



CANCER INSTITUTE (WIA)



ANNUAL & SCIENTIFIC REPORT

2022-2023



CANCER INSTITUTE (WIA)



**ANNUAL REPORT
&
SCIENTIFIC REPORT
2022-2023**

CANCER INSTITUTE (WIA)

Adyar, Chennai – 600 020, INDIA

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Website: <https://cancerinstitutewia.in>

Email: chairman@cancerinstitutewia.org

MISSION STATEMENT

Our mission is to provide state-of-the-art treatment for all patients, rich or poor. The Institute strives to create awareness of cancer in everyone. It also focuses on the prevention, epidemiology, screening and early detection of cancer. The Cancer Institute (WIA) endeavors to conduct research in causation, diagnosis and treatment of cancer.

VISION STATEMENT

Our Vision is to eliminate cancer across the social strata by providing correct treatment for those affected by cancer and ensuring good quality of life. The Cancer Institute (WIA) shall aspire to be a symbol of man's eternal quest to conquer disease and an inspiration that reaches out to humanity.



CANCER INSTITUTE (WIA)

6 Decades of Dedication

SERVICE ABOVE SELF

Treatment affordable and equitable

20% of patients are treated totally free and 40% at a nominal cost



CANCER INSTITUTE (WIA)



OUR FOUNDER DR. MUTHULAKSHMI REDDY

Her Vision

**State-of-the-Art treatment for all
socio-economic class of patients**

DR. S. KRISHNAMURTHI

His Words

Service above Self



DR. V. SHANTA

Her Passion

Patient comes first

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GOVERNING BODY OF THE CANCER INSTITUTE (WIA)

Regd. Under the Societies Registration Act of 1860

Shri. R. Seshasayee Chairman, Cancer Institute (WIA), Adyar, Chennai – 600020	Chairman
Dr.E.Hemanth Raj Secretary/ Executive Vice Chairman, Cancer Institute (WIA), Adyar, Chennai-600020	Secretary
Dr.T.G.Sagar 26/8, LIC Colony 3 rd Street, Thiruvanmiyur, Chennai – 600 041	Member
Dr.G.Selvaluxmy Director, Cancer Institute (WIA), Adyar, Chennai – 600020	Member
Shri N. Sugalchand Jain Siyat House, No.961, Poonamallee High Road, Purasawalkam, Chennai – 600084	Member
Shri M.A. Alagappan Adviser, Murugappa Group, 10, Chittaranjan Road, Teynampet, Chennai-600018	Member
Shri. T. Shankar Chief Executive Officer, Management Solutions, Prasad Chambers, 169, Peters Road, Royapettah, Chennai – 600014	Member
Shri M.K.Jain Managing Director, Asia(Chennai) Engg Company Pvt. Ltd.No.2, 1 st Floor, Golden Bridge, Wheat Crofts Road, Nungambakkam, Chennai – 600034	Member
Mrs.Mallika Srinivasan Chairman, Tractors & Farms Equipments Limited (TAFE) 77, Nungambakkam High Road, Chennai – 600034	Member
Mr. Ram Santhanam Chairman, Wheels India Limited, Chennai - Tiruvallur High Road, Padi, Chennai – 600050	Member
Mr. C.N.Raghavendran C.R.Narayana Rao (Consultants) Private Limited, No.10, Karpagambal Nagar, Mylapore, Chennai – 600004	Member
Mr.N.L.Rajah Senior Advocate, No.8, Venkateswara Nagar 4 th Street, Adyar, Chennai – 600020	Member
Mrs.Girija Vaidhyanathan New No.7 (Old No.4), Central Avenue, Kesavaperumalpuram, Chennai – 600028	Member
Mr.Kamal Kishore Falor Director, Standard Pencils Pvt Ltd., Guindy Industrial Estate, Chennai – 600032	Member
Dr.K.Sundaram Clinical Professor, Department of Otolaryngology SUNY Downstate Medical Center, Brooklyn, NY 11203, USA	Member
Dr.TS Ravikumar 231-C, Kilpauk Garden Road, Chennai-600010	Member
Mr.R.Shankar Raman Flat No.123, Kalpataru Royale, 12 th Floor, Road No.29 Near Sion Circle, Sion East, Mumbai -400022	Member
Addl Secretary & Financial Adviser Govt. of India, Ministry of Health & Family Welfare, Nirman Bhawan, New Delhi – 110011	Member
Secretary, Deptment of Health Research & Director General Indian Council of Medical Research, New Delhi – 110029	Member
Director of Medical Education Govt.of Tamil Nadu, 162, Poonamallee High Road, Chennai – 600010	Member

M/s.R.Janakiraman & Co. Approved Auditors

ADMINISTRATIVE STAFF

Shri R.Seshasayee, CA	: Chairman
Dr.E.Hemanth Raj, MS, MCh, Ph.D	: Executive Vice Chairman
Dr.G.Selvaluxmy, MD, DMRT	: Director
Dr.Kalpna Balakrishnan, MBBS, DA, DNB	: Associate Director
Dr.R.Swaminathan, M.Sc, Ph.D (Stat, Epide)	: Associate Director
Mrs. Varalakshmi, M.Sc	: Associate Director (Admin)
Mr.C.V.Narasimhan, BBA, LLB, ACA, ACS	: Associate Director (Finance & Accounts)

Nursing

Matron

Ms. R. Satyabala

Nursing Tutors

Ms. R. Gnana Sundari

Ms. T. Divya

Nursing In-Charge

Ms. T.Thangamalar

Ms. Bala Christopher

Ms. J.Jasmine Ruby

Infection Control Nurse

Ms. A. Beula Roselin

Ms. J. Vijaya Shanthi

Ms.A. Lakshmi

Ms. T. Renuka

Ms.Leema Rose

Link Nurse

Ms. Ayary

Ms. Prem Sheeja

Ms.Punitha

Ms. Doshy Joseph

Accounts

Senior Manager

Mr.T.Sampath Kumar
Manager

Mrs.S.Parameswari

Assistant Manager

Ms.A.Vidhya

Assistant

Mr.S.Balamurugan

Mr.G.Prabhu

Mr.M.Venkateswaran

Cash

In-Charge

Mrs.M.Uma Maheswari

Assistant

Ms.D.Maharani

Ms.N.Aruna

Ms.D.Srilekha

Ms.Remani Mahendran

Ms.B.V.Srividya

Ms.S.Malarmathi

Mr.J.Maria Kulothungan

Ms.A.Kalaimayil

Mr.M.A.Gokulnaath

Ms.V.Bhuvaneswari

Mr.M.Elangovan

Ms.M.Kiruthika

Mr.M.Balasubramanyam

Mr.V.Vaitheeswari

Ms.C.M.Arya

Ms.Nandhini Sivaprakasam

Ms.S.Divya

Purchase

General Manager

Ms.Srividhya Shankar
Manager

Ms.M.Padmavathi

Data Entry Operator

Mr.B.Eswar

Pharmacy

Incharge

Ms.M.A.Gayathri

General Administration

Academic Officer
Dr.N.Santhi
General Manager
(CSR & Special Projects)
Mr.R.Rajshekar
Administrative Officer
Mr.R.Senthil Kumar

Human Resources

Senior Manager – HR & In-charge
Mr.M.V.Rajasekharan
Steno-Typist
Mrs.T.Hemalatha
HR Officer
Mr.A.Niranjana

Special Secretary
Mr.R.Dhanasekaran
Personal Secretary to Executive Vice Chairman
Ms.Priya Ganesh
Office Coordinator
Mr.V.Sundaram
Secretary
Mr.V.Krishnakumar
Secretary to Surgical Oncology
Mrs.E.Priya

Finance**Volunteer**

Mr.P.Krishnamoorthy

Manager

Mrs.R.Shanthi
Mrs.M.Bharathi

Telephone Operators

Ms.S.Rosaline Mary
Ms.N.V.Varalakshmi
Ms.T.Ramya
Ms.D.Shoba

Pharmacists

Ms.A.R.Valarmathi
Ms.J.Muthulakshmi
Ms.T.Rupavathi
Ms.P.Aishwarya
Ms.P.Muneeswari
Ms.S.Keerthi Prakatha
Ms.R.Sarala
Ms.T.Dheena

Dieticians

Dr.K.Parvathy
Ms.K.Santhana Lakshmi
Ms.S.Sundari
Ms.D.Bhuvaneswari
Ms.C.Sangeetha
Ms.J.Revathy

Assistant Manager, Dharmasala

Ms.Nalini

Clinical Research Services Unit (CTSU)

Clinical Research Coordinators
Mr.V.Paulson Vijay Kumar
Ms.S.Devya Manohari
Ms.K.Swarnalakshmi
Dr.M.Nizamuddin
Ms.A.Malarvizhi
Ms.M.Aasma Humera Praveen
Mr.R.Saravanan
Dr.S.Subasree
Clinical Trial Coordinator
Ms.B.Monica
Biostatistician
Ms.K.S.Anjana
Research Pharmacist
Ms.V.Sivapriya

Quality Control (NABH)

Ms. T Jayapradha
Mr. Vignesh Thiyagarajan
Ms. K Sujatha
Ms. P. Vinodhini

Paediatric Data Manager

Ms.Mubina Begum
Grant Coordinator
Ms. Senthamil Selvi
Pharmacist
Ms.G.Geethapriya
Dietician
Ms.Arsha Vincent
CML Patient Coordinator & Office Assistant
Mrs.R.Thamil Selvarani
Lymphoma Data Coordinator & BMT
Coordinator
Mrs.N.Vanitha

Hospital

Consultants – 20
Doctors – 91
Non Medical – 19
Scientific staff – 44
Nurses – 407
Technician – 107
Other Staff – 385
Students – 64
Project – 54

Communication

Manager
Ms.D.Manju Deborah
Supervisor
Mr.R.Balan
Trainee Engineer
Mr.R.Chandru

Civil Engineer – Maintenance

Mr.R.Kumaran
Mr.N.Gokul Chandran

Bio-Medical Engineering

Mr.E.Venkatesan
Mrs.S.Vasanthavalli
Mr.B.Naveen Kumar
Mr.G.Anburaj

Electrical

Electrical Engineer
Mr.P.Namachivayam
Mr.C.Mariappan
Assistant Engineer
Mr.J.Nithya Kumar
Fire & Safety and Asst. Engineer
Mr.D.Jagadeesh

Maintenance (System & N/W)

Mr.N.S.Manikandan
Mr.T.Sudharsan

OVERVIEW

Cancer Institute (WIA), a non-profit voluntary charitable institution founded by Dr. Muthulakshmi Reddy and nurtured by Dr. S. Krishnamurthi and Dr. V. Shanta, has traversed an eventful journey of 69 years. Since its inception in 1954, the Institute has witnessed a steady growth, enriching itself as a social organization in the process.

Dr. Krishnamurthi and Dr. Shanta struggled for the development of the Institute from a cottage hospital of 12 beds to a comprehensive cancer centre with over 550 beds, a research division, college of oncological sciences and preventive oncology division. Both of them devoted their entire life till their last breath to the Institute and worked in a mission mode towards caring for cancer patients, revolutionising cancer treatment, making it accessible & affordable to all, especially for the poor and the under privileged.

We would like to express our gratitude to the Government of India and the Government of Tamil Nadu for their continued support. We extend our sincere thanks to our major donors, Shri Sugalchand Jain and family, Amalgamation and Sanmar Group, The TVS Family, Kalyani Memorial Trust, Sun Foundation, Mahesh Memorial Trust, Cancer Institute Foundation (CIF), California, for their kind donations. We also thank various corporates for helping the Institute under Corporate Social Responsibility (CSR) in the fields of Preventive Oncology, Research, Psycho oncology, Patient Care, Education and many more. The major corporates are Larsen & Toubro, Chennai Petroleum Corporation Ltd., Ascendas, and HCL Foundation. We thank all our benevolent donors for their generous support with which, we continue to deliver quality care to our patients using cutting edge technology and treatment protocols that are on par with the best in the world.

The implementation of Ayushman Bharat Scheme by the Government of India, Ministry of Health and Family Welfare, for the benefit of the poor patients, living below the poverty line, started in 2019, is ongoing. The Prime Minister's National Relief Fund (PMNRF) also sanctioned grants for cancer treatment. The Government of Tamil Nadu's 'Tamil Nadu Health Systems Project under Chief Minister's Comprehensive Health Insurance Scheme' (CMCHIS) continues to support BPL patients towards Bone Marrow Transplant.

National Accreditation Board for Hospitals & Healthcare providers-NABH, under the Quality Council of India, has granted Re-Accreditation in September 2022 for a further period of 4 years from July' 2022 to July' 2026. We thank every one of the staff for their participation for getting this re-accreditation. As part of the NABH journey, we have initiated many quality control measures across all departments. All of them are patient centric emphasizing on proper documentation and implementation. Staffs who were actively involved during the re- assessment in September 2022 are continuing to ensure that all policies and procedures in their departments are being followed and members of the Core Committee, Chapter Champions & Quality Implementers are working towards continuous quality improvement.



Academics: The Institute has taken major strides in the year 2022-2023.

Congratulations to the faculty, staff and students, who continued to bring laurels to the Institute. The Institute has comprehensive facilities for patient care, research (basic and clinical) and academics with teaching programs in medical and para-medical fields.

The following paramedical courses are being offered at the Institute:

- M.Sc Radiotherapy Technology
- B.Sc. Radiotherapy Technology
- B.Sc. Nuclear Medicine Technology
- B.Sc Radiography & Imaging Technology
- B.Sc Operation Theatre and Anesthesia Technology

New Courses like DM Oncopathology, DNB Palliative Medicine & FNB OncoAnesthesia have been included in 2022 -2023.

During the year, the faculty and the students published many research papers in reputed national and international journals. Different departments organized various virtual conferences, workshops, CMEs at State, National and International levels.

Cancer Prevention & Awareness:

Organized Cancer Screening Programs are being conducted by the Institute across the State for over a decade:

- | | |
|------------------------------------------------------------|----------------------|
| 1. District Cancer Screening Program, Chennai | [2008 Onwards] |
| 2. Villupuram Cancer Screening Project, Villupuram | [Sep 2014 Onwards] |
| 3. Gummidipoondi Cancer Screening Project, Gummidipoondi | [April 2016 onwards] |
| 4. Pudukkottai Cancer Screening Project, Pudukkottai | [Mar 2018 Onwards] |
| 5. Tiruvannamalai Cancer Screening Project, Tiruvannamalai | [Nov 2018 Onwards] |
| 6. Sivagangai Cancer Screening Project, Devakkottai | [Apr 2022 Onwards] |
| 7. Mammobile Project | [Dec 2016 onwards] |

The Institute launched the population based cancer screening project in 2014 at Villupuram, targeting 1,04,000 women of age 30 - 59 years, for screening breast, cervix and oral cancers. This project is supported by Infosys Foundation. HPV/DNA testing has been implemented as the primary screening method for cervical cancer. The population-based cancer screening project in Pudukkottai district launched in 2018, targeting 114361 women of age 30 - 59 years, for screening breast, cervix and oral cancers, supported by Cancer Institute Foundation, USA is ongoing.

A mammogram unit has been installed in the Pudukkottai centre and baseline mammogram will be offered to all women above 40 years of age and to women who have any suspicious changes in the breast on clinical examination.

The population based cancer screening project in Thiruvannamalai district launched in 2018, targeting 96020 women of age 30 - 59 years, for screening breast, cervix and oral cancers and the Manali Cancer Screening Project launched in 2019 are ongoing.

Mobile mammogram is operational in Villupuram district since 2016. Around 1205 women have been screened in the facility during 2022-23 and one case of early breast cancer detected and treated.

TNCRP is a population-based statewide cancer surveillance study by the institute for generating cancer incidence statistics of entire Tamil Nadu from year 2012. The TNCRP report 2023 is a comprehensive account giving cancer incidence pattern by year, age-group, sex, district and site. The total numbers of incident cancers in Tamil Nadu in 2018 were 77,138 with a crude incidence rate of 96.1 per 100,000 populations (Male: 86.6; Female: 105.5). The common cancers among men were stomach (6.5), Mouth (6.4), lung (6.3) and large bowel (5.4); among women, the order was breast (27.0), cervix (17.7) and ovary (5.8). The estimated new cancers in 2022 were 88,750. An online reporting system for TNCRP has commenced and is continuing.

Tobacco Control: We have always been on the forefront on early detection, prevention of cancer and tobacco control. Tobacco is the greatest killer and causes cardio vascular diseases, cancer, hypertension, stroke etc. A total of 801 tobacco users have been registered at the Tobacco Cessation Clinic since April 2022 to March 2023; individual intervention in the form of behavioral counseling, medication or nicotine replacement therapy is being offered. The Institute has conducted sensitization workshops, capacity building workshops and cancer awareness program for Women Self-help Group and for students. We provide technical support and human resource expertise for offering cessation in the Tobacco Cessation Centre under the District Tobacco Control Cell in Madurai and Tirunelveli.

Dharmasala for patients waiting for admission is maintained by the Cancer Institute (W.I.A) since 2019. Average occupancy is 180, one patient with one attendant. Food and accommodation is provided totally free.

We continue to follow the ethos enunciated 69 years ago by our founders, providing the state of art oncologic care without social or economic divide. We remain tall as a non-profit voluntary charitable institution not losing focus amidst worrying changes in the concepts in medical care in a corporate environment.

We are committed to the care of the underprivileged and we shall do our best.

Our journey continues.

