6	6	7	5	3	47	1.21
C10	OROPHARYNX	-	-	-	-	-	-	-	1	4	10	9	8	11	11	9	2	57	1.72
C11	NASOPHARYNX	1	2	-	1	4	-	3	2	3	3	4	1	5	1	4	1	35	0.9
C12	PYRIFORM SINUS	-	-	-	-	-	-	-	-	5	8	9	9	13	10	7	8	60	1.77
C13	HYPOPHARYNX	-	-	-	-	-	-	-	1	4	9	8	4	4	11	3	6	51	1.28
C14	PHARYNX ETC.	-	-	-	-	-	-	-	-	-	1	1	1	1	-	1	1	5	0.13
C15	ESOPHAGUS	-	-	-	-	-	1	1	4	10	20	23	32	35	33	33	17	202	5.24
C16	STOMACH	-	-	-	1	-	-	3	10	6	16	23	25	28	29	13	9	167	4.03
C17	SMALL INTEST.	-	-	-	-	-	-	-	-	-	2	1	1	2	-	-	1	7	0.18
C18	COLON	-	-	-	-	1	2	5	4	5	8	7	7	3	6	8	4	50	1.46
C19	RECTOSIGMOID	-	-	-	-	-	-	-	-	-	2	1	2	-	6	-	-	11	0.28
C20	RECTUM	-	-	-	1	-	2	7	6	11	10	8	12	13	18	15	5	110	2.83
C21	ANUS & ANAL C.	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	4	0.1
C22	LIVER	3	1	-	1	-	-	-	5	6	11	9	14	2	9	4	2	79	2.03
C23	GALL BLADDER	-	-	-	-	-	-	-	-	1	-	1	1	1	-	-	-	4	0.1
C24	OTH. BILIARY	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	2	0.05
C25	PANCREAS	-	-	-	-	-	-	2	4	-	6	8	8	4	2	1	2	39	1
C26	OTHER DIG SYS	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	0.03

Hospital Cancer Registry - Trivandrum : Number of Cancer Cases 2000

Table-13 Contd.

Age by Site - Male

ICD10 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
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
C24 SKIN, OTHER	2	-	-	-	-	1	2	4	4	8	8	3	8	12	3	15	66 1.67
C77 MELANOPH. N. S.	-	-	1	-	1	-	-	-	1	-	2	-	-	-	-	-	5 0.13
C48 RETROPERIT.	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-	-	3 0.08
C19 CONN. TISS.	1	2	4	2	4	7	4	2	4	2	6	2	4	4	1	2	16 0.26
C60 BR. AST.	-	-	-	-	-	-	-	1	4	4	6	1	1	2	1	2	27 0.68
C60 PENIS	-	-	-	-	-	-	2	1	2	4	6	1	2	2	2	3	25 0.64
C61 PROSTATE	-	-	-	-	-	-	-	-	-	2	3	5	6	6	2	4	37 0.95
C62 TESTIS	1	-	-	-	3	0	1	2	-	1	2	7	7	14	15	12	53 1.37
C64 KIDNEY	-	-	-	-	-	-	-	-	-	1	2	2	-	-	-	-	7 0.18
C65 RENAL PELVIS	5	1	2	-	-	1	-	1	2	5	6	2	4	5	1	1	36 0.92
C66 URT. LR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 0.03
C67 URT. BLADDER	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1 0.03
C68 CYL.	9	-	-	-	-	-	-	3	-	7	5	6	9	11	6	5	56 1.42
C70 MENINGES	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	2 0.05
C71 BRAIN	9	5	4	4	6	0	14	11	9	12	13	3	0	7	2	2	115 2.95
C72 NERVOUS SY.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2 0.05
C73 THYROID GL.	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1 0.03
C74 ADRENAL GL.	0	1	-	-	3	0	12	10	14	11	6	12	7	3	6	2	106 2.72
C75 OTHI. ENDO. GL.	-	-	-	2	-	-	-	-	-	-	2	-	1	-	-	-	12 0.31
C76 ALL DEF. SCL.	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3 0.08
C77 SEC. LYMPH. N.	-	-	-	-	-	4	-	-	-	-	-	-	-	2	-	-	6 0.15
C76 SLC. RES. FIC	-	-	-	-	-	-	2	2	6	10	17	13	25	17	14	10	122 3.12
C79 SFC. OTHER	1	-	-	-	-	1	-	3	0	6	3	9	13	12	11	7	78 1.99
C80 PRIM. UNK.	1	-	-	-	1	1	1	1	1	-	3	2	10	9	7	5	63 1.62
C81 HODGKINS, D.	-	4	7	5	3	3	5	3	1	2	3	2	1	-	1	2	15 0.39
C82 FOLLICULAR NHL	-	-	-	-	1	1	1	2	8	4	6	6	3	2	1	-	39 1.00
C83 DL. FUSE NHL	-	2	3	-	-	-	-	-	3	4	6	6	3	2	1	-	34 0.87
C84 T-CELL LYMPHO	-	1	1	4	4	7	5	7	6	13	10	10	6	10	6	5	100 2.57
C85 OTHER NHL	2	1	1	3	3	1	1	4	6	5	5	3	2	3	4	1	27 0.69
C86 MULTIPLE MYELOMA	-	-	-	-	-	-	-	2	6	5	5	3	2	3	4	1	39 1.00
C91 LEUK. LYMPHO	27	17	12	10	16	7	7	1	2	10	9	16	7	3	11	10	74 2.09
C92 LEUK. MYELO.	3	2	8	9	6	16	9	1	2	8	4	4	3	0	2	-	131 3.37
C93 LEUK. MONOC.	1	-	-	-	-	-	-	-	-	12	5	9	6	6	8	3	51 1.29
C95 LEUK. UNK.	-	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2 0.05
	74	42	52	71	81	80	112	105	122	138	143	146	154	134	137	146	982 25.2

52

Table-14 : Hospital Cancer Registry - Trivandrum : Number of Cancer Cases 2000

Age by Site - Male

ICD10 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
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
C00 LIP	-	-	-	-	-	-	3	1	2	-	-	3	3	2	1	15	0.42
C01 BASE OF TONGUE	-	-	1	-	-	-	-	-	-	-	1	-	-	-	1	-	3 0.08
C02 TONGUE	-	-	-	-	-	1	7	7	9	11	14	16	25	12	14	12	128 3.38
C03 GUM	-	-	-	-	-	-	-	-	3	5	3	12	5	3	3	6	40 1.11
C14 FLOOR OF MOUTH	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2 0.06
C05 PALATE	-	-	-	1	-	-	-	1	-	-	-	1	1	1	2	1	8 0.22
C16 OTHER MOUTH	-	-	-	-	-	-	1	2	2	17	10	18	25	16	16	16	124 3.44
C07 PAROTID GL.	-	-	-	-	1	2	1	1	1	-	3	1	-	2	-	-	12 0.33
C08 SALIVARY GL.	-	-	-	-	-	-	2	1	2	-	-	-	-	-	-	-	5 0.17
C09 TONSIL	-	-	-	-	-	-	-	1	-	-	-	2	1	2	-	-	6 0.17
C10 OROPHARYNX	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	3 0.08
C11 NASOPHARYNX	1	-	1	3	3	1	-	1	2	1	-	1	1	-	1	-	18 0.44
C12 PYRIFORM SINUS	-	-	-	-	-	1	-	-	1	1	-	-	1	-	-	1	5 0.14
C13 HYPOPHARYNX	-	-	-	-	-	-	-	-	3	3	3	3	1	1	2	2	16 0.44
C15 OESOPHAGUS	-	-	-	-	-	1	2	-	3	4	3	8	9	14	5	6	56 1.53
C16 STOMACH	-	-	-	-	-	-	1	6	8	2	9	1	7	2	3	3	42 1.17
C17 SMALL INTEST.	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	2 0.06
C18 COLON	-	-	-	-	1	1	1	1	4	4	6	3	4	4	3	1	31 0.82
C19 RECTOSIGMOID	-	-	-	-	-	-	-	-	-	2	1	1	-	-	1	-	5 0.14
C20 RECTUM	-	-	-	-	2	3	3	3	4	8	4	4	9	7	4	7	55 1.53
C21 ANUS & ANAL C.	-	-	-	-	-	-	-	-	-	-	1	-	1	1	-	-	3 0.08
C22 UTERUS	1	-	-	-	1	1	1	3	1	2	1	2	2	3	1	1	20 0.56
C23 GALL. BLADD.	-	-	-	-	-	-	-	-	-	2	-	-	2	-	-	-	4 0.11
C24 OT. I. BILIA-RY	-	-	-	-	-	-	1	-	-	-	-	1	-	1	-	-	3 0.09
C25 PANCREAS	-	-	-	-	-	-	1	-	3	4	2	3	-	2	-	1	16 0.42
C30 NASAL CAV.	-	-	-	-	-	1	-	2	-	-	-	-	-	-	-	1	4 0.11
C31 ACCESSORY SIN.	-	-	-	-	-	-	2	2	-	-	-	1	2	3	1	-	11 0.31
C32 LARYNX	-	-	-	-	-	-	-	1	-	-	-	2	1	1	-	2	8 0.22
C34 LUNG	-	-	-	-	2	-	3	4	11	8	11	11	11	14	5	4	73 2.03
C37 THYMUS	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1 0.03
C30 HEART, MEDIA. &	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	2 0.06
C40 BONE OF LIMBS	-	-	9	7	1	-	3	-	2	-	-	-	-	-	1	-	23 0.64
C41 OTHER BONE	-	1	-	-	3	2	1	1	-	1	1	-	-	-	-	-	10 0.28

53

Table-14 Contd.

C43	SKIN, MF, A	1							6	0.25						
C44	SKIN, OTHER	1							22	0.67						
C47	PHIPPLINEURS	1							7	0.19						
C48	HLTROPHEL	1							3	0.23						
C49	CONN. TISS.	1							32	0.86						
C50	BREAST	4	7	3	135	203	145	15	133	3.11						
C51	VULVA	1	1	1	1	1	1	1	15	0.42						
C52	VAGINA	1	1	1	1	1	1	1	17	0.47						
C53	CERVIX	1	2	1	13	22	4	71	27	4.0						
C54.00	BODY UTRHUS	1	2	1	5	8	1	17	2	2.03						
C55	UTERUS NOS.	1	1	1	1	1	1	1	8	0.17						
C56	OVARY	1	4	1	2	3	24	2	230	8.05						
C57	OTH.FFM.GEN.O	1	1	1	1	1	1	1	5	0.14						
C58	P. ACENTA	1	1	1	1	1	1	1	1	0.03						
C64	KIDNEY	10	1	1	1	1	1	1	20	0.56						
C67	URIBLADDER	1	1	1	1	1	1	1	7	0.19						
C68	OTH UR:ORG.	1	1	1	1	1	1	1	1	0.03						
C69	LYE	10	1	1	1	1	1	1	15	0.42						
C73	MENINGES	1	1	1	1	1	1	1	7	0.19						
C74	BRAIN	9	9	2	7	12	2	7	23	2.17						
C75	NERVOUS SY.	2	2	2	2	2	2	2	1	0.03						
C73	THYROID G.	1	1	1	1	1	1	1	1	0.03						
C74	ADRENAL GL	1	1	1	1	1	1	1	31	0.84						
C76	ILL.DFL. SIT.	1	1	1	1	1	1	1	4	0.11						
C77	SEC. LYMPH. K	1	1	1	1	1	1	1	1	0.03						
C70	SEC. HLS. ETC	1	1	1	1	1	1	1	31	0.83						
C79	SEC. OTHER	1	1	1	1	1	1	1	6	1.69						
C81	PRM. LNK	1	1	1	1	1	1	1	42	1.17						
C87	HODGKINS D.	1	1	1	1	1	1	1	6	0.17						
C82	FOLLICULAR NH	1	1	1	1	1	1	1	12	0.33						
C83	DL. LUS. NHL	2	2	2	2	2	2	2	16	0.44						
C84	T-CELL LYMPHO	1	1	1	1	1	1	1	55	1.53						
C85	OTHER NHL	1	1	1	1	1	1	1	7	0.19						
C91	MULT. MYELOMA	1	1	1	1	1	1	1	22	0.61						
C97	LEUK. LYMPHA	10	10	10	10	10	10	10	12	1.17						
C92	LEUK. MYELO	2	2	2	2	2	2	2	27	2.00						
C93	LEUK. MONOC	1	1	1	1	1	1	1	96	2.39						
C95	LEUK. UNS.	1	1	1	1	1	1	1	3	0.19						
		66	23	47	53	53	138	105	272	323	416	406	331	168	171	3600

54

Table-15 : Hospital Cancer Registry, Trivandrum
Leading Sites of Cancer - 2000

ICD10	Site	No.	%	ICD10	Site	Males		Females	
						No.	%	No.	%
C00-C08	Oral Cavity	608	15.6	C50	Breast	1013	28.1		
C94	Lung	519	13.3	C53	Cervix	445	12.4		
C91-C96	Leukaemia	252	6.5	C00-C08	Oral Cavity	320	8.9		
C81-C85	Lymphoma, HD	239	6.1	C73	Thyroid	311	8.6		
C91-C92, C93, C94	Pharynx	238	6.1	C56	Ovary	290	8.1		
C00-C99	All Sites	3892		C00-C99	All Sites	3600			

Table-16: Hospital Cancer Registry, Trivandrum
System-wise distribution of Cancer Cases - 2000

3.0	Brain & Nervous System	2.2
23.2	Oral Cavity & Pharynx	10.7
2.7	Thyroid	8.6
20.3	Respiratory System	2.8
0.6	Breast	28.1
9.3	Esophagus & Stomach	2.7
8.1	Other Digestive Organs	3.9
2.4	Urinary Tract	0.8
3.1	Reproductive System	23.7
4.5	Bone, Conn. Tissue, Skin	2.9
6.5	Leukaemia	4.7
6.1	Lymphoma, HD	3.1
10.2	All Others	5.9
Male 3892	Total	7492
		Female 3600

55

2. Population Based Cancer Registry, Trivandrum

(Funded by: Cancer Society of Finland)

The registry provides 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 data for the years 1993-1997 has been published in the Volume 8 of Cancer Incidence in Five Continents, IARC, WHO.

Epidemiologic Research Projects

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

Investigators at RCC: Principal Investigator : Dr. Aleyamma Mathew

2. Cancer ATLAS in India

(Collaborator; National Cancer Registry Programme, Technical wing, supported by WHO)

Co-Investigator : Dr. Aleyamma Mathew

Clinical Research Programme

1. Pattern of Care and Survival studies of breast, cervix and oral cancers, Regional Cancer Centre, Trivandrum

(Collaborator; National Cancer Registry Programme, Technical wing, Bangalore)

2. End Result and Survival after Cancer Treatment of patients reported at Regional Cancer Centre, Trivandrum

(Funded by: Regional Cancer Centre, Trivandrum)

This project provides a summary index of the efficacy of the existing treatment modalities for various types of cancers and survival of cancer patients. Site-specific proformas were developed and the data abstraction is in progress.

Screening Programmes

1. Cervical Cancer Control Programme in Northern districts of Kerala

(Funded by: UNFPA)

The cancer control programme in northern districts of Kerala

such as Kannur, Kasargod and Wayand is continuing. Around 800 cancer awareness programmes and 600 cancer detection campaigns were conducted in the three districts and nearly 30,000 women were screened for cervical, breast and oral cancers.