EVENTS

World No-Tobacco Day – 30.05.2022 Theme for the year "Tobacco: Threat to our Environment"



In view of the World No Tobacco Day, Signal campaign was conducted on May 31st 2022, at 20 major signals in Chennai city, around 200 students from Indian Dental Association, Patrician College, Dignity Foundation and Don Bosco Anbu Illam participated & around 10 volunteers were present in each signal disseminating the message about the harmful effects of tobacco use. Along with Fine Arts College, we made a sand sculpture to sensitize the public on the ill effects of tobacco. Thiru. MA. Subramanian, Hon'ble Minister for Health and Family Welfare, Govt. of Tamil Nadu launched the Quit Tobacco Mobile Application developed by the Institute. A Sensitization program for tobacco users, shopkeepers, auto-drivers and convergence NGOs was also organized, 98 people participated, Dr. T. S. Selvavinayagam, Director of Department of Public Health and Preventive Medicine, Govt. of Tamil Nadu emphasized on the availability of cessation services in Government and Non-Government sectors and encouraged tobacco users to make better use of the services to quit tobacco. Dr G Selvaluxmy, Director delivered the key note address for the program and emphasized on the impact of tobacco on the environment and Mr. Cyril Alexander, Executive Director - Mary Anne Charitable Trust, highlighted on how tobacco is a threat to our environment.

Remembrance Day - 02.07.2022

The 12th remembrance day of our beloved adviser Dr.S.Krishnamurthi was observed on 02.07.2022. We paid our homage and tribute to the memory of Dr. S. Krishnamurthi, who passed away on 2nd July 2010. It was his far sighted vision that coined the mantra "Today's Research, Tomorrow's Treatment". Today's treatment is yesterday's Research". He, pioneered the first cancer control project in 1968, introduced the very concept of oncology, a transition from cancer to oncology and the introduction of the super specialities in oncology in 1982. Today we have increasing numbers of super specialities and sub super specialities.

We dedicate whatever we have achieved to the memory of our Adviser.

12th Dr. S. Krishnamurthi Memorial Oration – 12.09.2022



Padmashri Dr. M.R. Rajagopal, Founder and Chairman of Pallium India, Kerala delivered the oration titled “Care, Compassion and Dignity: Integration of Palliative Care into Cancer Care. Since 2010, 12 Memorial Orations have been delivered by eminent speakers. From 2020, the centenary year of Dr. S. Krishnamurthi, this is the third year the oration has been organized under the auspices of the Tamil Nadu Dr. MGR Medical University, Chennai along with Cancer Institute (WIA).

Dr. Sudha Seshayyan Vice Chancellor, The Tamil Nadu Dr. MGR Medical University, welcomed the gathering and presented the memorial oration award. Dr. Rajagopal began his oration by quoting Dr. S Krishnamurthi, “Start where I ended and progress to reach greater heights”. He also recalled the words of Dr. V. Shanta: “What we have done is very little. There is much more to do.”

Dr. Rajagopal highlighted the integration of palliative care into healthcare across the continuum of care from onset till cure/death, an initiative by WHO that has made many advances in palliative care. Every Doctor, every nurse and healthcare worker must treat pain, other symptoms and psychosocial suffering along with diagnosis and treatment diseases. Dr. Rajagopal noted that palliative care is now a part of medical/nursing education and it is included in MBBS curriculum since 2019.

National Cancer Awareness Day – 07.11.2022

National Cancer Awareness Day was organized at Madurai, Corporation High School, Anupanadi. Awareness talk on dangers of passive smoking, importance of early cancer detection and COTPA was given by Mr. Ramanathan, Sanitary Inspector. Cancer Institute in association with Tamil Nadu Women Development Corporation and HCL Foundation organized a workshop on ‘Cancer Prevention & Early Detection’ on this day, for NGO partners & Self-help group women in communities across Chennai city. Mr. N. Srinivasan, Joint Director, Tamil Nadu Urban Livelihood Mission, Chennai district inaugurated the workshop and awareness talk was given by Institute doctors.

Mrs Madhuras Narayanan Block gets a facelift – 24.01.2023



Mrs Madhuras Narayanan Block had undergone a facelift after renovation and modernization and was rededicated by N. Kumar, vice-chairman, and Vijay Sankar, deputy chairman of The Sanmar Group. The modernized block has now 6 consultation rooms, an emergency ward, 23 patient rooms, two iodine treatment rooms among other facilities.

Medical Oncology Block 2nd Floor gets a facelift

The first transplant unit was a 3 bedded ward with HEPA-filtered rooms established in the Medical Oncology Block 2nd floor in 2007. This was expanded to a 5 bedded unit in 2013. The new transplant unit equipped with 9 state-of-the-art rooms started functioning in September 2020 in the DJ Block. In November 2022, with the refurbishment of the 2nd floor in Medical Oncology Block, our transplant unit has expanded further with a total of 17 beds making us one of the largest transplant units in the region.

World Cancer Day – 04.02.2023



Psycho Oncology department organized an awareness rally at Elliot's Beach, Besant Nagar, Chennai. 700 college students participated in the rally and disseminated cancer awareness messages to the public by

holding placards. Youth Ambassador of Cancer Control Club was launched in six colleges in Chennai, with the aim to unify students to create cancer awareness in the communities, coordinating cancer screening programs and channeling community residents identified with high-risk, to cancer institute for further evaluation and management. Dr. T Chethana, Lead Health, HCL Foundation, Dr. E. Hemanth Raj, Dr. Kalpana Balakrishnan and Dr. Swaminathan participated.

The Institute organized panel discussion on 'Close the Care Gap in Cancer' on 4th February 2023, for NGO partners & Self-help group women in Chemmanchery, Gandhi Nagar and Perumbakkam communities. Lecture on 'Closing the gap among vulnerable groups in cancer care' was delivered by Dr. Venkatesh, Department of Surgical Oncology followed by a Panel discussion on common signs & symptoms, possible risk factors, prevention strategies and importance of healthy lifestyle was done.

Dr. V. Shanta 2nd Memorial Oration - 11.03.2023



The 2nd Memorial Oration of our beloved Chairman, Padma Vibhushan late Dr.V.Shanta was held on 11th March, 2023. Mr. N. Ram, Director, The Hindu Publishing Group, delivered the oration on "*Cancer and the Roles and Responsibilities of the Media*". He emphasized that Journalists can provide credible public health information competently only by partnering with trustworthy healthcare providers committed to providing service to all sections of society, especially the weak and vulnerable. He added that the educational potential of the media still remains largely unrealized in India.

THE COLLEGE OF ONCOLOGICAL SCIENCES

Executive Vice Chairman	–	Dr.E.Hemanth Raj MBBS, MS, MCh, PhD
Director	–	Dr.G.Selvaluxmy MBBS, DMRT, MD
Dean	–	Dr.Shirley Sundersingh MBBS, MD, DNB, MNAMS, PhD
Academic Officer	–	Dr.SanthiNeelakannan B.Sc., MBA, PhD

II. Professional Medical Education

The college has been offering various National Medical Commission (NMC) recognized super speciality and broad speciality courses in oncology affiliated to The Tamil Nadu Dr. M.G.R. Medical University. These comprise D.M. Medical Oncology, M.Ch. Surgical Oncology and M.D. Radiation Oncology. The annual intake of students for D.M. Medical Oncology and M.Ch. Surgical Oncology has been raised to 12 students and 09 students respectively from the year 2022.

Post doctoral fellowship in Oncopathology affiliated to The Tamil Nadu Dr. M.G.R. Medical University has been continuing with an annual intake of 02 students. A new NMC recognized super speciality course D.M.Onco-Pathology has been introduced from the year 2022 with an annual intake of 02 students.

For the first time in Cancer Institute (WIA), a National Board of Examination in Medical Sciences (NBEMS) recognized Diplomate of National Board (D.N.B.) Palliative Medicine has been introduced from the year 2022 with an annual intake of 02 students.

In addition, NBEMS recognized Fellowship of National Board (F.N.B.) Onco Anaesthesia has been introduced from the year 2022 with an annual intake of 04 students.

III. Para Medical Education

Master degree courses like M.Sc.Radiotherapy Technology affiliated to The Tamil Nadu Dr. M.G.R. Medical University, M.Sc. Medical Physics affiliated to Anna University and M.Phil. Psycho Oncology affiliated to University of Madras is being conducted.

Bachelor's Degree (B.Sc.) courses in Radiotherapy Technology, Radiography and Imaging Technology, Nuclear Medicine Technology and Operation Theatre and Anaesthesia Technology affiliated to The Tamil Nadu Dr. M.G.R. Medical University are also conducted.

IV. Research

Cancer Institute (WIA) is recognised by The Tamil Nadu Dr.M.G.R. Medical University and University of Madras for conducting research leading to the award of Ph.D. by the departments of Molecular Oncology, Nuclear Medicine, Psycho Oncology and Preventive Oncology.

V. Certificate Courses

Certificate Course in Essentials of Palliative Care (CCEPC) and Certificate Course on Tobacco Cessation are regularly conducted by Cancer Institute (WIA).

VI. Students Graduated (April 2022 to March 2023)

S.No	Course	No. of Students
1	Ph.D. Oncology (Molecular Oncology)	2
2	Ph.D.Oncology (Preventive Oncology)	1
3	Ph.D. Oncology (Psycho Oncology)	2
4	D.M. Medical Oncology	6
5	M.Ch. Surgical Oncology	5
6	M.D. Radiation Oncology	5
7	Post Doctoral Fellowship in Oncopathology	1
8	M.Sc. Radiotherapy Technology	1
9	M.Sc.Medical Physics	28
10	M.Phil. Psycho Oncology	3
11	B.Sc. Radiotherapy Technology	8
12	B.Sc. Radiography & Imaging Technology	7
13	B.Sc. Nuclear Medicine Technology	3
14	B.Sc. Operation Theatre & Anaesthesia Technology	6
15	Certificate Course in Essentials of Palliative Care	51

VII. Tamil Nadu Medical Council Credit Hours (April 2022 to March 2023)

S.No	CME Programme	Date	Credit Hours
1	OASyS 2022 Onco Anaesthesia Symposium and Synopses	24/09/2022	2
2	World Hospice and Palliative Care Day	08/10/2022	1
3	CME on Gynecologic Malignancies	16/10/2022	2
4	Indian Musculoskeletal Oncology Society 2023	03/03/2023 to 05/03/2023	6
5	Radiation Oncology Mock Exam [ROME] 2023	25/03/2023 to 26/03/2023	4

RADIATION ONCOLOGY

Dr.G. Selvaluxmi - Director

The Radiation Oncology department was established in the year 1954. The department is involved in various teaching and training programmes. Diploma in Medical Radiation Therapy (D.M.R.T) course was started in 1990 and the Doctor of Medicine (M.D.) course in Radiotherapy was started in 1992 both affiliated to The Tamil Nadu Dr.M.G.R.Medical University. B.Sc in radiotherapy technology course affiliated to The Tamil Nadu Dr.M.G.R. Medical University and approved by AERB was started in 2011. Cancer Institute strongly believes that there will be no progresses without research. Being the pioneers of multidisciplinary approach in malignancies of various sites, the department is involved in clinical trials.

Faculty

Professor

Dr.Alexander John MD DMRT -Head of Department
Dr.B.Ananthi MD DMRT
Dr.Priya Iyer MDRT

Associate Professor

Dr.M.N.Arun Kumar MDRT
Dr.C.Vasanth Christopher Jayapaul MDRT
Dr.Ram Madhavan MDRT
Dr.K.Harish Kumar MDRT

Assistant Professor

Dr.K.Ramanaiah MDRT
Dr.V.V.Gautam DMRT DNB (RT)
Dr.Vengada Krishnan MDRT

Lecturer

Dr.B.Mukesh MDRT
Dr.S.Sadanand
Dr.S.Dinesh
Dr.V.Priyadharshini

Other Staff: Technologists – 15, Supporting Staff - 2

Students registered:

M.D (Radio Therapy)	- 21
M.Sc (Radio Therapy Technology)	- 4
B.Sc (Radio Therapy Technology)	- 31

Students Completed:

MD (Radio Therapy) - 5
M.Sc. (Radio Therapy Technology) - 2
B.Sc (Radio Therapy Technology) - 6

Statistics

External beam therapy new cases	2333
Total number of treatments delivered	55138
Total number of fields delivered	229061
Conventional treatment planning	614
Conventional treatment with shapers	28
3D CRT	1430
IMRT	208
Rapid arc therapy	42
SBRT	4
Total body radiation	18
SRT	2
Electron Beam Therapy	5
Brachytherapy applications	729

Dr Alexander John

Panel discussion, IMSOS 2023 on Pediatric Malignancies and Proton Therapy & ROME 2023 on head and Neck Malignancies

Dr Priya Iyer

- Invited as a Chairperson for the proffered paper session held at the AROICON TN-PY Chapter conference in September
- Debater on the topic “ALND versus Radiotherapy for the sentinel node positive Axilla” at the ISMPO-ISOCAN conference held at Chennai in October
- Panelist for the session “Case Based discussion-Oncoplastic surgery in Early breast cancers” at the ISMPO-ISOCAN conference held at Chennai in October
- Clinical Lead for the Equip India project 2022 cohort conducted by the NCG from June to December
- Journal Reviewer in Scientific Reports journal by Nature and The Lancet Regional Health Southeast Asia from the year 2022

Dr Gautam Vydia

- Delegate and panelist (Young oncology brigade) in ISO IMPSO 2022
- Attended CME by AROI TN PY on Prostate cancer & Hepato cellular cancer

- Faculty in IMSOS 2023
- Attended SOUTH ZONE CME on prostate cancer by RADONC CONCLAVE

Dr Ram Madhavan

- Delivered a talk on New FIGO staging and the management of Vulval cancer in Cancer Institute – Women Doctors Association CME in October
- Attended CME and workshop on “Recent Advances in radiation techniques in breast cancer” conducted by Department of Radiation Oncology, Madras Medical college in October
- Participated as faculty in Young Radiation Oncology Academic Forum ISODOSE, RCC Thiruvananthapuram in January
- Attended International workshop on Gynecological cancers organized by RCC Thiruvananthapuram in February
- Attended AROI ESTRO Gynec teaching course on “3D radiotherapy with special implementation of MRI/CT based brachytherapy in cervical cancer” held at Basavatarakam Indo American cancer hospital at Hyderabad in March
- Phase II trial Capecitabine-Based Chemoradiotherapy for Cisplatin ineligible Squamous cell Carcinoma of the Uterine Cervix

Dr Sadanand

- IMSOS 2023 held at Hilton hotel Chennai in March

Dr. Arun Kumar

- Panelist in AROI CME -Hepatocellular carcinoma in August
- Panelist in AROICON2022(TN&PY)- ‘To treat & how to treat challenging clinical scenarios’ in September

Dr Mukesh

- International oncology conference, 2022, Kochi, Kerala
- Brachytherapy 2022, Thirunelveli, Tamilnadu
- AROI TNPY Chapter 2022, Chennai, Tamilnadu
- World Hospice and Palliative care day I, Chennai, Tamil Nadu

Dr Ananthi. B

- Panelist in CME, AROI TN & PY Chapter held at Chennai on Adjuvant Breast Cancer Treatment and its Nuances in April
- Speaker in 37th Annual Conference of AROI TN & PY Chapter held at Chennai on Fast Forward 5 Fractions Vs 15 Fractions in Carcinoma Breast Treatments in September

Dr Vasanth Christopher

- Delivered a talk on Management of cervical cancer at Cancer Institute – Women Doctors Association CME in October

- Phase II trial Capecitabine-Based Chemoradiotherapy for Cisplatin ineligible Squamous cell Carcinoma of the Uterine Cervix

Dr. Vengada Krishnan

- Attended AROI ESTRO Gynec teaching course on “3D radiotherapy with special implementation of MRI/CT based brachytherapy in cervical cancer” held at Kolkata in July
- Attended Pre conference workshop on Active Breathing coordinator & DIBH technique for breast, lung and liver treatment during AROI 2022 annual conference in September
- Presented a paper in 37th Annual conference of the AROI TN & Puducherry chapter 2022 in September: The Prognostic Significance of Hydronephrosis and Role of Ureteric Stenting in Cervical Cancer Patients Treated with Radical Radiation Therapy, Real World Outcomes from a Regional Cancer Centre, South India
- Attended the World Cancer Day conference as a panelist in Panel Discussion on “Close the Care Gap in Cancer” at Cancer Institute (WIA), Adyar in February
- Attended 6th International workshop on Gynecological cancers organized by RCC Thiruvananthapuram in February
- Conducted a session in Radiation Oncology Model Exam 2023 (ROME 2023) about Radiation planning in carcinoma cervix
- Attended workshop on Radiation oncology in sarcoma at 9th Annual conference of Indian Musculo Skeletal Oncology Society (IMSOS) in March
- Trials started - Phase II trial Capecitabine-Based Chemoradiotherapy for Cisplatin ineligible Squamous cell Carcinoma of the Uterine Cervix

Dr Dinesh Sundar

- 2nd Global Cancer Consortium Conference, Conducted by MAHE, Manipal, Mangalore, International Conference - Got first Place in Oral Presentation & Best Paper of the Conference
- Young Radiation Oncologists Conference (YROC) , National Conference , Lucknow - Poster Presented
- AROI TN& PY State Conference , ITC Grand Chola , Chennai – Attended
- Symposium on Hereditary Breast Cancer , AIIMS , New Delhi - Attended as Faculty

Dr Priyadarshini

- AROICON 2022
- IMSOS 2023
- YROC Lucknow 2023

Dr. Ramanaiya

- IMPSO/ISO conference held at chennai in October

SURGICAL ONCOLOGY

Dr. E. Hemanth Raj
Executive Vice Chairman & Chairman of Surgical Oncology

The department of Surgical Oncology has been providing state of the art cancer care ever since the inception of the Cancer Institute in the year 1954.