2. Cancer control programme, Trivandrum

The Trivandrum Corporation has provided financial support for conducting a community based cancer control programme in the Corporation area. Health workers and other related personnel in different parts of the Trivandrum Corporation have received cancer control training. Around 20 cancer awareness programmes and 20 cancer detection campaigns were conducted in the above area.

3. Reproductive Tract Infection Control Programme by Pap smear Screening Among Tribal Women in Palakkad District

(Funded by: Kerala Research Programme on Local Level Development, Centre for Development Studies, Trivandrum)

Principle Investigator : Dr.Kalavathy.M.C

Trining Programme Organized

WHO-DGHS sponsored Cancer Registry Training Programme, Regional Cancer Centre, Trivandrum on 6-10 January 2003

Around 40 participants from other cancer registries/ cancer hospitals in the southern region of the country attended the programme. A handbook on some basic information on cancer registry methods as well as some necessary medical information for the registry staff was brought out.

Awards/ Nomination/ Fellowship/ Conferences/ Workshops

Dr.Aleyamma Mathew

1. Follow-up strategies and overall coordination of Hospital Cancer Registry, Trivandrum, Annual review meeting, National Cancer Registry Programme, Indian Council of Medical Research, NewDelhi, November 2002.
2. Fat, fiber, fruits and vegetables and the risk of colo-rectal adenoma, Indian Association of Cancer Research, Trivandrum, 9-12 January 2003.

3. *Invited Speaker*, WHO sponsored workshop for doctors on cancer control on oral, breast and cervical cancers, Regional Cancer Centre, Thiruvananthapuram, October 2002. An overview of epidemiology of cancer in India.
4. Organizing secretary & faculty. WHO sponsored workshop for doctors on cancer registration RCC, Ttivandrum. 6-10, January, 2003.
 - i. Cancer registration –with emphasis on Indian Scenario.
 - ii. Classification and coding of neoplasms.
 - iii. Follow-up and Surveillance,
 - iv. Cancer registries and cancer pattern in Kerala.

Dr. Kalavati MC

Post Graduate Course in Chronic Diseases conducted by World Health Organisation and Geneva Foundation For Medical Education And Research, (1st March 2002 to 11th April 2003).



WHO & DGHS sponsored Cancer Registry Training Programme

BASIC RESEARCH

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

The major goal of the research activities of the Research Division is to better understand the molecular and immunological mechanisms responsible for biologic heterogeneity in primary tumours and host susceptibility and to translate the advances into diagnostic and prognostic markers. The identification and utilisation of plant products and the mechanism of action of ayurveda drugs and its components are other areas of active research.

Molecular Biology of cancers: A model of oral carcinogenesis encompassing tissues ranging from normal through dysplasia to the three different types of squamous cell carcinoma has been proposed utilising the alteration in the expression of the major oncogenes, suppressor genes, proliferation genes, apoptotic genes and HPV presence. Some of the genes which have shown promise as markers such as p53, Rb, p16, cyclin D1, are being studied in detail. A database on these markers has been initiated under the National Task force on Oral cancer by DBT, Govt. of India in which our centre is one of the five centres in India. Studies are also going on to evaluate the potential of expression of DNA damage repair related proteins in predicting radiosensitivity in oral and nasopharyngeal cancers.

The attempts at elucidating the biology of GTD is continuing. Studies of cytogenetic features of haematological malignancies form a major area of investigation in this division.

Immunology of cancers: Mechanisms underlying impairment of T cell responses in oral cancer and cervix cancer is being elucidated. Efforts are also on to assess the potential of biologic mediators to reverse the immune impairment in these patients and to identify a subset of patients who could be benefited by biologic mediator therapy.

Plant products and evaluation of alternate systems of medicine: Lectins from locally growing plants are being isolated and studied for their applications in blood grouping, mitogenicity, and cell surface binding.

The ayurveda preparation, *Indukantha rasayana* has been shown to be a potent immunostimulatory and leucopoietic agent. The studies suggest its potential use as a lymphopoiesis stimulator in patients receiving chemotherapy.

Ongoing Research / doctoral programme

1. Genomic instability in breast cancer
2. Molecular biology of Gestational Trophoblastic disease
3. Molecular alterations in oral cancer with special emphasis on oncogenes and tumour suppressor genes
4. Adhesion protein as metastatic markers
5. T cell signal transduction in correlation with immune response and response to therapy in patients with cancer of the uterine cervix.
6. Molecular alterations in relation to radiation response in squamous cell carcinoma.
7. Analysis of molecular alterations of epidermal growth factor receptor in GTD
8. Immunomodulatory activities of Rasayana Indikantha Gritha in experimental animals
9. Rb protein and related genes in the regulation of cell cycle progression in oral cancer
10. p53 alterations in relation to habits in oral cancer

11. Molecular alterations and association with Human papilloma Virus in Nasopharyngeal
12. Genetic susceptibility studies in Breast/Ovarian cancer families
13. Genetic studies in Down syndrome patients with and without malignancies
14. Cytogenetic and Haematologic response studies of Alpha Interference therapy in chronic myeloid Leukemia patients
15. Cytogenetic studies in myelodysplastic syndromes
16. Cytogenetic and Molecular genetic studies in Acute Non lymphocytic Leukemias
17. Genetic susceptibility studies in lung cancer
18. Molecular genetic analysis of germline BRCA2 gene mutations and pathobiology of BRCA2 gene mutated
19. Genetic profile of fetal wastage -A hospital based study
20. Genetic determination of radiation response in uterine cervix cancer patients undergoing radiotherapy
21. Plant lectins and their applications in oncology
22. *Artocarpus integrifolia* lectin as a biological marker in hematological neoplasms
23. Isolation and purification of some plant lectins and its application in cytopathology
24. Anti-cancer studies in selected medicinal plants used in traditional and folklore medicine of Kerala with particular reference to the Western Ghats.
25. Multiparametric evaluation of radiation induced changes in the erythrocytes of cancer patients.
26. Studies on cell cycle regulatory proteins in oral carcinoma
27. Characterization of molecular alterations in p53 gene in oral carcinoma

28. Characterization of molecular alterations in INK4A/MTS-1/p16 gene in oral carcinoma
29. Characterization of molecular alterations in Cyclin D1 gene in oral carcinoma
30. Molecular studies on involvement of p14/ARF Gene in oral carcinoma

Courses conducted:-

1. Annual Immunology training (Two months) for M.D. Microbiology students, Medical College, Trivandrum
2. Training on Human Cytogenetic Techniques - B.Sc. MLT students - M.G. University
3. Lectures and practical demonstrations on Immunological techniques, Molecular biology techniques, human karyotype analysis etc. to students of M.Sc biotechnology, M.Sc Biochemistry, MBBS, B.Sc MLT, and B.Sc Biotechnology students of Kerala and MG Universities.

Patient related Investigations for clinical management:

1. Peripheral Blood Lymphocyte Karyotyping : 142
2. Bone marrow karyotyping : 420

Awards / Fellowship/Conferences attended / Papers presented

Dr. Prabha Balaram:

Awards:

Ksnanika Oration Award of the ICMR for the year 2000.

Referee for research Projects and Publications:

ICMR :	3
CSIR :	2
DST :	4
DBT :	2
STED :	2

Australasian Journal of Cancer: 4

Positions hold

Executive Committee member :- Indian society for Radiation Biology

Member :- Governing Body Amala Cancer Centre, Trichur.

Executive Member :- Indian Association of Biomedical scientists

Executive Member :- Indian Association for Cancer Research

Conferences attended

1. Indian Association of Cancer Research, 22nd Annual Convention & International symposium on Recent Advances in Cancer causes and Control. January 10-12, 2003, Thiruvananthapuram, Kerala.
2. World Ayurveda Congress 2002 1-4 November 2002, Kochi, Kerala.

Dr. Ravindran Ankathil:

1. 22nd Annual Convention of the Indian Association of Cancer Research and International Symposium on Recent advances in cancer causes and control. January 10-12, 2003 Trivandrum.
2. ONCON 2K3. Regional Conference of the Indian Society of Oncology, March 8-9, 2003 Hyderabad.

Dr. Remani P

1. National seminar on Medicinal plants. Thiruvananthapuram. August 12, 2002.
2. World Ayurveda Congress, Kochi, November 1-4, 2002. *Artocarpus hirsuta* agglutinin as a histochemical marker for the diagnosis of cancer.
3. WHO workshop for doctors on cancer control. Thiruvananthapuram. October 28-29, 2002.
4. 22nd Annual convention of the Indian Association of cancer Research. Thiruvananthapuram. January 10-12, 2003.
5. 15th kerala science Congress. Thiruvananthapuram. January 29-31, 2003.

Dr. Kannan.S

15th Kerala Science Congress, Thiruvananthapuram, January 2003

Hariharan. S

1. Cytogenetic and Haematological response studies of alpha-Interferon therapy in CML patients. 22nd Annual Conference of the Indian Association for Cancer Research and International Symposium on Recent Advances in Cancer Causes and Control. Thiruvananthapuram 10-12 January 2003.
2. Chromosome analysis of Acute & Chronic Myeloid Leukaemias. Fifteenth Kerala Science Congress, Thiruvananthapuram, 29-31 January 2003.
3. Oncology Haematology -2003. Workshop on Cytogenetics and Molecular Cytogenetics. Tata Memorial Hospital, Mumbai, 8-16 February 2003.
4. Cytogenetics training. Fluorescence In Situ Hybridization and Br-PCR, Tata Memorial Hospital, Mumbai 8-29 August 2003.

LABORATORY MEDICINE AND TUMOR BIOLOGY

Dr M. Radhakrishna Pillai - Additional Professor

The Division continues to register sustained growth and leads cell and molecular biology cancer research. With continuous funding and newer research programs, this research division is now nationally and internationally recognized as a leading productive unit.

1. Human papillomavirus (HPV) research program continued to be the bread and butter of this division. The program, which includes functioning as the national coordinating center for a multi-centric HPV research program of the Department of Biotechnology, Government of India, has expanded into the new area of nutri-genomics. We have described the expression of folate receptors and heterogeneous nuclear ribonucleoprotein E1 in women with human papillomavirus mediated transformation of cervical tissue to cancer.
2. The anti-cancer and anti-viral drug development program on characterizing newer molecules with anti-cancer and anti-viral activity received a significant boost by getting a biotechnology career development award to develop anti-cancer and anti-viral drugs from plant derived bioactive compounds, in addition to ongoing funding. In addition we are carrying out pre-clinical pharmacogenetic evaluation of two anti leukemic agents.
3. We have provided the first database for the molecular epidemiology of sporadic breast cancer by identifying variations in several low penetrance breast cancer susceptibility genes in Indian women and their potential effects on breast cancer risk. We have shown how this genetic profile of breast cancer patients influences levels of estrogen production, its metabolism and contributes to treatment outcome.
4. The role of xenobiotic metabolizing genes in the molecular epidemiology of tobacco associated oral cancer has been described by us. This work is funded by the Department of Biotechnology as part of the National Task force on Oral Cancer.

5. We have explained the role of various matrix metalloproteinases in the development of oral cancer.

Individual Achievements :

Dr Radhakrishna Pillai was awarded the Sandoz Oration Award by the Indian Council of Medical Research for outstanding cancer research in 2002. Dr Pillai was also awarded the prestigious Biotechnology Career Development Award by the Government of India. Dr Pillai was also elected as Fellow of the Royal College of Pathologists, London.

Conferences organized

Dr Radhakrishna Pillai was the organizing secretary for the 22nd Annual Convention of the Indian Association of Cancer Research & International Symposium on Recent Advances in Cancer Causes and Control. This meeting has been termed as the best cancer research meeting held in India.

The division is an important training center in cell and molecular biology for postgraduate students from various colleges. This year one BTech and 10 M Sc Biotechnology & Biochemistry theses were done in the division.

Ongoing research projects :

1. Susceptibility to childhood acute lymphoblastic leukemia : influence of CYP1A1, CYP2D6, GSTM1 & GSTT1 genetic polymorphisms. Council of Scientific and Industrial Research, 1999-2002.
2. Significance of programmed cell death in pediatric acute lymphoblastic leukemia. Dept of Science & Technology, Govt. of India, 2000-2003.
3. Metalloproteinase gene activation during tumor progression in the oral mucosa. Indian Council for Medical Research, 2000-2002.
4. The role of telomere fragment lengths and telomerase activation during tumor progression in the uterine cervix.

Kerala State Committee for Science, Technology & Environment, 2000-2002.

5. Estrogen receptor gene polymorphism in Indian breast cancer and response to tamoxifen treatment. Kerala State Committee for Science, Technology & Environment, 2000-2002.
6. Fund for Improvement of Science & Technology Infrastructure in Universities and Higher Educational Institutions. Dept of Science and Technology, Govt. of India, 2000 - 2005.
7. Chemotherapy response in osteosarcoma: role of intrinsic cellular factors. Indian Council for Medical Research, 2001 - 2003.
8. Polymorphism in CYP1A1, GSTM1 and XRCC1 genes and susceptibility in oral cancer. Dept. of Biotechnology, Govt. of India, 2001 - 2004.
9. Human papillomavirus E6, E7 and p53 gene polymorphism in Indian cervical carcinoma. Indian Council for Medical Research, 2002 - 2004.
10. Cellular and molecular manifestations of natural plant compounds on human papillomavirus infected cells. Indian Council for Medical Research, 2002 - 2004.
11. Ras gene mutation and tumor response to radiation therapy. Kerala State Committee for Science, Technology & Environment, 2003 - 2004.
12. Cellular pharmacology of anti-tumor and anti-viral activity of curcumin against cervical cancer. Council of Scientific and Industrial Research, 2003 - 2006.
13. Molecular markers for the detection and progression of cervical cancer. Department of Biotechnology, 2003 - 2006.

CLINICAL LABORATORY SERVICES

C. Gangadevi - Technical Officer

Clinical Laboratory services provide round the clock service. On an average 450 samples per day (both inpatients and outpatients) are examined. Test results are sent through computer network to all the wards. Analyser flagged results are manually scanned by the technicians to provide accurate results.

Hematology Section is provided with fully automated Coulter genius (Seac) and Coulter T-series and also coagulation analyser. In the Biochemical section, there are semi automated Wet chemistry analyser E-Merck and SLIM and two fully automated Dry Chemistry analyser from Johnson & Johnson which can carryout for 750 tests/hr.

Quality Control:

Quality control check for hematology and bio chemistry investigations is from BIO RAD laboratories, California, which is accepted by World Health Organisation.

Training:

Training is provided for B.Sc. MLT students from Mahatma Gandhi University and B.Sc., M.Sc. Bio chemistry students from various universities.

Table 17 : Investigations carried out during the year 2002-2003

Biochemistry Investigations	No.	Haematology Investigations	Nb.	Special Investigations	No.	Urino analysis	No.
Sugar	30533	Haemoglobin	89154	Electrophoresis	438	Colour	124
Urea	29150	Total count (WBC)	87039	Ig assay	606	Reaction	243
Creatinine	29829	Platelet count	86487			Sp. Gravity	152
Uric acid	11498	Bleeding time	3903			Albumin	6166
Bilirubin	18589	Clotting time	3922			Sugar	6629
SGOT	19379	Prothrombin time	693			Acetone	918
SGPT	21157	time	198			BJP	243
SAP	17134	APTT	2924			Bile pigment	110
Total protein	8543	PCV	4025			Bile salt	101
Albumin	8330	ESR	404			Urobilinogen	58
Globulin	8329	RBC	17672			Deposit	5952
Calcium	7900	Differential count	55				
Phosphorous	656	Refics					
Amylase	128						
LDH	3237						
Sodium	12554						
Potassium	12582						
CCT	5102						
Cholesterol	382						
Total	245012	Total	296476	Total	1044	Total	20696

LIBRARY AND INFORMATION SERVICES

Mr. M.Chandrakumaran Nair - Senior Librarian

Significant work accomplished during the report period was the initiation of digitization of library resources and introduction of intranet access to Current Awareness Services. Library facilitated the end user online access to the following existing hard copy services on the campus wide network.