Faculty

Dr. E. Hemanth Raj	Chairman
Dr. Arvind Krishnamurthy	Professor & Head of the Department

Professor	Associate Professor
Dr. V. Sridevi Dr. A.S. Ramakrishnan Dr. Anand Raja	Dr. V. Venkatesh Dr. Ujwala Prakash Wakpaijan Dr. I. Vijay Sundar Dr. K. Chandrakumar

Assistant Professor	
Dr. Kamakshi Dr. Amy Jose Dr. N. Shruthi Dr. N. Jayashree Dr. S. Pradeep Jeyakumar Dr. V. Manikandan Dr. Jagan Murugan Dr. Vivek Patel Dr. S. Arun Mitra	Dr. S. Kingston Dr. Rohini Jayashankar Dr. Anjana Vasudevan Dr. R. Manikandan Dr. Nossam Rama Subba Reddy Dr. Shailesh Patidar Dr. Shalini Shree Dr. P. Malar Raj

Medical Officer	Other Staff
Dr. M.R. Dhanush Kumar	Mrs. Vilasini Raman, Speech Therapist Mrs. R. Prema, Bone Bank Technician

Reconstructive Surgeon	Medical Gastroenterologist
Dr. R. Viswamadesh	Dr. N. Thirumoorthi Dr. L. Sujatha Dr.P. Ravi Kiran

Post Graduates

3 rd Year	2 nd Year	1 st Year
Dr. Lesin Kumar Dr. Pushkala Dr. Gouri Mukhopadhyay Dr. Nutakki Madhri Dr. Karnawat Anand Vinay	Dr. Anand MHM Dr. Gaurav Dr. Raksha Dr. Saravanan Dr. Srinivas Venkatesh	Dr. Suresh Kumar Dr. Gurushankari Dr. Suthar Sweta Rajubhai Dr. Aditi Deewan Dr. Badami Khushbu Arvindlal Dr. Anand. M Dr. Vivaan Dutt Dr. Aravind. S

Graduated in 2022

Dr. Shalini Shree
Dr. Nossam Rama Subba Reddy
Dr. Shailesh Patidar
Dr. Manikandan
Dr. Malar Raj

Total Number of Major Oncological Surgeries

Head and Neck	537
Thoracic	74
Gastrointestinal	503
Urology	147
Musculoskeletal	170
Breast I	266
Breast Unit II	328
Gynaecology	329
Neurosurgery	131
Total	2485

Endoscopies in Endoscopic Suite in the 2nd Floor OT

DLDP : 550
OGD : 188
SG Dilatations : 99
Bronchoscopy : 172
Nasal Endoscopy : 208
Nasogastric tube Insertion under guidance : 106

Nasojejunal tube Insertion under guidance	: 49
Side Viewing Scopy	: 06
Endoscopic Ultrasound	: 37
Laser	: 04
ERCP	: 26
Narrow Band Imaging	: 06
Argon Plasma Coagulation	: 03
Colonoscopy	: 53
TEP Change	: 10
PTBD	: 38
PCN	: 33
OES ST	: 12
Polypectomy	: 06
EBUS	: 16
Lymphangiogram	: 04
Picc Line	: 04
CRE Balloon Dilatation	: 11
FEES	: 218
PEG	: 06
Cystoscopy	: 522
Sigmoidoscopy	: 13
ESD	: 03
EVL Banding	: 03
Celiac (CPN)	: 01
Pyloro duodenal stent	: 02
Tracheal Stent	: 05
Broncho Radial EBUS	: 01
Central Line	: 01

Dr. Arvind Krishnamurthy

Conference Conducted

ISMPO-ISOCON 2022: The Indian Society of Medical & Paediatric Oncology (ISMPO) and Indian Society of Oncology (ISO) organized their Biennial Joint conference - ISMPO ISOCON 2022 Conference at the Hilton Hotel, Chennai, from the 28th to the 30th October 2022. The faculty from leading academic institutes and cancer centers across India and abroad presented the latest data and interacted with delegates including students and upcoming oncologists.

The conference was hugely successful with a high-quality scientific program that was critically acclaimed by one and all and a record participation of over 1270 Faculty and Delegates. The conference was inaugurated by Her Excellency, Dr. (Smt.) Tamilisai Soundarajan, Hon'ble Governor of Telangana & Hon'ble Lieutenant Governor of Puducherry.

The scientific program was specifically designed to include interactive multi-disciplinary teaching workshops, which aims to provide a real edge to the practicing oncologists. The interactive teaching workshops included Radiotherapy, Lymphoma, Onco-Rehabilitation, Onco-Nutrition, Psycho Oncology, Chemo Radiation, Communication Skills, Surgical Skills, and Dysphagia Management among others. The regular scientific program included didactic lectures, interactive panel discussions, and debates on the latest developments in the management of the most prevalent cancers in India. Addition of an attractive Daily Bumper Quiz and a Grand Student Quiz with a latest electronic gadget mobile phones and exciting cash prizes respectively sparked a great deal of enthusiasm from all the Faculty and Delegates.

Fourteen eminent Oncologists were awarded Lifetime Achievement Awards for their outstanding academic contribution to cancer care and cancer control. Dr.E. Hemant Raj, Executive Vice Chairman, Cancer Institute (WIA) and Prof. T. G. Sagar, Retired Dean and Director, Cancer Institute (WIA) were among its proud recipients. In addition, the top 3 best presenters under each of the 14 speciality oncology tracks won awards, apart from many other academic awards sponsored both from the ISMPO and the ISO.

Presentations

- Panelist, Head and Neck Cancers. Best of ASCO® India 2022 Conference, Mumbai in June
- Moderator of Panel on Multidisciplinary Approach to Oligometastatic Disease with CA Breast, West Zone CME of IASO & Annual Conference of AROI- MP CG, Indore in July
- Moderated a Panel on Early-Stage Lung Cancer Based on ASCO 2022 Updates International Cancer Submit Version 2.0 in July
- Moderated a Panel on Oral Cancers 5th Annual Review on Head and Neck Cancers, Mumbai in August
- Talk on Parenteral Nutrition in GI, Pre & Post-Op, ISMPO-ISOCAN 2023
Debate: Can radiation replace ALND after positive SLNB, 4th GBM (Gujarat Breast Meet) in September
- Moderated a Session on Thyroid Cancers and as a Panelist in HR+ Breast Cancer – Controversies, 47th Indian Cooperative Oncology Network Conference at Kolkata in September
- Talk on Indeterminate thyroid nodule – approach, MVR CANCON 2022 in September
- Lecture on Advances in Oral Cancer Management and Key Note Lecture on HPV Vaccination National conference of Indian Association of Surgical Oncology IASO NATCON, Madurai in October
- Invited Speaker on Onco-Nutrition in Continuing Quality Education (CQE) Series 16: “Clinical Dietetics” in November
- Talk on Extent of Lymphadenectomy for Esophageal Cancers and on Pulmonary Metastectomy, 4th Annual Conference of the Indian Society of Thoracic Surgeons and Trust, ISTSCON 2022 held at Chennai in November
- Panelist in “Management of Recurrent Head and Neck Cancer” FHNO, at Guwahati in November
- Moderated a Panel Discussion on Management of Parotid Tumors and Participated in a Panel on Soft Tissue Sarcomas, ASICON 2022, at Mumbai in December
- Moderated as Session on Lung Cancer, Local Therapy Issues and 6th Lung Cancer Year End Review 2022 at Mumbai in December
- Participated in a Session on ER+ve Breast Cancer (Rapid Review) 8th Edition of Year in Review Breast Cancer Conference” at Mumbai in January
- Moderated a Panel on Onco-Nutrition ICNC -2023, IAPEN INDIA, Chennai, in February
- Talk on Updates on Medullary Carcinoma Thyroid. IASO MIDTERM CONFERENCE- Agra in March

- Moderator of a Panel on Systemic Therapy in Thyroid cancers. Asia Pacific Society of Thyroid Surgery (APTS 2023) at Kochi in March

Dr. Vijay Sundar

Future Projects

Assessment of Glioma induced plasticity by radiological anatomical and Neurophysiological methods; Conducted - CME on brain tumors in June

Presentations

- Talk on setting up intraoperative neuro monitoring at the Asia oceanic IONM conference at Mahabalipuram Chennai
- Paper presented on surgical management of CNS metastases in Tamil Nadu association of neurosurgeons TANS meeting at Thanjavur in April
- Presented paper on neurosurgical oncology in young neurosurgeons forum in Chennai in June
- Conducted brain tumor awareness week with department of psych oncology with survivors of brain tumors including media coverage for increasing awareness of brain tumors among general population [both print and television] in November
- Presented paper on 100 CNS metastases in annual national conference of neurological society of India NSI at Agra in December
- Attended cadaveric workshop on human brain white matter dissection course in Manipal academy of higher education, Manipal in March
- Selected for a week long preceptorship course in neuro oncology at Tata Memorial hospital, Mumbai
- Started endoscopic endonasal neurosurgery at cancer institute; performed 4 surgeries for CNS tumors through nasal approach using endoscope
- Performed spondylectomy [complete removal of vertebral body and lamina] in association with musculoskeletal oncology team; performed three spondylectomies

Dr.Venktesh

Achievements

The Dept of Head and Neck Surgery along with Neurosurgery performed Resection of Tympanojugular Paraganglioma Type Di2 (Glomus Jugulare) by Fisch Infratemporal Fossa Type C approach after Preoperative Embolisation. This approach for glomus jugulare is technically

Dr.V.Manikandan

- Enrolled as co-investigator in Clinical Trial Protocol CDRB436J12301
A randomized, double-blind, placebo-controlled Phase III study to evaluate the efficacy and safety of dabrafenib plus trametinib in previously treated patients with locally advanced or metastatic, radio-active iodine refractory BRAFV600E mutation-positive Differentiated Thyroid Cancer
- Enrolled as Principal investigator *in ASP-1929-301*
Protocol Title: A Phase 3, Randomized, Double-Arm, Open-Label, Controlled Trial of ASP-1929 Photo immunotherapy Versus Physician's Choice Standard of Care for the Treatment of Loco

regional, Recurrent Head and Neck Squamous Cell Carcinoma in Patients Who Have Failed or Progressed On or After at Least Two Lines of Therapy, of Which at Least One Line Must be Systemic Therapy

- As a co-author in article Management options re-arranged: ROS-1 positive lung cancers, CRST ONLINE (LETTER TO EDITOR)
- Participated as faculty in ISO international conference held in Chennai (oct 2022) at Hotel Hilton Oral PAPER presentation (INFRAHYOID FLAP – A HANDY FLAP FOR HEAD AND NECK SURGEONS) at ISO conference
- Participated as panel member in debate for “Current treatment for Early oral cancers” at ISO conference 2022 (Chennai)
- Attended NATCON – 2022 at Madurai as a delegate

Dr. Kingston

On going projects

Phase IIb/III study to determine efficacy of Curcumin and Met formin to reduce the incidence of second primary tumors of aero-digestive tract in patients with history of head and neck squamous cell carcinoma.

Academics

Evidence for elective neck dissection and sentinel lymph node biopsy in HNSCC Surgical management of salivary gland tumors

Dr. Vivek Patel

- Role of Cytoreductive Surgery & Oral Paper Video at Natcon 2022
Natcon 2022@Madurai hyper thermic intraperitoneal chemotherapy (HIPEC) in peritoneal Carcinomatosis in Indian setting
- A tertiary Cancer Care Centre experience
- IMSOS 2022 Time to treatment initiation in primary extremity sarcoma
- Presentation Video- supine Robotic Retroperitoneal lymph node dissection in post Chemotherapy residual mass in testicular carcinoma
- Poster- PSOGI 2023@TMC Kolkata Role of CRS-HIPEC in peritoneal carcinomatosis in Indian setting- Our experience from last decade

Dr.N. Jayashree

- Participated as Faculty (speaker) in the international conference HPVCON 2022, and delivered lecture on ‘Way ahead! When screen test is positive’ in August
- Participated as faculty in Shobha Seth Wenger CME on “Hereditary Gynaecological Cancers: from Research to Practice” in September
- Speaker AGOICON (debate for the motion- stage Ib3 ca cervix should undergo surgery) judge free paper session and Quiz master AGOICON in November - Organizing Secretary and Speaker CI WIA CME (HPV vaccination – way ahead!) on Gynaecological malignancies in October
- Speaker (management of endometrial hyperplasia in young) KSCAGOICON in October
- Speaker AOGIN India 2022 Coimbatore in November
- Speaker to a workshop on ‘Policy Analysis of Cervical Cancer Screening in India’, held

at Christian Medical College, Vellore in December

- Speaker Cancon 2023 held in February (Online)

Projects

- Detecting Early Cervical Cancer in Indian Women using a Multi-biomarker Panel (TheCARE Study) (IRB approved and ongoing)
- A phase IV observer blind, randomised active controlled, multicentric clinical study to evaluate the immunogenicity and safety of a single dose SIIPL's qHPV vaccine (CERVAVAC™) administered intramuscularly in healthy girls aged 9-14 years as compared to Merck's HPV 6/11/16/18 vaccine (Gardasil®) (for IRB approval)
- A single arm multicentric postmarketing surveillance study to assess the safety of SIIPL's qHPV vaccine (CERVAVAC) when administered in a two dose schedule to girls and boys aged 9-14 years and in a three dose schedule to women and men aged 15-26 years (for IRB approval)
- Identification of miRNA- based molecular triage markers for early detection of cervical cancers among women with high grade cervical intraepithelial lesions. (for IRB approval)
- Survival factors with neoadjuvant therapy followed by tailored surgery for Advanced Inoperable Endometrial Carcinoma (ADENCA study) -under protocol refinement

Conferences Organised

Conducted CI WDA CME on gynaecological malignancies in October; More than 150 members participated; the content of the conference topics and online quiz were well appreciated by the attendees.

Dr. Viswamadesh

- Attended TANPAPS- Tamilnadu and Pondicherry Association for Plastic Surgeons Conference 2022 at Pondicherry and presented a free paper on Distally Based Pedicled free Fibula Reconstruction for Post Oncological Resection of Distal Tibial Defects
- Guest Lecture on FIBROMATOSIS- Current concepts and practice in Treatment in TANPAPS 2023 at Tirunelveli in February
- ISMPO ISOCON2022, panelist on Onco Rehabilitation - A Multidisciplinary Approach
- Imsos Conference in March, Chairperson in Debate- Implication on Rehabilitation and Functional outcomes of Prosthetic vs Biological graft in Limb Salvage Surgeries
- World Lymphoedema Day in March, lecture on Pathophysiology of Lymphoedema at Balaji College of Physiotherapy Chennai- Workshop on Lymphoedema management

Dr. Amy Jose

- Prognostic Value of Pathological chemotherapy response score in advanced epithelial ovarian cancer. Data collection in Progress
- Efficacy of percutaneous electrical neuro stimulation of auricle as an opioid sparing post Operative analgesic technique in cancer endometrium patients- Prospective randomized Interventional study. Cleared ethics committee and accrual initiated
- Lecture on Adenocarcinoma Cervix - CME on cervical cancer organized by Chennai City Surgical Oncology Society in July

- CME on Gynaecological Malignancies in Association with WDA. Delivered talk on Role of fertility preservation in Gynaecological malignancies in October
- Lecture on Cancer Awareness program among women - International Women's Day lecture at St. Louis church, Adyar in March
- Multicentric based Molecular analysis of rare Gynaecologic cancers. Assessment of molecular profile and genomic analysis. Discussion - on going

Dr. Shruthi

- Mumbai Obstetrics and Gynaecology Society- Panelist on Cervical Cancer- At TMH Mumbai
- Talk on MIS in Gynaec Oncology- at CI FOGSI CME, Chennai
- Underwent Fellowship in Advanced Robotic and Innovative Surgery at Goa
- Talk show on media channel about Cancer in Women

Dr. Rohini

- Talk on "Breast Cancer Management for Gynaecologists" at WIA-WDA CME held at CI (WIA)
- Co-investigator in HYPOTRAX-CRT Trial at Cancer Institute (WIA) - Future Projects

MEDICAL ONCOLOGY

Dr. R.Venkatraman, Professor and Head of the Department

The Division of Medical Oncology was started at the Institute as early as 1960, it is the oldest in the country and deals with systemic management of cancer. The department is performing haploidentical and matched identical donor bone marrow transplants and is one of the few charitable hospitals in the country that is offering these sophisticated BMT. The numbers have consistently increased over the past few years. The department is actively involved in multiple research projects including multicenter clinical trials. Faculty and students have presented their research in major national and international conferences, won awards & have publications in national and international journals.

Faculty

Dr.K.Krishna Rathnam, M.D, D.M, FRCAP

Prof & Head, Stem Cell Transplant Unit

Dr.Venkatraman Radhakrishnan, MD, DM, M.Sc.