- i) Current Contents (Contents pages of newly arrived current journals)
- ii) Onconews (Press clippings on oncology and related subjects)
- iii) Conference Alert (Information on forthcoming conference/workshops at regional/national/international levels)
- iv) Reprints (Bibliographic information on the newly received reprints)
- v) Books and monographs on display (Recently acquired)

Taking advantage of digitization, these services are being updated daily or at short intervals.

Electronic access to journals

Online access to full text of 35 journals received in the library in print and also a few other electronic journals was made available on the nodes of library sub LAN.

Library received 108 journals, most of which are international, 523 books, monographs and back volumes, 520 reprints (other than those appeared in the journals received in the library) were added during the period, in addition to a few non-print materials.

Conference/Workshops attended

M.Chandrakumaran Nair

1. Elected to the Board of Studies to the Faculty (Library and Information Services) of the University of Kerala for a period of three years from 31.10.2002.
2. 48th Annual convention of Indian Library Association from 21.1.2003 to 25.1.2003 at National Institute of Mental Health and Neuro Sciences, Bangalore.

INFORMATION SYSTEMS

Mr. Manoj G - Jr. System Analyst

The division continues to support the computerization activities of the Centre. Maintains about 130 personal computers and 4 servers with Sco Unix, Linux and Windows 2000 Operating Systems in the network. Ingres and Oracle are used as database.

New Applications implemented:

Surgical Oncology

A new GUI based application programme was developed for the Surgical appointment, theatre scheduling, OT notes and treatment summary preparation is done through the new application. This data is also available in the intranet, so that doctors can view the surgical calendar and treatment summary online.

Teletherapy Treatment Management System

Developed generalized software for routine teletherapy calculations.

Computerisation of Administrative Office

Payroll Automation

A new application for payroll was developed. Apart from routine salary calculations, income tax, professional tax, bonus can be automatically calculated from the new application. Various reports like EPF, Form -16, recoveries etc. can be generated. Salary details are now available online through the intranet, so that every one can view their own salary details.

Administration

The confidential reports of academic staff are computerized. It consists of 4 parts, first part filled from the administrative office, second by the staff third by the head of department and fourth by the Director.

Other Activities:

The division also maintains the database of members of Cancer Care for Life (Scheme II & III) and also issues membership certificates.

Project guidance is given to B.Sc (Computer Science), M.Sc (Computer Science) and PGDCA students of various affiliated colleges

COMMUNITY ONCOLOGY

Dr. Ramani Wesley - Associate Professor

Dr. Gigi Thomas - Assistant Professor

The major activities of this division are centered around human resource development, primary and secondary prevention of common cancers through cancer education, detection camps and early detection clinic functioning in RCC.

1. Human Resource Development

a) Professional education and training:

Trainer trainee programmes were given to 272 doctors, 286 nurses, 1568 health workers, 2395 ICDS workers, 4384 teachers and student representatives, 1776 religious leaders and 163 Sociologists.

International School of Colposcopy

252 doctors, 16 nurses, 15 paramedicals and 41 technicians from various regions like Hyderabad, Nepal, Manipal, Coimbatore, Dindigal and Kerala were given training in colposcopy and treatment of preinvasive lesions of cervix and low cost cervical cancer detection strategies.

b) Public education

Through 71 cancer education programmes 15841 persons were trained using audio visual slides and LCD projection as follows.

Table-18:Details of Cancer Awareness programmes conducted

Sl.No	Categories	No. of programmes	No. trained
1.	Nurses	6	286
2.	Doctors	3	272
3.	Healthworkers	9	1568
4.	Community Volunteers and ICDS workers	3	2395
5.	Student representatives & teachers	8	4384
6.	Bank/Factory/ Company workers	6	856

7.	Commercial sex workers	2	665
8.	Religious leaders/members	9	1776
9.	Sociologists	2	163
10.	Laypublic	73	3428
Total		71	15841

2. Generation and distribution of health education materials

a) About 210 slides, photo albums on colposcopy, a CD, and one video were prepared for training. The health education materials generated during previous years were distributed among community volunteers and other target groups.

b) Exhibitions

Fourteen exhibitions were conducted which were viewed by around three lakh people the majority being school and college students.

c) Training Manuals, Modules and Atlas

Teaching manual for health workers, handbook for doctors, two booklets, 5 articles in laypress, and 4 posters were prepared.

3. Antitobacco programmes and campaigns

Tobacco awareness was given to 15,841 persons through 71 programmes. In connection with the 'World No Tobacco Day' held on 31/05/2003, a programme was aired in the All India Radio based on the theme 'Tobacco Free Sports' by Dr. Ramani S Wesley. The Community Oncology Division observed a 'World No Tobacco Week' in association with Regional Cancer Association, Trivandrum and as part of the programme, classes were conducted for various sections of the society. The programmes were conducted for health workers in the Directorate of Health Services in which 350 health workers participated. Similar programmes were also conducted for 110 bank employees in the Canara Bank employees hall and 150 factory workers of Titanium industry, Trivandrum.

4. Religious leaders in Cancer Control

Apart from conducting awareness programmes for various organizations, Community Oncology Division had conducted tobacco

and awareness programmes for religious leaders, keeping in mind their influence on the people from their respective religions.

5. **NGOs and residence associations in cancer control**

3428 people from various NGOs and residence associations were empowered and screened for common cancers through 25 programmes.

6. **Screening of commercial sex workers**

665 commercial sex workers were screened through a project organised by KISS (Kovalam Intervention Project for Safe Sex)

7. **Early cancer detection clinic, Dysplasia clinic, Colposcopy clinic and Breast screening clinic**

A total of 9984 persons with warning signals of cancer were evaluated. In the colposcopy clinic, 4111 colposcopies, 437 colpo directed biopsies, 3100 papsmears, 10 LEEP diathermic excisions and 94 cryotherapies were done for cervical precancers. In the Breast screening clinic propagation of breast self examination and clinical evaluation of breast disease and referral for mammography were done.

8. **Peripheral Early Cancer Detection Programmes through ECDCs, Janakeeya Asoothranam programs and Village level Cancer Control Programmes**

Early Cancer Detection Clinics (ECDC)

The peripheral centres and nodal centres are referring patients with precancers and cancers to the ECDC of RCC for confirmation of diagnosis, colposcopy, LEEP, cryotherapy etc. Technical guidance and assistance are also given for the nodal centres of RCC. The main stay of peripheral cancer detection programmes was through 62 cancer detection camps through which 9984 people were screened.

9. **Ongoing research projects:**

1. Performance characteristics of conventional cytology and visual examination after dilute acetic acid(VIA) or Lugol's iodine application (VILI) and HPV testing by Digene in the early detection of cervical neoplasia Kerala, India

Principal Investigator Dr. Ramani.S.Wesley



Inauguration of WHO Workshop on life-style related diseases by Shri. Nalakashu Soopy, Hon'ble Minister for Education, Govt. of Kerala



Inauguration of Training Programme for Doctors on Cancer Control by Shri. P. Shankaran, Hon'ble Minister for Health, Govt. of Kerala

2. Cervical Cancer Control Project (Funded by Bill Gates Foundation, U.S.A)
Principal Investigator Dr.Ramani.S.Wesley
3. Evaluation of VILI, VIA and VIAM in the Early Detection and Prevention of Cervical Neoplasia in collaboration with WHO/ IARC, Lyon, France (Funded by Bill Gates Foundation through ACCP)
Principal Investigator Dr.Ramani.S.Wesley
4. Prevention and control of cancer disease in the tribal population of Kerala State (funded by Tribal Development Department, Government of Kerala)
Chief Investigator C.Sreekumar

Books and manuals prepared.

1. A handbook on cancer control. Editor – Dr.Ramani Wesley. Prepared for the training of Medical Officers in Cancer Awareness and Control sponsored by World Health Organisation and DGHS.
2. A teaching manual on Visual Inspection using Acetic Acid (VIA) and Visual Inspection using Lugol's Iodine (VILI) for health workers by Dr.Sankaranarayanan and Dr.Ramani Wesley.
3. A manual on Life style related diseases for school teachers, students and Parent Teacher's Association, Editor – Dr.Ramani Wesley.
4. A booklet for youths on tobacco related diseases. Editor – Dr.Ramani Wesley

Workshops Organized

Two WHO workshops, one for doctors and other for school teachers were conducted.

E.C.D.C., PALAKKAD

Dr. I.B. Sulekha - Medical Officer

The early cancer detection centre, Palakkad - one of the peripheral centre of Regional Cancer Centre, Trivandrum, offers facilities for cancer awareness, early cancer detection, pain and palliative care and periodic follow up for cancer patients. This is the only institute in Palakkad, where tribals and sex workers are screened regularly. Cancer awareness classes, slide shows and cancer detection camps for 3 different population groups were conducted.

1. People coming to District Hospital, Taluk Hospitals, Primary Health Centre and other private Hospitals.
2. People from tribal areas like Agali, Sholayoor, Pudur, Attappadi and Walayar.
3. People from industrial area working in different companies and those residing near the industrial area.

A total of 30 cancer awareness classes and 22 cancer detection camps were conducted in association with Intervention for sex health and other sponsors during the year. Among this eight camps were conducted in tribal areas Vadhyaarchalpa, Mangalamthumchalla, Nacupathy Chellankavu, Ayyappanpotta, Malayan kavu, Kollankunnu and Govindapuram.

Slices brought from Akathethara PHC is processed in ECDC Palakkad

Total: Number of persons screened	:	6,859
Number of persons screened in the centre	:	2,651
Number of persons screened in the camp	:	4,208

Table-19: Details of Cytological Specimens : 2002-2003

Specimen	ECDC	Camp	Total
Cervical Smears	446	482	928
Oral smears	89	42	131
Sputum	137	-	137
Breast (FNAC)	55	15	70
Thyroid(FNAC)	19	13	32
Lymphnode(FNAC)	21	2	23
Nipple discharge	2	-	2
Fluids	2	-	2
Other sites	16	1	17
Total	787	555	1342

Table-20: Analysis of Gynecological Specimens : 2002-200

Lesion	Centre	Camp	Total
Normal	146	300	446
Inflammation	157	170	327
T.V infection	34	55	89
Fungal infection	1	1	2
H.S.V. infection	31	34	65
HSV - α dysplasia	7	4	11
Endocervicitis	24	25	49
Squamous metaplasia	-	18	18
Mild dysplasia	11	17	28
Moderate dysplasia	2	-	2
Glandular cell atypia	8	9	17
Severe dysplasia	3	2	5
Ca- in -situ	3	3	6
Invasive Squamous cell carcinoma	10	4	14
Poorly differentiated ca	2	-	2

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Non-academic Staff Strength

Administrative Staff

Position	No	Position	No
Registrar	1	Cashier Gr.I	2
Controller Of Finance	1	Cashier Cum Receptionist	1
Administrative Officer	1	Telephone Operator Cum Reptlst.	1
Finance Officer	1	Clerk Gr.I	8
Administrative Officer (Clin.Ser)	1	Clerk	1
Accounts Officer	1	Typist Gr.I	1
Asst. Public Relations Officer	1	Dark Room Assistant	1
Asst. Administrative Officer	1	Driver Gr.I	3
Asst. Accounts Officer	1	Driver Sr.Grado	1
Asst. Purchase Officer	1	Senior Helper	18
Secretary to Director	1	Senior Animal House Keeper	2
Sergeant Gr.I	1	Despatcher	2
Senior Office Assistant	1	Helper	4
Junior Personal Assistant	5	Security Guard Gr.I	1
Office Assistant Sr.Gr.	2	Security Guard	17
Office Assistant	3	Gardner	1

Technical and Scientific Staff

Position	No	Position	No
CNO & Assoc.Prof. Of Nursing	1	Anaesthesiologist	1
Scientific Officer Gr.I	1	Resident Medical Officer	3
Senior Scientific Asst.	1	Jr.System Analyst	1
Medical Records Officer	1	Library Assistant	2
Cytotechnologist.Sr.Gr.	3	Lab Technician	2
Technical Officer	4	Dietitian	1
Nursing superintendent	2	Staff Nurse,Gr.I	8
Nursing Supervisor	2	Staff Nurse	143

Radiographer Sr.Gr	19	Protocol Nurse	1
Senior Radiographer	1	Radiographer	7
Lab Technician Sel.Gr	1	Lab Technician Sr..Gr.	8
Head Nurse,Gr.I	1	Pharmacist	1
Head Nurse	13	Social Investigator,Gr.I	1
Head Nurse & Clinical Instructor	1	Social Investigator	1
Cytotechnician Sr.Gr	2	Mould Room Technician Sr.Gr	1
Cytotechnologist	4	Anaesthesia Technician Gr.I	1
Senior Lab Technician	1	Theatre Technician	
		Anaesthesia	1
RFA Technician Gr.I	3	Data Entry Operator	3

Engineering Staff

Position	No
Chief Maintenance Engineer	1
Maintenance Engineer	1
Supervisor (Electrical) Gr.I	4
Electrician	3
Electronic Technician	1

Best Wishes

RCC BID FAREWELL TO THE FOLLOWING STAFF DURING 2002-2003

1. Dr. Rafeeka Beegum
Additional Professor of Radiotherapy
2. Sri. N. Sadasivan Nair
Senior Grade Radiographer
3. Smt. Aleyamma M Kunnappally
Head Nurse
4. Sri. G. Gnaneswaran
Accounts Officer

RCC wish them a happy and prosperous life



Dr. Omi, Director, Western Pacific Region, WHO speaking on non-communicable disease at the RCC



Visit of Dr. (MS) Beatrice Wabudeya, Hon. Minister of State for Primary Health Care, Govt. of Uganda on 29.10.02



Visit of His Excellency Dr. Kebede Tadesse, Minister for Health, Federal Democratic Republic of Ethiopia on 25.9.02

ACCOUNTS
2002-2003

REGIONAL CANCER CENTRE SOCIETY,
BALANCE SHEET

TRIVANDRUM (Reg. No. 567/81)
ON 31st MARCH 2003

PREVIOUS YEAR Rs.	PS.	SCH	LIABILITIES	CURRENT YEAR	
				Rs.	Ps.
396258777.29		I	CAPITAL FUND	409,575,224.29	
2202038.12		II	SPECIFIC FUNDS	2,516,413.12	
6047536.00			UNUTILISED GRANTS	5,690,949.00	
1378042.95			STAFF WELFARE FUND	1,303,021.95	
38572342.10			CCI. FUND	38,585,267.10	
800829.46		III	ADV. RECEIVED FOR RESEARCH PROJECTS	506,117.00	
69339684.67		IV	SECURED LOANS	70,804,486.00	
			<u>CURRENT LIABILITIES AND PROVISIONS</u>		
11744237.70		V	CURRENT LIABILITIES OTHERS	12,190,844.07	
17921198.85		VI	CREDITORS FOR GOODS SUPPLIED	25,028,846.20	
179587133.15		VII	PROVISION FOR DEPRECIATION	1,98,802,512.18	
		XVI	SIGNIFICANT ACCOUNTING POLICIES		
		XVII	NOTES FORMING PART OF ACCOUNTS		
7,239,08650.30			TOTAL	760,481,610.09	