Professor & Head of the Department

Associate Professor	Assistant Professor	Medical Officer
Dr.P.K.Jayachandran, MD, MRCP, DM, FRCP Dr.Nikita J Mehra, MD, DM Dr.S.Gangothri, MD, DM Dr.K.K.Parathan, MD, DM Dr.K.Sivasree, MD, DM	Dr.M.V.Indhuja, MD, DM Dr.T.K.Balaji, MD Dr.S.Prasanth, MD, DM Dr.Gargi Das, MD, DM Dr.R.Akhil	Dr.T.Arun Pragdeesh

Specialities

Dr.Rakesh Gopal

Consultant – Cardiologist

Dr.T.Subash Chandhar

Consultant – Cardiologist

Dr. Thiyagesh Devaganapathy

Interventional Pulmonologist

Dr.Anitha Jagannath

Consultant – Nephrologist

Patient Coordinators

Ms. R.Thamil Selvarani: CML

Patient coordinator and Office Assistant

Ms. N.Vanitha: Lymphoma data

coordinator and BMT coordinator

Ms. M.Mubina Begum:

Pediatric Data Manager

Ms. R.Senthamilselvi:

Grant coordinator

Ms. G.Geethapriya:

Pediatric Pharmacist

Ms. Arsha Vincent:

Pediatric Dietician

Students registered for D.M	
I Year	8
II Year	6
III Year	6

Senior Residents who completed in 2022

Candidates who were successful in the final Year DM Medical Oncology Examination; conducted by the TN Dr MGR Medical University

1. Dr. Saikrishna.K
2. Dr. Jerin Ovet
3. Dr. Nadeem Ahmad
4. Dr. Haridas. P. Mani
5. Dr. Kapil Raut
6. Dr. Vamsivihari G

Total No. of Bone Marrow Transplants

- Allogeneic - 22 (previous year 18)
- Autologous - 31 (previous year 28)

Procedures (MOB procedure room)

- Lumbar puncture : 747 (previous year 766)
- Bone marrow aspiration and biopsy : 765 (previous year 886)
- Central line : 209 (previous year 294)
- Ascitic fluid tapping : 687 (previous year 622)
- Pleural Tapping : 189 (previous year 249)
- PICC line : 66 (previous year 14)
- FNAC : 11 (previous year 22)
- Skin biopsy : 3 (previous year 2)

Daycare chemotherapy administered

- Special daycare : 5963 (previous year 5172)
- General daycare : 9281 (previous year 9036)
- MNB Day care : 2299 (previous year 1769)

Important achievement

The Medical Oncology Block 2nd Floor (MOB IIF) was renovated and was inaugurated by the former Director Emeritus, Dr.T.G.Sagar in the presence of the director, Dr.G.Selvaluxmy and the executive vice chairman, Dr.E.Hemath Raj on 5th of October 2022. The old unit had a 5 bedded BMT unit and a 12 bedded Leukemia Induction unit. Currently, the unit has been converted into a state of the art unit with total of 22 beds. There are nine beds for ICU, one bed for isolation and 12 beds for Leukemia patients. Eighteen beds have been equipped with modular cots, multiparametric monitors and a centralized monitoring system. The whole unit is a HEPA filtered unit with positive pressure facility for prevention of infections. One bed in isolation is a negative pressure HEPA filtered bed to accommodate sick patients with contagious infections. The ICU has facilities for dialysis services including regular dialysis and SLED. This facility will improve the intensive care for patients and improve their survival.

Academics

Dr. Venkatraman Radhakrishnan

Invited talks

- Expert for oncology beyond obvious meeting on adjuvant osimertinib in lung cancer in April
- Panelist for the SIOP nursing communication meeting in April
- Management of retinoblastoma at SRMC Chennai in May
- Approach to pancytopenia at Trichy in June
- Brain metastases: Medical Oncology Perspective at Cancer Institute in June
- Oncological emergencies for nurses. Cancer Institute in August
- Approach to Ph-positive ALL. Apollo Hospital Chennai in August
- Staging of pediatric cancers. IARC GICR course in September
- Pediatric APL. Cankids meeting in September
- Palliative radiotherapy in Ewing's sarcoma. SIOP Barcelona in September
- Hematology Cancer Consortium ALL panel. Mumbai in October
- ISMPO pediatric solid tumor panel moderator at Chennai in October
- Management of Exon 20 mutated lung cancer. ISMPO 2022, Chennai in October
- How to write a research protocol. PHOCON 2022, New Delhi in November
- Febrile neutropenia for general pediatricians. PHOCON 2022, New Delhi in November
- Approach to bilateral Wilms tumor. PHOCON 2022, New Delhi in November
- Generating evidence to better serve our communities. St.Jude Global Alliance Meeting. Memphis in November
- Management of pediatric GCT. Sri Lankan College of Oncologist. Plenary Session. Colombo in December
- EGFR mutated lung cancer in December
- Chairperson, Cellular Therapy meeting. TMH, Mumbai in January
- AIIMS, New Delhi. NGS in lung cancer in February
- RGCON 2023. Faculty for research workshop in February
- Escalation for treatment in high-risk ALL. RGCON 2023, New Delhi in February

Ongoing Trials

1. Neoadjuvant Concurrent Chemo-radiation with Paclitaxel and Trastuzumab versus Neoadjuvant chemotherapy with trastuzumab followed by sequential radiation in locally advanced Her2 neu positive breast cancers: a phase 2 randomized controlled trial
2. Anti-Emetic Prophylaxis for Chemotherapy-Induced Vomiting Without Dexamethasone for Children and Adolescents Receiving Highly Emetogenic Chemotherapy: Investigator-Initiated, Open-Label, Multi-Center, Non-Inferiority, Phase III Randomized Controlled Trial

Dr. Jayachandran P K

- Attended various national and international conferences and CMEs as faculty and delegate
- Delivered the 1st CAR-T cell therapy for Myeloma in Institute and in whole of south India. It was a anti BCMA CAR-T cell product imported from Malaysia in May
- Poster on "High dose Etoposide based Chemo-mobilization in Autologous stem cell transplantation – revisited" at the Asia Pacific Bone marrow transplantation meeting at Kochi in October
- Appointed as an Examiner for the MRCP (UK) PACES clinical examination in November

- Conducted Quiz at the ISMPO-ISOCAN at Chennai in November
- Conducted the Gold Medal exam and Quiz at the TAMPOS Annual meeting at Madurai in January
- Conducted the CML Patient support group meeting in collaboration with MAX foundation and Friends of MAX with more than 200 patients benefitting by the program in February
- Selected as one of the 15 participants across Asia-Pacific for the Clinical Research Training Institute (CTRI) conducted by the American Society of Hematology at Vietnam in March
- Presented two posters at the Korean Society of Hematology conference at Seoul, South Korea and was awarded the best poster award in March

Dr. Nikita Mehra

Ongoing Projects

1. Identification of aberrant DNA Methylation and Expression of Long non-coding RNAs: Assessing its Functional and Clinical Significance in Monoclonal gammopathy of unknown significance (MGUS), Smoldering multiple myeloma (SMM) and Multiple Myeloma (MM) Role: Principal Investigator
Funding Agency: Core Research Grant Science and Engineering Research Board (SERB), Department of Science and Technology, Government of India
Total Budget: 69, 59,000 INR Collaborating Institute: Christian Medical College, Vellore
Duration: 36 months (from March 2021)
2. Efficacy of Pioglitazone in combination with Neoadjuvant Chemotherapy in Patients with Extremity Skeletal High-Grade Osteosarcoma Treated with Curative Intent: An Open-label, Multi-centre, Randomized Phase II Clinical Trial [CTRI REF/2021/09/047340] Role: Principal Investigator Collaborating centre: JIPMER, Puducherry
3. Post marketing phase 4 study to evaluate safety, tolerability and efficacy of Kyprolis® (carfilzomib) in Indian patients with relapsed or refractory multiple myeloma: A prospective, open label, non-comparative, multi-center study. Role: Principal Investigator
4. Evaluation of Cell-Based Vaccine Therapy – Dendritic Cell-Based Immunotherapy for Epithelial Ovarian Cancer Patients who have Failed Two Systemic Therapies (Part of the Multi Institutional CAR Project. Role: Co-Investigator; Funding Agency: Indian Council of Medical Research
5. Centre For Advance Research - Development of Dendritic Cell Vaccine for The Treatment of Recurrent/Metastatic Reproductive Cancers (A Multi Institutional CAR) Role: Co-Investigator; Funding agency: Indian Council of Medical Research

Completed Projects

1. Detection of M-proteins in Acetonitrile Precipitates of Serum by MALDI-TOF Mass Spectrometry (Patent filed in March 2020)
Role: Principal Investigator
Sensitivity of M-protein detection using our novel and cost-effective methodology is 98% as compared to the gold standard i.e., immunofixation electrophoresis. Manuscript accepted with minor modifications
2. Efficacy of Pioglitazone in Patients with Recurrent/ Refractory Inoperable High-Grade Osteosarcoma after Failure of First-Line Chemotherapy: A Pilot Study (Single-centre study) [CTRI REF/2021/09/047326]
Role: Principal Investigator

3. Phase II Study of GVDexa (Gemcitabine, Vinorelbine and Dexamethasone) regimen as salvage therapy in relapsed Hodgkin's lymphoma. Role: Principal Investigator
4. COVID-19 Vaccine Uptake in Patients with Multiple Myeloma and AL Amyloidosis: A Cross-Sectional Observational Study from India. Role: Principal Investigator

Lectures

- Psycho-oncology referrals: How and When?
- Psycho-oncology TeleECHO Educational program II
- Management of Elderly Transplant-Ineligible Patients with Newly Diagnosed Multiple Myeloma (ASH 2022 Update)- January
- Annual Mumbai Hematology Group Meeting
- Plasma cell leukemia: Molecular pathogenesis, Treatment and Recent Advances
- Mumbai Hematology Group Meeting
- Multiple Myeloma: Challenges and Opportunities for India
- IIT-Bombay, Department of Chemical Engineering
- Epigenetic Advances in the Diagnosis and Management of Lymphomas and Myeloma. Where are we in 2023?
- PathFinders Global Pathology Conference- 2023, Neuberger Diagnostics, Mumbai

Presentations

- Screening Technique for M-Proteins in Acetonitrile Precipitates of Serum Using MALDI-TOF Mass Spectrometry: A Comparison with Immunofixation Electrophoresis and Serum Free Light Chain Assay. Poster presentation at the 19th International Myeloma Workshop in Los Angeles, California (International Myeloma Society) & Mumbai Hematology Group Annual Meeting
- Recent updates of myeloma biology - Hematology Cancer Consortium Annual Meeting, Mumbai

Dr. Parathan Karunakaran

Courses completed

- NCG-EQuIP India – Quality Improvement Methodology course
- Revised Basic Course Workshop – Medical Education Technology

Conferences attended (as a faculty)

- 3rd MVR CANCON 2022, Wayanad – Speaker: AML Transplant for all?
- Hematology Cancer Consortium (HCC) 2nd annual meeting 2022, Mumbai – Speaker: Updates in T ALL
- Indian Myeloma Congress 2023, Bangalore – Panel discussant – Implementing MRD in Indian setting
- Mid Term Haemato-Oncology Update & Master Class, Chennai – Speaker: High risk CLL
- 2022 Haematocon Satellite Symposium, Chennai – Speaker: “How I treat High risk myeloma in 2022”

Dr. Gangothri S

Institution: (Sri Ramachandra Medical College and Research Institute)

Revised Basic Course; Workshop at Chennai

As per NMC (national medical commission); 19th to 21st October, 2022

Certificate course

Revised Basic Course Workshop in Medical Education Technology (Teaching, Adult learning, and communication skills)

Research Projects

- Ongoing: SOCCER trial
SOCCER: phase two randomised trial comparing organ preservation after Short course radiation Or Chemoradiation and Consolidation chemotherapy in rectal cancer
- Ongoing NAGA trial
Neoadjuvant chemotherapy followed by Surgery versus Surgery followed by adjuvant chemotherapy for resectable Gastric adenocarcinoma- 2x2 Factorial Phase 3-Multicentric Randomized Controlled Trial Study Acronym- NAGA study (Neoadjuvant vs Adjuvant Gastric Adenocarcinoma)

Conference Abstracts

1. Abstract poster presentation in ESMO gynaec oncology FEB 2023
Prognostic factors and outcome in ovarian adult granulosa-cell tumours: A retrospective real-world data .Authors:R.K. Spartacus, G. Selvarajan, J. Perumal Kalaiyarasi, S. Velusamy, U. Prakash, V. Radhakrishnan.

DOI: <https://doi.org/10.1016/j.esmoop.2023.100850>

ESMO-ASIA congress 2022 selected for travel grant award 2-4, December, 2022

Conferences/CMEs - 20th Meeting of the Women's Cancer Initiative at Tata Memorial Hospital, Mumbai

"Mystique: exploring the rare or controversial" 14th to 16th October, 2022

Oral paper presentation Indian data on rare tumors (Germ cell tumor)

Panelist

Panel Discussion on How do I treat - Sarcoma / Endometrial stromal sarcoma

ISMPO (Indian Society of Medical & Pediatric Oncology) and ISO (Indian Society of Oncology) being organized under the aegis of "Freedom from Cancer Relief and research Foundation" at Chennai, INDIA

28th -30th October, 2022

Oral Paper Presentation

1. Forecasting factors and outcomes in hawkish inflammatory breast carcinoma - A single center data exploration
2. The continuing conundrum in oligometastatic breast carcinoma: A real-world data
3. NABH MOM Committee member of the institute

Dr. Prasanth S

Case based panel discussion on Cardio oncology survivorship in Survivorship workshop during PHOCON 2022, New Delhi

Achievements/Awards/Prizes

- Selected for St Junes Infection Prevention and control Program – completed distant learning portion – secured Travel grant for in person component to be conducted in Kolkata in May
- Secured the Travel grant for St Junes POEM Research Methodology workshop to be conducted in Istanbul, Turkey in April

Dr. Gargi Das

Future projects

Randomised control trial on “Nasogastric tube feeding versus oral feeding for treatment of moderate to severe acute undernutrition in children with cancer: a randomized, open-label, parallel-group, phase III trial”.

Organised Tamil Nadu Puducherry Pediatric Oncology Meet in April
Participated in a debate at TAMPOS, Madurai in January

Dr. Jerin J Ovett

- Second prize in Quiz competition in 12th Annual Conference in Clinical Practise Guidelines in Oncology
- Coronavirus Disease – COVID 19 Testing in Asymptomatic patients planned for Day Care Systemic Therapy: A Tertiary Cancer Centre Experience – Indian Journal of Medical and Pediatric Oncology
- COVID – 19 in children with cancer in low and middle income countries: Experience from a Cancer Centre in India – Pediatric Hematology and Oncology
- Rare case of Acute Hemolytic Anemia in a patient with newly diagnosed Multiple Myeloma: Maintaining fine line between Occams razor and Hiccams dictum – Indian Journal of Medical and Pediatric Oncology

Dr. Saikrishna Kolluru

Autologous Stem cell Transplantation in Non Hodgkins Lymphoma - ISBMT 2022 – April 8/2022

Final Year – 2020

Dr. Mangai Suseela Murugesan

- Quiz – 2nd prize – CPG Oncology Meet – 18/12/2021
- Oral presentation – APBMT – 9/10/2021
- Poster ISMPO ISOCON – 28/10/2022
- Quiz 3rd prize – CPG Oncology meet – 17/12/2022
- Quiz – 3rd prize – TAMPOS – 29/1/23
- Presentation – CEDAR SIOP meet on Burkitts Lymphoma – 3/2/23

Dr. Ramkumar Mummorthy

- Poster presentation – October 2022 – HCC conference Mumbai
- Poster presentation – TAMPOS 2023
- 2nd runner up in TAMPOS Quiz
- Poster presentation in Korean Society of Hematology

Dr. RK Spartacus

- Oral presentation – ISMPO ISOCON – 28/10/2022
- E-Poster ESMO Gynec 2023
- Oral presentation TAMPOS 2023

Dr. Prabhat Ganju

- Poster presentation – International Myeloma Society Annual Meet
- Poster presentation – TAMPOS 2023

Dr. Abhishek Charan

- Oral paper Presentation – RGCON 2023 Delhi
- Oral presentation ISMPO 2022 Chennai

Dr. Kritthivasan Venkatakrisnan

- Oral paper presentation – ISMPO 2022 – Chennai
- Oral paper presentation – 5th Emirates Pediatric Hematology and Oncology Conference
- Poster presentation – ISBMT 2023

Second Years – 2022

Dr. Pragadeesh T

- Winner Quiz IMSOS
- Oral Paper presentation – ISBMT

Dr. Navya Manasa Vuriti

- Poster presentation ISMPO 2022

Dr. Siddappareddigari Kishore Kumar

Poster presentation HCC – TMH Mumbai

Guest Lectures

Dr Vijay Patil, TMH, Mumbai gave a lecture on oral metronomic therapy in August

- Dr Nithya Ramnath, Professor, Medical Oncology, University of Michigan, on “Real world evidence informed cancer research” in August
- Dr Kundavi Shankar, Senior Consultant, MMM hospital, Chennai, gave a talk “onco-fertility updates” in September
- Dr. Vincent Rajkumar (Professor, Division of Hematology, Department of Internal Medicine, Mayo Clinic, Rochester, Minnesota) titled “Leadership and Mentorship in Medicine: Lessons from Mayo Clinic in January

PEDIATRIC ONCOLOGY

Dr. R.Venkatraman, Professor and Head of the Department

Dr.T.K.Balaji, MD – Assistant Professor

- a) Total New Patients: 208 (previous year: 181)
- b) Total number of inpatients chemotherapy prepared- 7334 (previous year: 4390)
- c) Total number of outpatient’s chemotherapy prepared- 5171(previous year: 5757)
- d) Transplant
 - i. Allogeneic- 6 [haplo 3, sib 3] (previous year 4)
 - ii. Autologous- 3 (previous year 5)
- e) Procedures
 - i. Lumbar puncture: 1396 (previous year 1253)
 - ii. Bone marrow aspiration and biopsy: 212 (previous year 192)
 - iii. Central line: 156 (Previous year 132)

BLOOD BANK

Dr.G. Deepa Devi, MD, Head of the Department

Medical Officer	Dr.Y. Swapna, M.B.B.S, DCP
Senior Resident	Dr.P. Sunantha , MD,DNB

Other Staff: Technicians, Staff Nurse, Data Entry Operator, Social Worker & Counsellor

Test	Donor Statistics (Total Collection -6962)		Patient Statistics (Total Screening -8950)	
	No	%	No.	%
Blood Grouping	14,425		18,413	
Rh Typing	14,425		18,413	
HBsAg+VE	33	0.49	157	1.8
HIV+VE	6	0.09	78	0.90
HCV+VE	6	0.09	25	0.29
SYPHILIS +VE	22	0.33	-	-
MALARIA +VE	2	0.03	-	-

Component Statistics

Total Transfusion	18053
Packed Red Cells (PRC)	6519
Random Donor Platelet(RDP)	5641
Fresh Frozen Plasma (FFP)	4888
Single Donor Platelet (SDP)	816
Granulocyte Concentrate (GC)	189

Total Crossmatching	8,684	
Total Camps	58	
Total Camp Collection	3722	
Total Plasma issued to Reliance Life Science	4298	
Therapeutic Plasma Exchange	21	
Peripheral Blood Stem Cell Collection	Autologous	53
	Allogenic	27
Donor Lymphocyte Collection	By Apheresis	-
	By Blood Collection	4
Therapeutic Leucoreduction	11	
Therapeutic Phlebotomy	25	

Future projects

1. Advanced Immunohematology including
 - A. Monospecific differentiation by Gel Column Technique in AIHA work up
 - B. Patient antibody screening
 - C. Rh and Kell matched PRBC transfusion
2. Implementation of Point Of Care Testing in Patient Blood Management
3. Implementation of NAT in donor screening

Ongoing Project

Study on analysis of factors associated with voluntary blood donation and determinants influencing the intent to repeat blood donation.

Academics

Dr. Sunantha,

Panelist

KOGS (Kancheepuram Obstetric and Gynaecological Society) international and national conclave - transfusion support in massive obstetric hemorrhage in July

Dr.G.Deepa Devi,

Completed Basic Course in Biomedical Research as mandated by National Medical Council (NMC) in April

Attended:

- CME - CHETTRANSCON 2022 Right Blood Product, Right Quantity, Right Patient organized by Departments of Transfusion Medicine and Pathology in association with Indian Society for Blood Transfusion & ImmunoHaematology, Tamil Nadu chapter at Chettinad Hospital and Research Institute in June
- Attended Webinar on Calculations in Transfusion Medicine conducted by Transfusion Medicine Academic Society in July
- Online CME Therapeutic Apheresis Current Practices and Advancement conducted by Department of Transfusion Medicine & Haematology, NIMHANS, Bengaluru in July
- Online curriculum set forth by Efforts Consulting (Accredited with council for Six Sigma Certification (CSSC) USA) and awarded the title of certified yellow belt in December
- Webinar by AIMS Jodhpur IIT Jodhpur joint conclave and workshop on stem cells, cellular therapy, gene therapy and tissue engineering (JCSTE 2023) held at AIMS Jodhpur in March
- Webinar on Recent amendments in D&C act and rules pertaining to blood centers organized by Transfusion Medicine Academic Society in March

Dr.Y.Swapna

Completed

Basic Course in Biomedical Research as mandated by National Medical Council (NMC) in April

Attended:

- CME - CHETTRANSCON 2022 Right Blood Product, Right Quantity, Right Patient organized by Departments of Transfusion Medicine and Pathology in association with Indian Society for Blood Transfusion & ImmunoHaematology, Tamil Nadu chapter at Chettinad Hospital and Research Institute in June
- Attended Webinar on Calculations in Transfusion Medicine conducted by Transfusion Medicine Academic Society in July
- Online CME Therapeutic Apheresis Current Practices and Advancement conducted by Department of Transfusion Medicine & Haematology, NIMHANS, Bengaluru in July
- Pursued Patient Blood Management by Werfen Academy India
- Completed Academic writing course from SWAYAM

Dr. P.Sunantha

Attended:

- CME - CHETTRANSCON 2022 Right Blood Product, Right Quantity, Right Patient organized by Departments of Transfusion Medicine and Pathology in association with Indian Society for Blood Transfusion & ImmunoHaematology, Tamil Nadu chapter at Chettinad Hospital and Research Institute in June
- CME by the International Society of Blood Transfusion (ISBT) conducted in June
- Online CME Therapeutic Apheresis Current Practices and Advancement conducted by Department of Transfusion Medicine & Haematology, NIMHANS, Bengaluru in July
- Webinar by AIMS Jodhpur IIT Jodhpur joint conclave and workshop on stem cells, cellular therapy, gene therapy and tissue engineering (JCSTE 2023) held at AIIMS Jodhpur in March
- Department conducted Apheresis training for Staff Nurses (Vadamalayan hospitals, Madurai and V.H.S. Chennai)

Latest Technology and Equipment

- Installation of advanced Apheresis equipment: Trima Accel Apheresis System which has the advantage of being simple, easy to use and quick to setup and 25-40% shorter procedure times than comparable Apheresis devices. The machine automatically records complete and accurate procedure data
- Software development for predicting and identifying the prospective donors and reduce the time lag between the transfusion request and issue of the desired component

ANAESTHESIOLOGY, PAIN & PALLIATIVE CARE

Dr. Kalpana Balakrishnan, DA, DNB, Associate Director, Head of the Department

Associate Director	Associate Professor
Dr. Kalpana Balakrishnan, MBBS, DA, DNB	Dr. C Punitha, MBBS, DNB Dr. Nivedhyaa S, MBBS, MD Dr. Subramanian, MBBS, MD Dr. Aravind Narayanan, MBBS, MD

Other Staff - Assistant Professor 10, Lecturer 1, Medical Officer 1

Palliative Care	
Associate Professor Dr. V V Meenakshi, MBBS, DA, MD, DNB	Medical Officer (Hospice) Dr. Shobha Patil, MBBS
Assistant Professor Dr. R Thendral, MBBS, DA	Medical Officer Dr. Zaib Tasneem Anwar, MBBS
Palliative Care Physician Dr. Daniel Raj, BDS	

DNB Residents

Dr. Rathipriya, MBBS

Dr. Jefrilla Nancy, MBBS

Total no of cases anesthetized - 4604
Total no of major cases - 3571
Total no of minor cases - 1033
Total no of PAC visits - 6934

No. of Elective cases	4480
No. of Emergency cases	124
Total No. of ASA 3 & ASA 4 cases	329
Cases done under General Anaesthesia	
Oral intubations	2089
Nasal intubations	386
Tracheostomies	107
No. of LMA	231

Cases done under Regional Anaesthesia/Analgesia	
Epidurals	637
Subarachnoid blocks	171
Upper Limb nerve blocks	14
Lower Limb nerve blocks	6
TAP Blocks	22
Combined Spinal Epidural	28
No. of Other Blocks	14

Cases done with the help of specialized airway equipment	
Awake Fibre-optic intubations	97
Double lumen tube insertions	29

Invasive Lines placements	
Central lines	161
Arterial lines	301

Cases done under anaesthesia outside OT

Radiology suite	
CT room	31
MRI suite	26
RFA/Microwave	7
Renograms	2
Bone scans	2
Ultrasound	8

Endoscopy/ultrasound suite	
Procedures under anaesthesia [ERCP/PTBD/PCN/ESR/Colonoscopy /PEG/SG /OGD/ DLDP etc]	222

D & C	
D & C	27
Cone biopsy	2

Pre-anaesthesia Checks	
New cases	4807
Review cases	2127
Total	6934

Palliative Care – Number of cases

Home visits	542
Phone call service	2598
Psycho Oncology counselling	577
Ascitic Tapping	61
Dressing	205
NG tube insertion	50
Foley's catheterization	20
Bowel care	350
IV Medication / Hydration	30
Social worker needs fulfillment	60

	OPD	Ward	Hospice
New	1933	660	244
Review	4971	1974	65
Total	6904	2634	309

Pain Interventions	
No. of OPD cases	32
Total no. of interventions	17
Image guided	12
Others	13

Completed Projects

Dr.Kalpana & Dr.Punitha

- Completed data collection of "SQUEEZE- A prospective multi-centre international observational study of postoperative vasopressor use" conducted by European society of Anaesthesiology and intensive care

Dr.Aishwarya Ramakrishnan

- Prospective randomized study to assess the feasibility of performing opioid free anesthesia with ketamine for elective modified radical mastectomy. Opioid free anesthesia Trial completed in March
- Quality improvement project to mitigate delay in the discharge process of oncology patients admitted to private ward- team member in the above project done for Equip India cohort 2022

Ongoing Projects

- Dr.Kalpana & Dr.Punitha, Effects of anaesthetic agents on natural killer cells and biomarker releases during stage 3 Epithelial ovarian cancer surgery: A prospective pharmacodynamics cohort study
- Dr. Meenakshi V V, Assessing the needs and concerns of families and children with advanced cancer receiving treatment at a tertiary cancer centre - A prospective, observational study
- P.I in Effects of Anaesthetics on colorectal cancer outcomes
- Dr. Prasanna Vani. Prehabilitation in ovarian cancer cytoreductive surgery and its effect on post-operative morbidity (PROSPERITY): A Randomized controlled trial
- Dr. Sahithya Sriman. Efficacy of percutaneous electrical neuro-stimulation (PENS) of auricle as an opioid sparing postoperative analgesic technique in cancer endometrium patients
- Dr.Poorna, Prospective randomized study to compare the efficacy of neurolytic ganglion impar block and combined superior hypogastric plexus with ganglion impar block for pain relief in patients with progressive cervical cancer

Future Projects

Dr. Kalpana & Dr. Punitha

- About to start a multicentre observational study I-INFUSE- Practice pattern of intraoperative Fluid therapy in elective major gastrointestinal cancer surgeries in India initiated by Tata memorial Hospital

Academics

- The Department has commenced 3-year DNB Palliative Medicine course affiliated to the National Board of Examinations in Medical Sciences (NBEMS) from this year. Two candidates are currently pursuing the course
- The Department has received accreditation for 4 seats for the conduct of 2-year FNB Onco-Anaesthesia course affiliated to National Board of Examinations in Medical Sciences (NBEMS). Candidates are expected to join shortly

Dr. Punitha C

- NAC 2022 at Benagaluru and presented a poster in September
- Attended training program in “Emergency Point-of-Care Ultrasound” at Apollo Simulation Centre, in Chennai in November
- SOAPCCON - Society of Onco-Anaesthesia and Peri-Operative Care Annual Conference at Mumbai
- Attended ISSPCON 2023 at Amristrar
- Completed BMET for stand-alone super speciality hospitals conducted by SRMC

Dr. Prasanna Vani

- Participated as a delegate in the International Collaboration for Research Methods Development in Oncology (CReDO) workshop organized by Tata Memorial Centre and National Cancer Grid in March.

Dr. Aravind Narayanan

- SOAPCCON - Society of Onco-Anaesthesia and Peri-Operative Care Annual Conference at Mumbai
- Attended Chronic Pain Workshop WIN-PAIN by TN Govt Specialty Hospital in Chennai.
- SAARC AA - South Asian Association for Regional Cooperation - Anaesthesia Association Conference at Cochin
- Attended 9th Annual National Conference of Indian Musculo-Skeletal Oncology Society at Chennai
- Attended "Psycho-oncology Hands-on Skill Workshop" at the 9th IMSOS Conference at Chennai
- Dr. Nairita Das, attended training program in “Emergency Point-of-Care Ultrasound” at Apollo Simulation Centre, in Chennai in August
- Dr.Poorna, attended CME on 'Managing the dying patient' in October&CME by Radiology department, CI(WIA), Chennai in December
- Dr.Vallary, attended training program in “Emergency Point-of-Care Ultrasound” at Apollo Simulation Centre, in Chennai in November

Pain and Palliative Care

Dr. V V Meenakshi

- IAPC lecture series every Monday
- Completed Refresher course in palliative medicine by Trivandrum Institute of Palliative Society
- Attended workshop on Management of Pleural effusion and role of In dwelling catheters by BD Pharma at Chennai
- Attended Revised Basic course workshop by Sri Ramachandra Medical College
- PALCON-23 – Palliative Care Conference by MGMCRI
- Attended Pre Conference workshop on USG in Palliative care at IAPCON 2023&International Conference of Indian Association of Palliative Care
- Started on Renal Palliative Care course by IAPC

Dr. R Thendral

- IAPC lecture series on Monday
- Completed Refresher course in palliative medicine by Trivandrum Institute of Palliative Society
- Attended workshop on Management of Pleural effusion and role of In dwelling catheters by BD Pharma at Chennai
- Attended Pre Conference workshop on Spirituality in Palliative care & Systemic Review at IAPCON 2023 & International Conference of Indian Association of Palliative Care
- Started on Renal Palliative Care course by IAPC

Dr Daniel Raj

- IAPC lecture series on every Monday
- Attended workshop on Management of Pleural effusion and role of In dwelling catheters by BD Pharma at Chennai
- Undergoing Neuro palliative care course by International NeuroPalliative Care Society (INPCS), KIPCER and KMC, Manipal
- Attended Pre Conference workshop on Communication Skills in NeuroPalliative care at IAPCON 2023
- IAPCON 2023 – International Conference of Indian Association of Palliative Care

Dr. Jefrilla Nancy

PALCON-23 – Palliative Care Conference by MGMCRI

Dr. Rathipriya,

PALCON-23 – Palliative Care Conference by MGMCRI

Mrs. Vinutha

- Completed Certificate course in counselling skills in cancer and Palliative care – A Blended learning program by KIPCER and KMC, Manipal
- Completed Diploma in Mental Health and Counselling by SCARF and NIMHANS
- Attended Pre Conference workshop on Cognitive Behavioral Therapy & Spirituality at IAPCON & International Conference of Indian Association of Palliative Care, S/N Kowsalya, IAPCON 2023 – International Conference of Indian Association of Palliative Care, S/N Kowsalya, S/N Aleena Xavier, S/N Lilly, Hands on workshop on Colostomy care organized by Cancer Institute (WIA).

Lectures:

Dr. Kalpana Balakrishnan

- Respiratory issues in palliative care - CCEPC course in July
- Society of Onco-anaesthesia and perioperative medicine Best 5 practice changing papers of last decades in Onco-Anaesthesia in August
- ISMPO-ISOCON 2022- Palliative Pain and Symptom management in October
- Faculty Physiotherapy palliative care interface in September
- Assessment and Management of pain – CCEPC course in January
- Chaired a session on Opioid sparing anaesthesia or Opioid free anaesthesia - what is truly achievable – SOAPC Webinar in January
- Oncology Palliative care track – chaired the session in IAPCON 2023 in February

Dr. Karthik AR

- Moderated an Online Lecture on “Cannabinoids in Palliative Care” at IAPC Academy Lecture Series in June
- Lecture on “Role of Prehabilitation in Onco-Surgeries” at TNISACON-2022 held at Madurai in July
- Lecture on “Can’t intubate & Can’t ventilate - newer guidelines” at Puducherry ISACON-2022 held at Puducherry in October
- Dr.Aishwarya Ramakrishnan, Faculty in difficult airway workshop in ISACON 2022, Madurai in July
- Dr.Poorna, Chairperson at JAAC 2022, Mysore Topic - Understanding cancer pain & palliative care in December & Speaker at ISSPCON2023, Amritsar Topic - Robot-arm assisted CT guided Pain procedures in February

Paper Presentations

- Dr. Punitha C, National Airway conference 2022- Poster Presentation “Anaesthetic challenges during Tracheal Y stent placement in Malignant Central Airway Obstruction – a case series”
- Dr. Prasanna Vani, paper in the Indian Society of Anaesthesiologists National Conference-ISACON titled “Peri-operative anaemia and its association with post-operative complications in major cancer surgeries - A retrospective analysis” in the Kop's Award category in November
- Dr.Sahithya Sriman, paper in AACA 2022 ,the International conference conducted by – Korea anesthesia and Pain titled “ Asystole following forward displacement of larynx post general anesthesia in carcinoma tongue patient – A case of carotid sinus hypersensitivity”

CME/Seminar

- Advocacy programme about Pain & palliative care was conducted at Semmancheri by Dr. R. Thendral, Mrs.Vinutha in July
- The Department conducted a one-day CME programme titled OASyS-2022 (Onco-Anaesthesia Symposium and Synopses). The programme had speakers from various Oncological Centres in South India and was attended by delegates from all over Tamil Nadu in September
- Organized webinar on Managing the Dying Patients for World Hospice and Palliative Care Day in October
- Advocacy programme about Pain & palliative care was conducted at Semmancheri by Dr. Meenakshi V V, Dr Daniel Raj, Mr. Thirumal Prashanth in December
- Christmas Celebration at Mahaveer Ashray Hospice in December
- Pongal Celebration at Mahaveer Ashray Hospice in January
- Advocacy programme about Pain & palliative care was conducted at Ashok Nagar by Dr. R. Thendral, Sr. Kousalya and SW Mr. Ranjith in January

- Our team arranged a no-frills activity for the children at the Paediatric ward at Dr. V. Shantha campus. The event was conducted to celebrate movement and play as part of normal routine in the lives of all kids even if they are in hospital. This activity was intended for International Childhood Cancer Day, March. The event, which was spearheaded by Dr. V.V. Meenakshi, ably supported by Ms. Vinutha

Awards/Achievements

- Dr. Nivedhyaa Srinivasaraghavan&Dr. Prita Raj- completed the cognitive and skills evaluations in accordance with the curriculum of the American Heart Association Advanced Cardiovascular Life Support (ACLS) Program and Basic Life Support Program (BLS) issued at TACT Academy for clinical training, Chennai in November
- Dr. Aravind Narayanan, completed CCEPC (Certificate Course in Essentials of Palliative Care) at Chennai, CI(WIA) in October
- Dr.Aishwarya Ramakrishnan, Secured second prize in paper presentation in SOAPCCON 2022, held in TMH Mumbai in August
- Dr.Poorna, completed CCEPC (Certificate Course in Essentials of Palliative Care) certification course Part A in October
- Dr Meenakshi V V, Dr R Thendral, Dr Daniel Raj, First prize for poster presentation on Management of Malignant Bowel obstruction in the community at IAPCON 2023
- Dr. Jefrilla Nancy, First prize for paper presentation on Difficult Communication at PALCON 2023
- Dr. Rathipriya, First prize for paper presentation on Searching in the dark at PALCON 2023

MOLECULAR ONCOLOGY
Dr. T.Rajkumar, Professor and Head of the Department

Faculty

Professor	Associate Professor
Dr K Sabitha Ph.D., Dr.G.Gopal Ph.D., Dr Samson Mani Ph.D	Dr R Balaji Ph.D
Assistant Professor Dr.R.Priya, Ph.D Dr Mayilvahanan Bose M.Phil.,Ph.D Dr A K Deva Magendhra Rao Ph.D	Lecturer Dr.B Meenakumari. M.Sc Ph.D

Other Staff: Scientific Assistant, Lab Technologist, Animal House Technician, Research Associate, Lab Technician, Social Investigator, Senior Research Fellow, SRF – INSPIRE & CSIR, INSPIRE JRF & Junior Research Fellow.