PREVIOUS YEAR Rs.	PS.	SCH	ASSETS	CURRENT YEAR	
				Rs.	Ps.
358576556.24		VII	FIXED ASSETS	375,972,702.80	
10485470.06			CAPITAL WORK IN PROGRESS	1,516,421.70	
47287575.00		VIII	INVESTMENTS	51,364,805.00	
			<u>CURRENT ASSETS AND LOANS, AND ADVANCES</u>		
7473781.27		IX	CLOSING STOCK	7,455,758.18	
4156484.52		X	ADVANCES TO PROJECTS	3,596,510.32	
10582535.14		XI	ADVANCES - OTHERS	9,408,306.59	
11375858.00		XII	INVESTIGATION FEES RECEIVABLE	11,223,809.00	
1037824.82		XIII	BALANCE WITH BANKS	3,046,770.82	
537532.71		XIV	CASH IN HAND	215,536.13	
275624952.54		XV	INCOME & EXPENDITURE A/C	294,794,018.73	
723908650.30			TOTAL	760,481,610.09	

As per our report of even date attached

Place : Trivandrum

Date : 31-07-2003

K. RADHAKRISHNAN NAIR
CONTROLLER OF FINANCE

Dr. M. KRISHNAN NAIR
DIRECTOR

VISHNU RAJENDRAN & CO.
CHARTERED ACCOUNTANTS
MEMBERSHIP NO. 201101

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

**TRIVANDRUM (Reg. No. 567/81)
FOR THE YEAR ENDED 31st MARCH 2003**

PREVIOUS YEAR Rs.	SCHE- DULE Ps.	EXPENDITURE	CURRENT YEAR	
			Rs.	Ps.
6816983.76	A	Opening Stock	7473781.27	
41256129.68	A	Purchases	45843415.26	
94545000.18	B	Salaries and Allowances	88856299.33	
589472.00		Uniform and Liveries	150737.00	
329621.00	C	Rent, Rates & Taxes	290731.00	
1089805.01	D	Postage, Telephone & Telegrams	868810.01	
579131.60	E	Travelling Expenses	802389.00	
1186088.40	F	Printing & Stationary	1374010.35	
91878.00		Advertisement Charges	87315.00	
8311687.00	G	Electricity and Water Charges	9674130.00	
45000.00		Remuneration to Auditors	166300.00	
4664495.27	H	Repairs & Maintenance	4326552.25	
932871.00	I	Service Contract Charges	1305670.00	
6317816.15		Interest & bank Charges	8915313.46	
64350.00		Conference/Seminar/Workshop	202483.00	
227813.00	J	Computer Expenses	167516.00	
7359.00		Books & Periodicals	4602.00	
0.00		Bad Debts written off	800413.00	
1404153.00		Expenses to NTR	1209219.00	
475360.00	K	Miscellaneous Expenses	498329.94	
20293315.63		Depreciation	19517060.00	
181147160.58	TOTAL		192,815,451.36	

PREVIOUS YEAR Rs.	SCHE- DULE Ps.	INCOME	CURRENT YEAR	
			Rs.	Ps.
40358454.00		Grant - in - aid ; Govt of Kerala	38108285.00	
258819.00		Grant - in - aid ; Govt of India	669157.00	
75862127.00		Investigation Fees	92150568.00	
26758263.75		Medicine Receipts	32376184.00	
194044.00		Interest Income	805714.00	
393544.00	L	Training fees	166904.00	
523071.00	M	Miscellaneous Income	790949.70	
0.00		Profit on sale of Asset	54442.00	
7473781.27		Closing stock	7456768.18	
29333258.76		Excess of expenditure over income	20,22,5779.48	
181147160.58	TOTAL		192815451.36	

K. RADHAKRISHNAN NAIR
CONTROLLER OF FINANCE

Dr. M. KRISHNAN NAIR
DIRECTOR

Place : Trivandrum
Date : 31-07-2003

As per our report of even: date attached

VISHNU RAJENDRAN & CO.
CHARTERED ACCOUNTANTS
MEMBERSHIP NO. 201101

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

PREVIOUS YEAR		EXPENDITURE	CURRENT YEAR	
Rs.	Ps.		Rs.	Ps.
96000.00		Salaries & Allowances	95000.00	
3000.00		Advt. & Publicity	10000.00	
51317.00		Fuel charge	57768.00	
14234.00		Maintenance & spare parts	3435.00	
4409706.95		Reimbursement to Patients	5777317.00	
8050.00		Printing and Stationery	0.00	
7539.00		Insurance Charges	0.00	
-2193017.93		Excess of Income Over Expenditure	1056713.29	
2390879.02		TOTAL	7001231.29	

K. RAJAKRISHNAN NAIR
CONTROLLER OF FINANCE

D. M. KRISHNAN NAIR
DIRECTOR

Place : Trivandrum
Date : 31-07-2003

**TRIVANDRUM (Reg. No. 567/81)
FOR LIFE SCHEME
FOR THE YEAR ENDED 31st MARCH 2003**

PREVIOUS YEAR		INCOME	CURRENT YEAR	
Rs.	Ps.		Rs.	Ps.
2390879.02		Interest on FD & Investments	7001231.29	
2390879.02		TOTAL	7001231.29	

VISHNU RAJENDRAN & CO.
CHARTERED ACCOUNTANTS
MEMBERSHIP NO. 201101

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

**- VII
TRIVANDRUM (Reg. No. 567/81)
AS ON 31st MARCH 2003**

ITEM	Gross Block				DEPRECIATION					
	Cost on 1.4.02	Additions 31.3.2003	Deduction	Cost on 31.3.2003	Up to 31.3.02	Additions	Adjustment	Total upto 31.3.2003	As on 31.3.2003	NETBLOCK As on 31.3.03
BUILDINGS, OLD	830110.25			860110.25	483801.43	16875.00		801476.43	358639.82	377508.82
BUILDINGS	28618612.38	1308565.00		30924277.08	13170191.66	887960.00		14058151.66	16871225.40	16448620.40
PULLINGS, RT	17084820.70			17084820.70	8234499.1	548002.00		6777471.10	10317029.60	10860031.60
BUILDING PHASE I	80407812.89	10465470.00		90873282.89	21110441.5	3481132.00		24601573.50	68331509.55	59357171.49
BOUNDARY WALL	127116.63			127116.63	65126.14	3104.00		86226.14	58892.49	61992.49
BUILDING - COBALT UNIT	975547.00			975547.00	48767.35	46329.00		95096.35	860259.85	926579.65
COBALT UNIT	12001670.30	180577.00		18291436.30	2832033.75	2208913.30		5120946.75	12870508.55	14072844.55
WATER SUPPLY AND DRAINAGE	2114580.43			2114580.43	1564539.12	82507.50		1647046.12	467540.31	550047.31
FURNITURE AND FITTINGS	6317165.43	944724.00		9561873.43	4642203.22	491960.00		5134243.22	4427636.21	3874872.21
OFFICE EQUIPMENT	2151055.43	406740.00		2857635.43	1337788.51	183023.00		1520789.51	1637015.92	813269.92
HOSPITAL & LAB EQUIPMENTS	159267661.97	7369820.00	338239.00	16311071.07	68886206.85	8708081.00	301081.00	75293508.85	38017563.12	37401473.12
ELECTRICAL INSTALLATION	37035694.80			37035694.80	35185425.27	1777539.00		26962964.27	10072720.63	11850259.63
FIRE DETECTION	384120.00			384120.00	2557205.06	192587.00		2749792.06	1091327.94	1283914.94
AIR CONDITIONING	16855404.05			16855404.05	12530244.54	617424.00		1315688.54	3498735.81	4116189.81
COMPUTER HARDWARE AND SOFTWARE	3155725.00			3155725.00	2890349.96	109150.00		2996499.96	159225.04	28373.04
GAS AND CYLINDER	6613157.05			6613137.05	4835376.35	541884.00		4677039.35	1986087.70	2277761.70
VEHICLES	782581.80			782581.80	274529.87	97610.00		372139.87	390442.23	488052.23
LIBRARY BOOKS AND JOURNALS	12154913.16	1051340.00		13206253.16	5009114.46	1229571.00		6238685.46	6967567.69	7145798.59
LIFT AND ELEVATOR	5813240.00			5813240.00	4202285.83	255643.00		4458928.83	1454311.17	1710954.17
ASSETS (DONATIONS)	337812.00			337612.00	283363.05	11137.00		274500.06	63111.95	74248.95
TELEPHONE EQUIPMENTS	286729.00	6391.00		293120.00	1955701.64	140873.00		2096574.64	798844.38	831488.38
TOTAL	355,376,556.24	21732385.08	338239.00	376,972,702.30	178,587,133.16	19517060.00	301681.80	198,802,512.16	178,170,190.14	175,989,423.08