Molecular Oncology diagnostic unit

Test Services offered	No. of samples
BCR ABL Qualitative analysis	137
BCR ABL Quantitative analysis	1137

NGS Gene panel service

List of Gene Panel services offered in Molecular diagnostic unit

1. BRCA1, BRCA2 and TP53 gene panel
2. Breast Cancer extended gene panel
3. Cancer hotspot gene panel
4. Colon & lung cancer gene panel
5. Lung RNA fusion gene panel
6. Hereditary Gastro-intestinal cancer gene panel

Hereditary Cancer Detection & Prevention Program

Registered Patient's till March 2023:	1891
Blood sample obtained from:	1020 patients
Blood collected from HBOC cases:	579
Blood collected from HNPCC cases:	284
Blood sample collected from LFS/LFL cases:	13
Blood sample collected from other cancers/Screening cases:	131
Predictive testing offered for families:	42

Completed Projects

A randomised controlled trial of neoadjuvant chemotherapy with FEC vs. concurrent chemo-radiation with FEC in locally advanced breast cancer and identification of predictive biomarkers for pathologic complete response.

Summary: Breast cancer is the most common cancer among women worldwide. Locally advanced breast cancer (LABC) is the most advanced, non-metastatic stage of the disease, accounting for more than 60%

of the presentation cases in India. Neoadjuvant therapy is used to treat LABC as it helps in downsizing the tumor before the surgical intervention. Pathological complete response (pCR) is the most successful tool to monitor the response to the neoadjuvant therapy. A combination of 5-FU, EP, and CP is routinely employed in the treatment of breast cancer. The study developed a reverse phase high performance liquid chromatography (HPLC) -UV method for simultaneous quantitative analysis of the triple-drug and their metabolites in plasma using RP-HPLC system with a C18 column and a diode array detector. An efficient method of protein isolation forms the primary step in any proteomic experiment. Development of detergent-free methods is well studied for their applicability to Mass Spectrometric analysis. Protein isolation method using Trifluoroethanol and ammonium bicarbonate from breast cell line and breast biopsy tissues was exploited. This method was used to develop a workflow combining MALDI Mass spectrometry profiling and Liquid Chromatography Mass spectrometry. This method would enable rapid screening of samples before deep proteomic profiling is performed. Core needle biopsy samples from LABC patients undergoing neoadjuvant therapy with FEC- based chemotherapy with (NACT/RT) or without (NACT) concurrent radiation. Four samples each of pCR and no-pCR in each arm were used for the analysis. Protein isolation using 2% SDS was followed by trypsin digestion and tandem mass tag labelling of peptides. The labelled peptides were purified and LC-MS/MS analysis was done in triplicates. As a result, 733 and 805 non-redundant proteins were repeatedly identified and quantified at a minimum confidence level of 95%. Of these, 133 and 180 proteins were significantly differentially expressed between the two groups, including 32 and 42 upregulated and 99 and 138 downregulated in no-pCR respectively in NACT and NACT/RT. Based on the cut-off fold change, statistical significance, and review of literature, ten proteins were selected for further validation using western blot analysis and immunohistochemistry (IHC). The potential predictive markers shortlisted for validation were thrombospondin-1 (THBS1), decorin (DCN), and tenascin C (TNC). Mast cell carboxypeptidase (CPA3), mimecan (OGN), transforming growth factor β 1 (TGFB1), calcyclin binding protein (CACYPB), leucine-rich repeat containing protein-59 (LRRC59), heteronuclear ribonucleoprotein AB (HnRNPAB), and high mobility group protein B1 (HMGB1). Western blot analysis in the LC-MS/MS sample set revealed a consistent pattern of expression, but lacked statistical significance due to the small sample number (n=4/group). Further, external validation using IHC in 29 pCR and 130 no-pCR in NACT, and 32 pCR and 71 no-pCR in NACT/RT, archived formalin fixed paraffin embedded sections, were collected. THBS1 expression was found both in tumor and stroma, and was significantly overexpressed in no-pCR of both the groups, along with TNC and DCN. CPA3 was significantly overexpressed in no-pCR in NACT. In the NACT/RT arm, HnRNPAB was significantly upregulated and HMGB1 was downregulated in no-pCR. Prognostic significance of the makers was also assessed, only HMGB1 showed significant difference in the overall and disease-free survival.

Funding Agency: DST SERB Amount: 55 lakhs

Ongoing projects

1. "Identification of tumor suppressor kinases inactivation by pathogenic genetic variants and analysis of consequential dysregulated signalling in gastric cancer."

Brief Abstract

The Tumor Suppressor (TS) kinases (n = ~42) inactivation by Loss of Function (LOF) mutation are also considered as drivers of cancer. LOF mutations can occur as result of truncation mutations, or mutations in the conserved structural residues of the kinase protein (20 hotspots) leading to inactivation. Gastric Cancer (GC) is known to harbour high mutation load however few specific driver mutations are known. By focusing on LOF mutations in TS kinase genes we seek an alternate mechanism to uncover potential drivers of tumorigenesis.

Summary of Progress

Targeted resequencing analysis of TS kinases in GC was performed in a sample set comprising of 96 samples (Gastric Tumour (n = 45), Paired Normal (n = 43), Apparent Normal (n = 4), Pooled Lymphocytes (n = 1), Gastric Cancer cell Lines (n = 3)). Novel mutations in tumour suppressor kinases using targeted resequencing have been identified in the study which can reveal how the activity of the mutated kinases influences Gastric tumorigenesis. TS kinase genes RPS6KA2, HIPK2, MAP3K21, MAP4K1, ROR2, SYK were found to be downregulated in both Tumour and cell lines when compared to paired normal and normal gastric epithelium. HIPK2 shows downregulation at both mRNA and protein expression in Gastric tumour tissue samples. HIPK2 over expression in GC cell lines suppresses cell proliferation and EMT transition in SNU638 cells and promote cell proliferation in AGS cells. Based on the findings it has been observed that depending upon the cellular context HIPK2 acts either as a tumour promoter or suppressor. Effect of Proteasome Inhibitor MG132 and HDAC inhibitor Panobinostat on HIPK2 protein expression indicate that HIPK2 levels can be increased by proteasome and HDAC inhibitors. Reduction in cell growth was observed in combinational treatment by proteasome and HDAC inhibitors in both the cell lines when compared to individual treatment. To study the relationship between NLK and HIPK2, we generated a NLK knockout AGS cell line using the CRISPR CAS9 RNP system. Based on the results it has been observed that decreased NLK expression leads to increase in HIPK2 level which in turn increases TP53. Targeted inhibition of NLK in GC cells shows that there are no significant changes in the cell proliferation rate with inhibitor treatment. To increase the sensitivity of NLK inhibitor to GC cells, we tested the effect of combinational treatment NLK inhibitor along with HDAC inhibitor. Decreased cell proliferation rate was observed in combinational treatment when compared to individual treatment of inhibitors in both the cell lines AGS and SNU638.

2. ID-PPP-OTN: Infrastructure and Development of Technologies for Pre-clinical evaluation, Product establishment and Platform integration for Onco-theranostic applications.

Brief Summary

(i) ID-PPP-OTN focuses on the utilitarian translation of engineered antibodies for therapeutic and diagnostic applications in the domains of clinical and molecular oncology, with the following specific goals:

- (a) Production of clinically relevant onco-antibodies using recombinant DNA technology;
- (b) Utilization of the antibodies produced in the consortium for furthering therapeutic leads already established by the consortium partners into pre-clinical validation and subsequent product development;
- (c) Integration of platforms for highly sensitive and specific detection of onco-biomarkers using point-of-care detection tools.

Summary of Progress:

Generation of isotype switched anti CD99 antibody (IgG2a) and Single-chain variable fragment (scFv) fragment for anti- CD99 targeting of Ewing's sarcoma cells.

(ii) Ewing's sarcoma expresses very high levels of CD99 protein on its cell surface and is used as a diagnostic marker for cancer. Barring the thymocytes, the expression is far lower in other cells and the effect on ES is more than in other tissues. Additionally, higher levels of CD99 expression are seen in other soft tissue sarcomas and lymphoblastic lymphomas and leukemias and several other cancers, enlarging the scope of use of anti-CD99 antibodies. Previously we have raised and characterised an IgM subtype monoclonal antibody against CD99. Here we performed isotype switching from IgM subtype to IgG2a and synthesised and expressed scFv fragment with the Complementary Determining Sequences (CDR) and Framework Regions of IgM heavy chain and Kappa light chain. For this, the framework and CDR sequences were identified using a combination of 5' RACE PCR and DNA sequencing. The

framework and CDR sequences thus identified were cloned into a IgG2a subtype backbone and expressed in a mammalian expression system. The expression vectors expressing the light and heavy chains were dual transfected into HEK293 cells and stable transfectants were selected using double antibiotic selection. The antibody was purified from culture supernatant following growth in serum free medium and tested for anti CD99 reactivity using ELISA. The ScFv fragment was constructed using two linker sequences varying in length. The ScFv fragments were cloned into a bacterial expression vector and expressed and purified from E. coli cells. Both the isotype switched antibody and ScFv fragments were tested for reactivity using recombinant CD99 full length protein, extracellular domain of CD99 and cell extracts from Ewing's sarcoma cells such as A673 and RDES.

Validation of in vivo imaging system

The in vivo imaging system was validated by assessment of 1. Fluorescence cellular imaging was validated by labelling PBMCs with CFSE and quantified using Berthold LB 983 Nightowl II, 2. Bioluminescence imaging was validated using a luciferase expression construct that was transfected into HEK293 cells by liposomal method and cell lysates were assessed for luciferase expression. 3. Fluorescence in vivo imaging equipment validation was carried out using male BALB/c at 5-6 weeks of age. For in vivo imaging, the PBMCs labelled with CFSE were mixed with matrigel in equal proportion and injected subcutaneously into the anaesthetised mice. The in vivo image of CFSE labelled PBMC injected mice as captured by the in vivo imaging system.

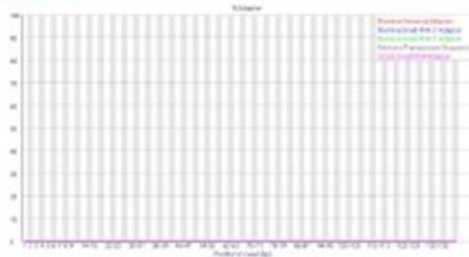
3. Whole Genomic and Transcriptomic Characterization of Right and Left Sided Colon Cancer Amount: Rs. 69, 00,000/-

Colon cancer is the third most common cancer and fourth most leading cause of cancer-related deaths in the world. In India, colon cancer is the seventh most common cancer in males and fifth most common in females. The age-standardized rates of colon cancer incidence in India have been estimated to be 3.1 and 2.5/100,000 for males and females, respectively. Colon cancer is known to harbor several molecular alterations that transform normal glandular epithelium into invasive adenocarcinomas. Non-invasive fecal occult blood test (FOBT) is recommended as a screening strategy for people aged 50 and above. This facilitates identification of colon cancer patients at an early stage. Although incidence of colon cancer in India is relatively low, five-year survival rates are one of the lowest in the world as patients often present at an advanced stage due to lack of screening. Genomic and whole transcriptomic characterization of colon tumors will help us to understand the molecular differences associated with different anatomical origins. Thus, our study will aid in the identification of specific mutation and dysregulated non-coding RNA. The study can inform genomic mutation/variations and dysregulated RNA (non-coding RNA) which can alter biological processes fundamental to tumor development and progression. Tissue samples were collected from the patient undergoing surgery colon carcinoma. Only histologically confirmed tissues scored by pathologists having a tumor score above 70% only were used for the study. The normal tissues adjacent to tumor tissues were used as paired normal. A total of 18 colon carcinoma specimens were collected and stored at -80° C. Total of 5 ml of peripheral blood was collected after informed consent. DNA and RNA were extracted from Tumor and normal tissue samples. The quality of DNA was verified by 1% agarose gel electrophoresis and was quantitated by Nanodrop. The concentration of the DNA was between 150 ng/μl to 1040 ng/μl. The intact genomic DNA was enriched using Agilent Sure Select all Human exon v6 capture kit. The exon libraries were sequenced using Illumina NovaSeq 6000 platform at a depth of 100x in paired-end mode (2 X 100 bps). The raw fastq data were quality-checked using FastQC.

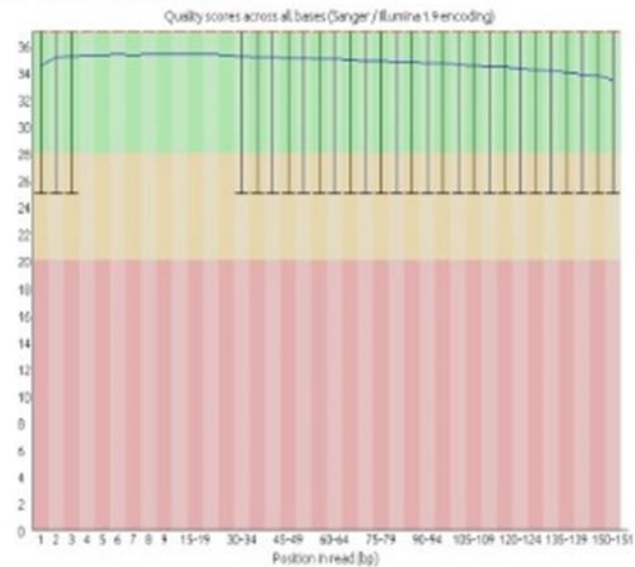
Basic Statistics

Measure	Value
Filename	trin_S1B1_R2.fastq
File type	Conventional base calls
Encoding	Sanger / Illumina 1.9
Total Sequences	11032847
Sequences flagged as poor quality	0
Sequence length	0-151
NGC	49

Adapter Content

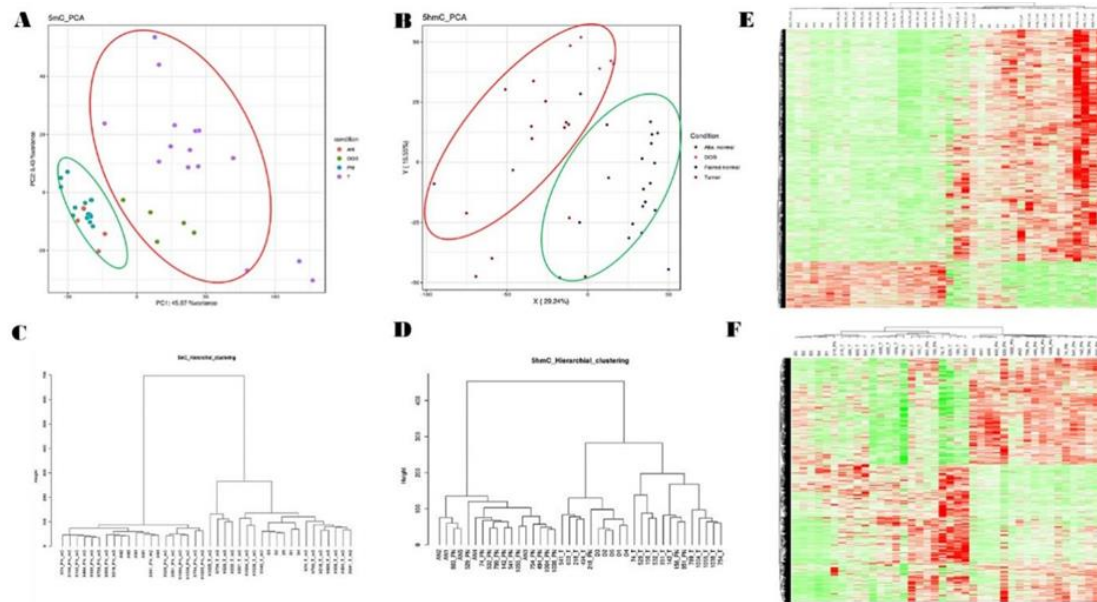


Per base sequence quality



4. Locus-Specific Enrichment Analysis of 5-Hydroxymethylcytosine Reveals Novel Genes Associated with Breast Carcinogenesis

DNA methylation (5-methylcytosine or 5-mC) is one of the significant epigenetic modifications involved in regulating transcription. Promoter methylation (5-mC) is often associated with gene repression while the oxidized form of 5-mC, known as 5-hydroxy methylcytosine (5-hmC), is involved in gene activation. Several genome-wide analyses have identified differentially methylated regions (DMRs) and differentially hydroxymethylated regions (DhMRs) between the tumor and normal tissues. DMRs and DhMRs could potentially alter the gene expression signatures in cancer. The imbalance of methylation and hydroxymethylation is the key mechanism hypothesized to drive breast cancer. The study provides a detailed perspective on methylation-based epigenomic instability and found the loci-specific 5-mC and 5-hmC signatures in breast cancer. The global loss of 5-hmC was found to be associated with TET downregulation. Genome-wide profiling revealed that DMRs enriched mostly in the proximal regulatory regions involved in gene silencing whereas the DhMRs accumulated in the distal regulatory regions act as enhancers in transcriptional activation. Loss or gain of 5-hmC levels was found to be positively associated with gene expression of certain cancer-specific loci. Cumulative evidence shows that the imbalance of 5-mC and 5-hmC is a novel phenomenon orchestrating the epigenetic machinery of breast cancer.



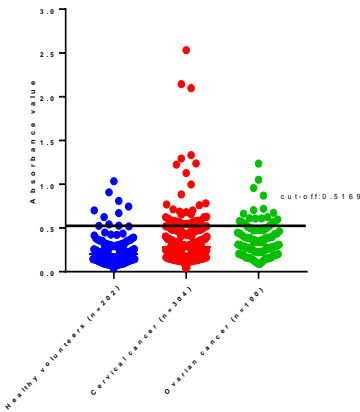
5. Modeling of EWS-FLI orthotopic homograft reporter mice

Ewing's sarcoma (ES) is caused by a unique chimeric fusion protein (EWS-FLI) formed as a result of tumor-specific translocation and has a great potential for targeted therapy. In the field of ES, although the chimeric protein represents a clear therapeutic target, there is a lack of proper disease model to study the disease and to identify a specific drug. This project proposes the generation of a novel EWS-FLI orthotopic allograft reporter mice generated using cells representing the osteochondrogenic progenitors as ES cell of origin. These cells will be transfected with human EWS-FLI and the construct will be modeled in such a way that, the EWS-FLI activation dynamics, will be mirrored by reporter gene expression, which in turn may serve as a surrogate end point. ES represents a model of transcription factor mediated oncogenic transformation. Hence, we plan to make use of EWS-FLI responsive elements which is expected to allow an enhanced sensitivity and efficient recognition of the target gene promoter by EWS-FLI oncoprotein. These transfected cells would be used to develop in vivo heterotopic and orthotopic homograft. The generated mouse model will be validated by treating with various in-house developed lead compounds/ peptides. This experimental model of ES could serve as the basis for future studies aimed at understanding the pathophysiology and as a preclinical tool to identify potential molecules against EWS-FLI.

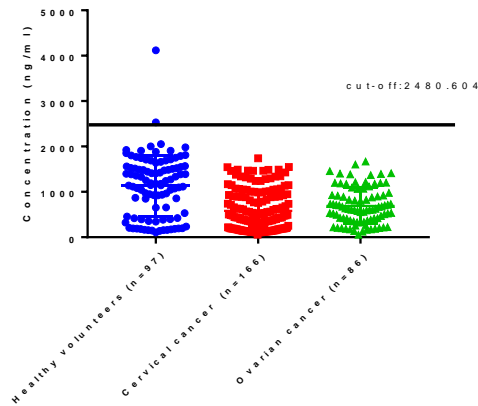
6. Development of dendritic cell vaccine for the treatment of recurrent/metastatic reproductive cancers

This ongoing study aims to (i) evaluate the utility of the identified biomarkers- SPAG9 and its autoantibody) for early detection and diagnosis in cervical and ovarian cancer patients in southern and northern regions of India and (ii) follow up the treated cervical and ovarian cancer patients for persistence/ progression and recurrence, (iii) employ identified biomarkers (iv) carry out the preclinical evaluation of therapeutic and prophylactic SPAG9 cancer vaccine in the animal model system; (v) evaluate cell-based vaccine therapy for epithelial ovarian cancer patients who have failed two systemic therapies (vi) carry out in-depth research on immune responses in ovarian cancer patients immunized with dendritic cell-based immunotherapy from southern and northern regions of India. Blood samples of 455 cervical cancer cases, 135 Ovarian Cancer patients, and 204 healthy controls have been collected (before or after neoadjuvant chemotherapy) for early detection and diagnosis of biomarker study. Follow-up of these patients is ongoing. Using GMP grade recombinant SPAG9 protein for DC based vaccine immunotherapy, a three arm study was initiated wherein the randomization code was broken after the 4th patient completed her 22-week evaluation in total of 4 patients. 3 patients had received DC cells primed with SPAG9 protein and 1 patient had received DC cells primed with tumor lysate. We

found very encouraging results in 1 patient treated with DC based vaccine primed with rhSPAG9 protein. Immune response assays performed in all four patients showed that tumor lysate and rhSPAG9 primed DCs were potent inducers of Th1 response. None of the patients had elevated levels of Anti-nuclear antibody (ANA) post vaccination. For the two-arm trial, eight patients were screened, out of which three patients have been recruited. All three patients completed the scheduled six vaccine doses.



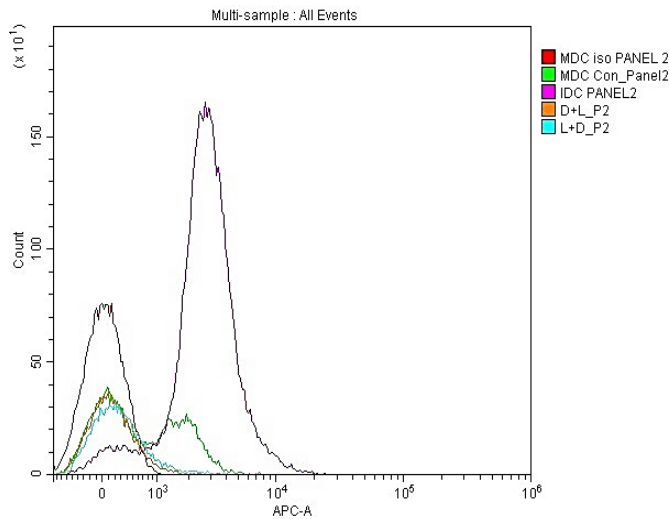
Serum autoantibody levels



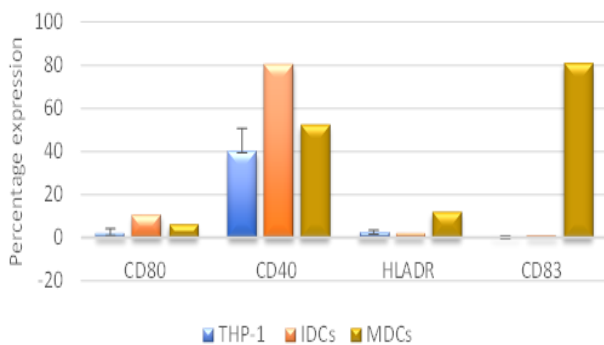
Serum SPAG9 levels

7. “Studies on improving the efficacy of dendritic cell vaccines by targeting Indoleamine 2,3 dioxygenases 1 and 2”.

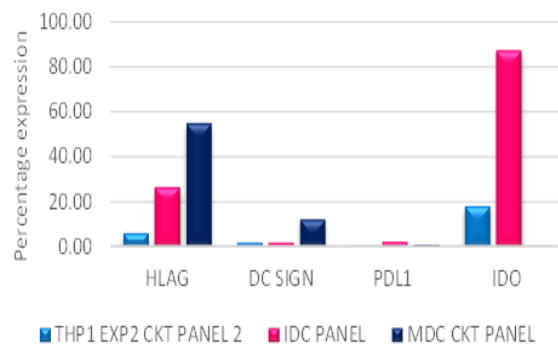
The aim of the project is to improve the efficacy of dendritic cell vaccines which are used as immunostimulatory agents in treatment of several cancers. Immune checkpoints are regulators of the immune system. These pathways are crucial for preventing the immune system from attacking cells indiscriminately. Some cancers can protect themselves from attack by stimulating immune checkpoint targets. Drugs or drug candidates that inhibit/block the inhibitory checkpoint molecules are sometimes known as checkpoint inhibitors; this idea is often referred to as immune checkpoint blockade, or simply checkpoint blockade. Indoleamine 2, 3 dioxygenases (IDO1 and 2) are considered immune checkpoints whose expression and activity is increased within immature dendritic cells, triple negative breast cancer cells as well as other cells in the tumor microenvironment. They belong to the family of enzymes that catabolize the first and rate limiting step of tryptophan metabolism along the L-kynurenine pathway. IDO1 expression is associated with the death of lymphocyte and NK cell populations, facilitating the infiltration of regulatory T cells as well myeloid derived suppressors. Hence targeting IDO1 and 2 may help improve the functional efficacy of dendritic cells which are potent immunotherapeutic adjuvants used for cell based immunotherapy. Expression of IDO1 in Immature and mature DCs treated with drug and tumor cell lysates prepared from TNBC cell lines.



Phenotypic expression Pattern



Phenotypic expression Pattern



8. OPTIMISTICCC (Opportunity To Investigate the Microbiome’s Impact on Science and Treatment In Colorectal Cancer) Large bowel microbiome disease network – Phase 2

Summary

In our previous phase 1 project “Large bowel microbiome disease network. Creation of a proof of principle exemplar in colorectal cancer across three continents” we collaborated with researchers in the UK, Chile, Argentina and Vietnam. We tested a low-cost method to collect faecal samples for microbiome research (by using bowel cancer screening cards or gFOBT) and showed that the microbiome is stable on developed gFOBT cards that are stored and transported internationally at room temperature. We showed that the faecal microbiomes of each country were distinct. However, despite these geographical differences in overall faecal microbiome profile, the CRC-associated microbiome of each country was similar. We would now like to build on this pilot project, by launching phase 2. The second phase is funded as part of a Cancer Research UK Grand Challenge - OPTIMISTICCC; the OPTIMISTICCC team represents an international consortium of researchers investigating the CRC-associated microbiome. The current study was planned with the following objective; to build on the phase 1 pilot project in which we showed that the CRC-associated faecal microbiome of non-Western countries resembles that of Western countries. Collecting more samples and more detailed data will allow us to further explore inter-country differences, as well as to build a more accurate Random Forest model in order to better determine the screening potential of the CRC-associated faecal microbiome with the view to developing a microbiome-based CRC screening test. Status – Sample collection for the study is ongoing, as on 31.03.2023, (43) cases and (40) controls have been collected. Additionally, prevalence and toxin carriage studies using Phase I samples have been completed.

Proposed Projects

1. Submitted a grant proposal to DBT in response to a Call for proposal under DBT-SAHAJ (2022-23). Project title “Establishing Live Förster (or Fluorescence) Resonance Energy Transfer (FRET) microscopy, Tissue and Cell imaging facility at the Cancer Institute (WIA)” Budget: 3.2 Crores
2. Project proposal submitted to DBT in response to a call for Letters of Intent (Lols) on ‘Cancer Disease Biology’ Title: “Deciphering the role of Mitochondrial Ribosomal Small Subunit Proteins MRPS10 and MRPS14 in Gastric Cancer metastasis.” Budget: 70 lakhs
3. Role of alternately nuclear localizing Mitochondrial Ribosomal Small Subunit (MRPS) Genes MRPS9 and MRPS23 in DNA Damage response and implications for tumorigenic phenotype in Breast cancer. Budget: 56 lakhs.

Academics

Dr. Mayilvahanan Bose

- Participated (virtual mode) in 48th Annual Conference of Indian Immunology Society “Infections, Vaccines & Immuno-Innovations for Human Health” organized by Department of Molecular & Human Genetics, Institute of Science, Banaras Hindu University, Varanasi, India in July
- Presented “Indian colorectal cancer microbiome: Experiences and insights from the inter-continental Large Bowel Microbiome Disease Network” in International Meeting on Human Microbiome: Research initiatives around the world (virtual mode), organized by the Instituto de Medicina Traslacional e Ingeniería Biomédica (IMTIB-CONICET) and the Instituto Universitario del Hospital Italiano Buenos Aires, Argentina in October
- Ms. Vaishnave attended APOCP11 Conference on Cancer Prevention & 11th General Assembly meeting of APOCP organised by Cancer Foundation of India at Kolkata in December. She also made an oral presentation at APOCP11 Conference on topic “Exploring the potential of autoantibodies as a diagnostic and prognostic biomarkers for gynecological cancer”

Poster Presentation

Mrs. Deepa Ramasamy, “The Landscape of 5-hydroxymethylcytosine in Breast Cancer” at the international conference “Frontiers in Cancer Science 2022” held in Singapore in November.

Lecture

- Dr Sabitha, “Protein Targets for Drug Design” & “Cancer Causes and Prevention” at School of Biosciences & Technology, VIT, Vellore in November
- Dr Gopal G, delivered Dr. Mrs. Kousalya Moorthy and Justice M.N. Moorthy endowment lecture at the Department of Biochemistry, Ethiraj College for Women, Egmore, Chennai- 6 titled “Mitoribosomal proteins in health and cancer” in June
- Dr. Samson Mani, “Epigenetic basis of Breast cancer” for MVR CANCON at Wayanad, in September.
- Dr. Samson Mani and Dr. Deva Magendhra Rao A K, at Srinivasa Medical College, Trichy as CME resource person for training in “Hands on workshop on DNA extraction techniques and analysis of BCR-ABL fusions” in September
- Dr R Balaji, “State of art in vivo pharmacology tool: Small Animal Imaging” at International Conference on Advanced Innovation and Research Challenges in Science and Technology

(ICAIRST 2023) at Vels Institute of Science Technology and Advanced Studies (VISTAS), Chennai –INDIA in March

- Dr. Mayilvahanan Bose, "Colorectal cancer: clinical insights from the inter-continental Large Bowel Microbiome Disease Network" Organized by Institution Innovation council of Aarupadai Veedu Medical College & Hospital, Puducherry in June and lecture on " Point of care diagnostics in cervical cancer: Current status in clinical practice and public health" in the International Conference on Advances in Biotechnology Dwaraka Doss Goverdhan Doss Vaishnav College in October
- Dr. Deva Magendhra Rao A K, "EPIGENETICS AND EPITRANSCRIPTOMICS OF CANCER" at Vellore Institute of Technology, Vellore in November

Training /Workshop

- Dr. Sabitha R& Dr. Priya Ramanathan, attended "3D Bioprinting for organ replacement using biogenerative engineering" Organized by Department of Biotechnology, Nanotech Research Innovation & Incubation, Centre PSG Institute of Advanced Studies Coimbatore-641004 in November
- Dr G Gopal, attended training programme in "Managing Technology Value Chains for Directors and Division Heads" sponsored by Department of Science and Technology, GoI, New Delhi at the Administrative Staff College of India, Bella Vista: Hyderabad in July
- Dr R Balaji, attended The Jackson Laboratory and ATNT Laboratories sponsored symposium on "Quality, Standards, Practices and Applications of Advanced research oncology models" Bengaluru –INDIA in December
- Dr. Priya Ramanathan, attended a one-day training program for Cytobank software at Beckman Coulter Facility in Bangalore in December

Dr. B. Meenakumari

- Participated in "Classification of BRCA and HRR variants (Run 7)"by European Molecular genetic Quality Network [EMQN], in July, run 8 in September and Run 9 in January
- Participated in National level e-workshop on "16s RNA gene: From primer designing to phylogenetic tree analysis", Centre for Bioinformatics training and research institute, Lucknow, in September
- Participated in "2022 Asia Pacific qPCR and digital PCR webinar" by Thermofischer Scientific, in October
- Participated in "5-Day Online Certificate Hands-on Technical Workshop in Genome Editing by CRISPR technology" in December
- Participated in "Genomic Variant analysis & Interpretation course" organized by CSIR-Institute of Genomics and Integrative Biology in February
- Ms. Anusha J, JRF, attended a hands-on basic flow cytometry course, held at NCBS in November.
- Mrs. Deepa Ramasamy and Ms. Megha Thippannah, attended a digital PCR workshop held at Thermo Fischer Scientific Lab, Gurgaon in March

- Mrs. T. Sangeetha & Ms. Srividya Limkar, participated in “2-Days Hands-on Workshop on Qiagen’s Digital PCR” in Department of Molecular Oncology, Cancer Institute (WIA), Chennai in January

Workshop:

- Dr. Samson Mani and Dr. Deva Magendhra Rao organized a two-day “Hands-on workshop on digital PCR” at the Department of Molecular Oncology in January. More than 20 participants from different institutes, hospitals, and colleges participated in the workshop and learned the handling and research applications of digital PCR in cancer diagnosis

Dr Gopal G, appointed as Project Assessment Committee (PAC) member for the Department of Science and Technology PAC committee on Interdisciplinary and Basic Science

World Day of Immunology in April

- Dr. Mayilvahanan Bose and Dr. Priya, lectures on “Emerging trends in Vaccinology” on the occasion of International Day of Immunology in April
- Dr. Priya Ramanathan, lecture on “Cell based vaccines Immunotherapy”
- Dr. Yasin Nazeer, Scientist - B, ICMR Vector Control Research Centre, Puducherry, lecture on “Emerging trends and field approaches in vaccine development”
- Dr. Aravinden, Assistant Professor, Dr ALM PG IBMS, Chennai lecture with the captivating topic “The Jekyll and Hyde story of conjugated Typhoid Vaccine in Children”. An e-poster competition on “Future vaccines - Concepts on future of the vaccines from development to delivery” was conducted as a part of International Day of Immunology celebrations

EPIDEMIOLOGY, BIO-STATISTICS & CANCER REGISTRY (EBCR)
Dr.Swaminathan R, Associate Director, Professor & Head of the Department

Dr.Swaminathan R, M.Sc, Ph.D (Statistics) Associate Director
 Dr.Rama R, M.Sc., Ph.D Associate Professor & Senior Bio-Statistician

Staff Strength: 136

Other Staff : PRO & Section In-Charge, Senior OP Assistant, Medical Record Technician, Senior Assistant, OP Assistant, Assistant, Social Investigator, Data Entry Operator, Ward Secretary, Computer Operator, Steno Typist, Data Manager (HBCR Project), Section In-Charge, Senior Investigator (FO), Technical Assistant, Early Career Fellow, Social Worker, Scientific Assistant, Staff Nurse, Health Worker, IEC Coordinator, Data Manager, Project Manager, Research Associate, Senior Biostatistician

Epidemiology, Biostatistics and Cancer Registry (EBCR)

The EBCR comprises several sections encompassing (i) patient services - OPD counters, medical record with lifetime follow up, documentation and digitization, (ii) Hospital Based Cancer Registry (HBCR) - established in 1954 handling routine hospital statistics for the administration, high-resolution data capture for research studies, (iii) Population-Based Cancer Registry (PBCR) - for statewide surveillance statistics on incidence pattern and trends, (iv) Biostatistics – handling all data analytics for faculty/students and (v) Epidemiology – randomization for clinical trials, design and conduct of descriptive/analytical epidemiological studies including molecular and (vi) training/teaching programs in all of the above for personnel at local, national and international levels.