Vishnu Rajendran & Co

Chartered Accountants 306 Kailthayil Buildings, T.B. Road
P.B. No. 227 Kottayam - 686 001
E-mail : vrandco@sancharnet.in
Ph 0481 - 2581999, 2301999, 3105223

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, 2003 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 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 the informations 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 accounts maintained by the Society.
5. In our opinion and to the best of our information and according to the explanations given to us and subject to *the fact that the balances of items classified under schedule VI creditors for goods supplied, schedule X advance to projects, Schedule XI advances - others and Schedule XII investigation fees receivable are not confirmed*, we report that
 - a. 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 31/03/2003 and;
 - b. 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 31/03/2003.

For Vishnu Rajendran & Co,
Chartered Accountants
P.A. Joseph M.Sc., FCA. (Partner)
M.No.201101

Thiruvananthapuram
31/07/2003

SCHEDULE - XVII

NOTES FORMING PART OF THE ACCOUNTS

1. Out of the grant received from Government of Kerala during the financial year 2002-2003 amounting to Rs.385.60 Lakhs, an amount of Rs. 4.51 lakhs have been transferred to Capital Fund representing Fixed Assets acquired or constructed during the year and the balance of Rs.381.09 Lakhs, have been treated as Revenue and taken to Income and Expenditure Account.
2. Claim made by the Executive Engineer, Special Building, PWD amounting to Rs.3,45,615/- and claim made by the Corporation of Trivandrum, vide their Ir.Nos. D.O No.R9-2362/94 (69) D: 13/07/2001 for a total amount of Rs.90,26,490/- towards the Property tax liability for the period up to 30-9-2002 are treated as contingent liability.
3. Bank Interest received during the year under Cancer Care for Life Scheme Deposits includes interest to the extent of Rs. 3014405/- attributable to the previous year and so the current year income is over stated to that extent.
4. A sum of Rs 800413/- 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.
5. Specified funds amounting to Rs.25,16,413.12, classified under Schedule II to the Balance Sheet represents amounts received for specific purposes from different sources. However, expenses incurred against these funds during earlier years were not matched against these funds properly.
6. Previous year figures have been re-grouped and re-cast wherever necessary to suit the current year's layout.

for Vishnu Rajendran & Co.
Chartered Accountants

K. Radhakrishnan Nair
Controller of Finance
Regional Cancer Centre
Medical College Campus
Thiruvananthapuram.

Dr. M. Krishnan Nair
Director
Regional Cancer Centre
P.O. Box 2417
Medical College P.O
Trivandrum - 395 011

For Vishnu Rajendran & Co
Chartered Accountants
P.A. Joseph M.Sc., FCA.
(Partner)
M.No. 201101

SCHEDULE - XVI

SIGNIFICANT ACCOUNTING POLICIES

1. The Financial Statements are prepared on historic cost convention method.
2. Fixed Assets are accounted for at cost less depreciation. Depreciation is provided at the rates as evaluated by the management and on written down value method. Full depreciation for the year is provided at in respect of additions.
3. Chemicals, medicines and consumable stores are valued at cost.
4. Grant from Governments are accounted, based on the sanction received.
5. Contributions in foreign currency are accounted on realisation basis.
6. Provident Fund is regularly contributed to the Employees Provident Fund and is deposited with Regional Employees Provident Fund Commissioner. Contributions towards gratuity is made through Group Gratuity Scheme of Life Insurance Corporation of India.

K. Radhakrishnan Nair
Controller of Finance

Dr. M. Krishnan Nair
Director

P.A. Joseph M.Sc., FCA.
Partner

VISHNU RAJENDRAN & CO

Chartered Accountants

306 Kaithayil Buildings, T.B. Road
P.B. No., 227 Kottayam -686 001
E-mail : vrandco@sancharnet.in
Ph: 0481 - 2581999, 2301999, 3105223

UTILISATION CERTIFICATE

Certified that the grant of Rs. 3,85,60,000/- (Rupees Three crores eight five lakhs and sixty thousand only) received during the financial year 2002-2003 by the REGIONAL CANCER CENTRE, THIRUVANANTHAPURAM (Registration 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 2002-2003 for the purpose of overall development and maintenance of the institution and other working expenses, functioning of Early Cancer Detection Centre and National Tumour Reg.stry.

Trivandrum
31/07/2003

P.A.JOSEPH
Chartered Accountant
(Partner)

VISHNU RAJENDRAN & CO

Chartered Accountants

306 Kaithayil Buildings, T.B. Road
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UTILISATION CERTIFICATE

Certified that an amount of Rs. 75.97.771 (Rupees Seventy five lakh ninety seven thousand seven hundred and seventy one only) has been utilized out of the following grants:-

Grant received during the financial year 2002-2003 from Health & Family Welfare Dept., Govt. of India, New Delhi.	Amount (Rs)
	75,00,000
Add:- Unutilised grant of the previous year	52,37,405
TOTAL	1,27,37,405
Less :- Unutilised grant	51,39,634
UTILISED GRANT DURING 2002-2003	75,97,771

by the REGIONAL CANCER SOCIETY, THIRUVANANTHAPURAM, during the year 2002-2003 for acquiring equipments and spare parts of equipments for the development of the Society.

Dr. M. KRISHNAN NAIR
Director

31/07/2003
Trivandrum

P.A.JOSEPH
Chartered Accountant
(Partner)

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Ministry of Health & Family Welfare, Government of India
Department of Science and Technology, Government of India
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Indian Council of Medical Research, New Delhi
World Health Organisation, Geneva, Switzerland
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International Union Against Cancer (UICC) Geneva, Switzerland
National Cancer Institute, Bethesda, Maryland, USA.
International Agency for Research on Cancer (IARC), Lyon, France
Bhabha Atomic Research Centre, Bombay
Director General of Health Services, Government of India, New Delhi
Medical College Hospital, Trivandrum
Sree Avittam Thirunal Hospital for Women and Children, Trivandrum
Dental College, Trivandrum
Sree Chitra Thirunal Institute of Medical Sciences & Technology,
Trivandrum
Kerala State Committee on Science, Technology and Environment,
Trivandrum
Director of Health Services, Government of Kerala, Trivandrum
Atomic Energy Commission, Government of India
Census Operations, Kerala
Bureau of Economics and Statistics, Kerala
University of Kerala
Mahatma Gandhi University, Kerala
Drugs Controller, Trivandrum
College of Pharmaceutical Sciences, Trivandrum
United Nations Population Fund
Electronic, Research & Development Centre of India, Trivandrum