Hospital Statistics

Statistics	No. of Cases
Total registered	1,76,179
New registration	13,622
Follow up/Review	1,62,557
Inpatient admission	12,359
New Admission	4,498
Readmission	7,861
New cancer patients	10,163

Region wise distribution of newly registered patients	No.of cases	%
Chennai city and suburbs	2,961	21.7
Rest of Tamil Nadu	8,782	64.5
Andhra Pradesh & Telangana	1,105	8.1
Assam	83	0.6
Karnataka	75	0.6
Kerala	73	0.5
Puducherry	134	1.0
Other States	338	2.5
Outside India	71	0.5
Total	13,622	100.0

Ongoing projects/studies

- (i) HBCR-RCC – fully funded by National Cancer Registry Program (NCRP), Indian Council of Medical Research (ICMR) - Principal Investigator: Dr. R.Swaminathan; Grant: INR 47,00,000/- per year
 The setting up of Hospital Based Cancer Registry in Regional Cancer Centres under NPCDCS scheme has been functional at the institute since April 2022. The study covered the following:
 - a. An HBCR registering all new cancer cases visiting the institute: The data for the period April 2022 – March 2023 revealed the following: The total cancer cases registered were 10,163 with a female preponderance (5,315, 52.3%) in the ratio of 1:1.1 Childhood cancers (0-19 years of age) comprised 3.5% while the majority were in the age group of 35-64 years (67.0%). Most

common cancers among men were mouth (538, 11.1%), stomach (437, 9.0%), anterior tongue (396, 8.2%) and among female were breast (1,508, 28.4%), cervix (714, 13.4%), ovary (367, 6.9%).

- b. The pattern of care and survival (POCS) study: High-resolution data abstraction for different survival outcomes is carried out by the registry social investigators using structured forms for 22 major cancers: (1) Breast, cervix and head and neck cancers: Data from case-record on 1883 patients indexed for treatment in 2021, 1,070 have been completed: 281 of cancer breast, 288 of cervix and 501 of head/neck cancers. (2) Cancers in Childhood, lymphoid and hematopoietic malignancies, other gynaecological malignancies: Data on 180 patients of all lymphomas, 254 of all leukemias, 299 of other gynaecological cancers, treated during 2021 are being abstracted from the case-records.

(ii) Population-based cancer registry studies

- a. Madras Metropolitan Tumour Registry (MMTR) – partly funded by NCRP of ICMR – Principal Investigator: Dr. R.Swaminathan.

Cancer surveillance statistics in Chennai city from year 1982 has been periodically made available in ICMR and IARC scientific publications. Data for the period 2013-2017 has been accepted for publication in the IARC flagship scientific publications series *Cancer incidence in five continents, Volume XII*. A total of 16,584 notifications of cancers diagnosed in 2020-2021 have been registered from about 158 sources till date. Data processing for duplication and other checks are in progress. The total incident cancers in year 2018 were 7,093 with a crude incidence rate (CIR) of 145.3 per 100,000 (Male: 136.5; Female: 153.9). Common cancers among men were lung (CIR: 12.7), mouth (12.3) and prostate (9.9); among women, the order was breast (52.0), cervix (11.5) and ovary (9.6). The estimated new cancer burden is 7,953 in year 2022.

- b. Cancer Institute (WIA) project in collaboration with Department of Health and Family Welfare, Government of Tamil Nadu – Tamil Nadu Cancer Registry Project (TNCRP) Principal Investigator: Dr.R.Swaminathan

TNCRP is a population-based statewide cancer surveillance study by the institute for generating cancer incidence statistics of entire Tamil Nadu from year 2012. The TNCRP report 2023 is a comprehensive account giving cancer incidence pattern by year, age-group, sex, district and site. The total numbers of incident cancers in Tamil Nadu in 2018 were 77,138 with a crude incidence rate of 96.1 per 100,000 populations (Male: 86.6; Female: 105.5). The common cancers among men were stomach (6.5), Mouth (6.4), lung (6.3) and large bowel (5.4); among women, the order was breast (27.0), cervix (17.7) and ovary (5.8). The estimated new cancers in 2022 were 88,750. An online reporting system for TNCRP has commenced and is continuing.

- c. BNY Mellon Technology India (P) Ltd funded project, Cancer survival in Tamil Nadu – Principal Investigator: Dr. R. Swaminathan

Ten districts were chosen for this population-based cancer survival study. The number of cases with complete follow up until year 2022 out of the total registered in 2016 are given in brackets: Ariyalur (269/596), Coimbatore (1,544/3,398), Dindigul (1,060/1,814), Erode (1,107/2,257), Kanchipuram (2,412/4,900), Kanyakumari (1,001/2,016), Krishnagiri (456/982), Madurai(1,345/2,828), Perambalur(220/492) and Viluppuram(1,187/2,664). Linkage with cancer mortality data from vital statistics division is continuing. The vital status (alive/dead) data on the rest of the patients as on January 1, 2022 is planned by undertaking house visits

and/or seeking the help of woman health volunteers of Makkalai Thedi Maruthuvam scheme of government of Tamil Nadu in year 2023.

- (iii) DBT India Alliance and Wellcome Trust project – HPV and Oral cancer. PI-Dr. N.V. Vani; Supervisor: Dr. R. Swaminathan

This molecular epidemiological study was funded to the tune of 1.8 crores for five years during 2019-2024. There are two components: (i) A longitudinal study on the dynamics of oral HPV infection in healthy individuals in Viluppuram district – Commencement was delayed due to Covid restrictions. A total of 4463 samples were collected after enumerating the eligible subjects through a household survey. The prevalence of oral HPV DNA was 5.6%, and the incidence was 4.4% after a follow-up of 2322 participants at a 15-month mean duration. The persistence of oral HPV DNA is 9%, with a clearance rate of 91% at nine months, and none persisted at 16 months. In general, oral HPV in healthy individuals is present as a transient and clinically inactive infection. Most of the HPV 16 strains (82.6%) align with the cervical HPV isolate reported in Kerala (MW012745). (ii) Survival outcome of oral and oropharyngeal cancer patients by HPV status – clinical samples were collected from 250 patients along with data abstraction. The prevalence of HPV DNA-positive oral and oropharyngeal cancer is 56.8%, common in females. However, clinically active HPV infection in these tumors is 2.75% of the DNA-positive samples. These patients are being followed up after treatment to evaluate their outcomes. Molecular analyses of the samples in the research lab and subject recruitment and follow-up in the field work are ongoing.

New project

- (i) Access Cancer Care India (ACCI) project funded by Kings College London (KCL) through the International Agency for Research on Cancer (IARC) – Principal Investigator: Dr. R. Swaminathan; Grant – GBP 172,926

This is a multi-centric study concerned with the implementation of an affordable and equitable integrated multi-cancer early detection package to improve cancer outcomes in resource-constrained settings. Viluppuram district is the chosen area for this study. This involves stakeholders engagement, key informant interviews, focus group discussions, designing an affordable intervention, implementation, evaluation and sustenance. Staff recruitment is in progress to be followed by training in tools concerning implementation research.

Training imparted

Observer training on basic statistical/epidemiological principles and methods, as part of continuing department education program, was imparted to 21 post graduate and 4 graduate students of statistics/Data science/Mathematics from 5 institutions Chennai and Trichy varying from 2-4 weeks. Observer training and hands-on experience in molecular biology techniques like biomolecular extraction, PCR, and RT-PCR techniques were imparted in the molecular epidemiology laboratory to 4 post-graduate students of Biotechnology / Biomedical sciences from Chennai varying between 1-3 months.

Academics

- R. Madhanagopal and D. Ezhil, best poster on “Oral human papillomavirus infection in healthy individuals –a molecular epidemiological study” at the International Conference on Current Trends in Biomedical Research conducted by Centre for Transdisciplinary Research, Department of Pharmacology, Saveetha Dental College & Hospitals at Chennai in September
- Dr. N.V. Vani, paper on “Human Papillomavirus and Oral Cancer - Interim Report from a research project” at the 9th International World Dental & Oral Health Congress held at Chennai in August

Presentation

- Dr. R. Swaminathan, lecture on “Cancer surveillance framework for HPV research in India” at HPV International Conference, HPV CON 2022 conducted by the Support Group for HPV Research India (SHRI), Meenakshi Medical College, Hospital and Research Institute, Kanchipuram, during August. Lecture on “Extended follow up through linkage of study cohorts to local PBCRs” at the International meeting of Principal Investigators on HPV vaccination in New Delhi in April
- Dr. P. Sampath, presentation “Utilization of Medical Records for Cancer Registry: the need to identify and improve a core data set” in the 22nd Annual National Medical Records Conference held at The Madras Medical Mission, Chennai during March
- Dr. Vani, R. Madhanagopal, and D. Ezhil, attended an online workshop on Bioinformatics - New frontier on life sciences horizon conducted by BDG Lifesciences Pvt Ltd. India in June and hands-on workshop on Qiagen’s digital PCR conducted by Department of Molecular Oncology, Cancer Institute (WIA), Chennai in January
- Dr. Vani, attended a virtual workshop on 15th Annual short course in clinical research methodology conducted by the Department of atomic energy – Clinical Trials Centre, Tata memorial centre, Mumbai in October & November

PREVENTIVE ONCOLOGY
Dr.J.S.Malliga, Head of the Department

Faculty	
Dr.J.S.Malliga, MD(O&G)	Associate Professor & Head
Dr.V.Dhanuraja, MD	Assistant Professor
Dr.Premila Grace D, BSMS, MA	Medical Officer
Dr.J.Preena, MBBS	Medical Officer – Pudukkottai Project
Dr.M.Vanitha, BDS	Dental Surgeon – Villupuram Project
Dr.Vidhya, BDS	Dental Surgeon – Gummidipoondi Project
Dr.R.Lavanya Devi, BDS	Dental Surgeon – Thiruvannamalai Project

Staff Strength: 74

Other Staff: Biostatistician, Social Investigator, DEO, Health Worker, Social Worker, Program Manager, Staff Nurse, Driver, Radiographer, Security, Unskilled worker, Lab Technician.

Ongoing Programs / Projects – Departmental Statistics

- District Cancer Screening Program, Chennai [2008 Onwards]
- Villupuram Cancer Screening Project, Villupuram [Sep 2014 Onwards]
- Gummidipoondi Cancer Screening Project, Gummidipoondi [April 2016 onwards]
- Pudukkottai Cancer Screening Project, Pudukkottai [Mar 2018 Onwards]
- Tiruvannamalai Cancer Screening Project, Tiruvannamalai [Nov 2018 Onwards]
- Sivagangai Cancer Screening Project, Devakkottai [Apr 2022 Onwards]
- Mammomobile Project [Dec 2016 onwards]

Cancer Awareness Programs (Chennai)	
Total Community based	57
Total Members attended	3081
Screening Programs	
Total number of persons screened	5701
Total number of women screened	5593
Total number of men screened	108
Clinical Outcome	
Oral cancers	02 (Under treatment-01, Outside treatment-01)
Breast Cancer	03 (Treated-03)
Cervical Cancers	
Pre-cancers (CIN 2+)	16(Treated-05, Under evaluation-09, Outside Treatment-02)

Invasive Cancer	07(Treated-04, Under evaluation-01, Outside treatment-02)
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Cancer Awareness Programs (Villupuram)	
Total Community based	45
Total Members attended	2561
Screening Programs	
Total number of persons screened	5931
Total number of women screened	442
Total number of men screened	5489
Clinical Outcome	
Oral cancers	Nil
Breast Cancer	01
Cervical Cancers	
Pre-cancers (CIN 2+)	18 (Treated-06, Under evaluation-03, Outside Treatment-09)
Invasive Cancer	03 (Outside treatment-03)

Cancer Awareness Programs (Gummidipoondi)	
Total Community based	34
Total Members attended	2725
Screening Programs	
Total number of persons screened	4837
Total number of women screened	195
Total number of men screened	4642
Clinical Outcome	
Oral cancers	05 (Treated-03, Outside treatment-02)
Breast Cancer	Nil
Cervical Cancers	
Pre-cancers (CIN 2+)	04 (Treated-03, Under evaluation-01)
Invasive Cancer	02 (Treated-01, Under evaluation-01)

Cancer Awareness Programs (Pudukkottai)	
Total Community based	46
Total Members attended	2876

Screening Programs	
Total number of persons screened	5226
Total number of women screened	234
Total number of men screened	4992
Clinical Outcome	
Oral cancers	01 (Treated-01)
Breast Cancer	03 (Treated-03)
Cervical Cancers	
Pre-cancers (CIN 2+)	04 (Treated-01, Under evaluation-03)
Invasive Cancer	02 (Treated-02)

Cancer Awareness Programs (Thiruvannamalai)	
Total Community based	59
Total Members attended	4911
Screening Programs	
Total number of persons screened	5525
Total number of women screened	258
Total number of men screened	5267
Clinical Outcome	
Oral cancers	Nil
Breast Cancer	05 (Treated-04, Under Treatment-01)
Cervical Cancers	
Pre-cancers (CIN 2+)	12 (Treated-08, Under evaluation-04)
Invasive Cancer	09 (Treated-06, Under treatment-01, Outside-02)

Cancer Awareness Programs (Devakkottai)	
Total Community based	46
Total Members attended	2176
Screening Programs	
Total number of persons screened	4682
Total number of women screened	332
Total number of men screened	4350
Clinical Outcome	
Oral cancers	Nil
Breast Cancer	01 (Outside treatment-01)

Cervical Cancers	
Pre-cancers (CIN 2+)	03 (Treated-01, Under evaluation-02)
Invasive Cancer	03 (Treated-01, Outside treatment-02)

Mammomobile Project -Villupuram

Mobile mammogram is operational in Villupuram district since 2016. Around 1205 women have been screened in the facility during 2022-23 and one case of early breast cancer detected and treated.

Ongoing Research

1. 2021-23: The development and evaluation of an artificial intelligence (AI) image recognition device to improve cervical pre-cancer screening and management in low- and middle-income countries – A multi-centric study led by WHO/IARC – Institute PI – Dr. Malliga J S
2. 2022-24: Evaluating The Effectiveness Of Vaginal Self Sampling Against Provider Sampling In A HPV DNA Based Cervix Screening Program - Principal Investigator- Dr. Malliga J S

Proposed Projects

Rotary Club of Madras has proposed to install a digital mammogram unit in Devakottai centre of Sivagangai Cancer Education and Screening center. The facility will also serve as a diagnostic facility benefitting women of four districts (Sivagangai, Ramanathapuram, Virudhunagar, and Parts of Pudukkottai). Turnkey work has been initiated and the facility is expected to become functional from the middle of year 2023.

Academics

Dr.Malliga J.S

- FOGSI Gynec Oncology Committee –Salem – ‘Pre-cancer Lesions of Cervix’ in August
- AOGIN Coimbatore ‘Barriers to Screening in the Community’ in November
- AOGIN Coimbatore- ‘HPV Tests in India-Which to Choose?’ in November
- CMC Vellore ‘Policy Analysis of Cervical Cancer Screening in India’ in December
- OGSociety Cochin – ‘Cervical cancer Outcomes- Impact of Screening’ in January
- IMA Coimbatore – ‘Screening for Cervical Cancer’ in January

Lecture

- Thiruvainallur BDO Office Awareness Program, Thiruvainallur, P.N.Kalpana in April
- World Cancer Day - Cancer Awareness Program Government Arts and Science College, Thiruvainallur, Dr.V.Dhanuraja in February
- World Cancer day-Cancer Awareness Program Govt Arts college for women, Pudukkottai, Dr.J.S.Malliga in February
- World Cancer day-Cancer awareness program for transgenders PMSSS hall, Pudukkottai, Dr.J.S.Malliga in February
- Cancer Awareness for female students in Thiruvannamalai, Dr.V.Dhanuraja, Dr.R.Lavanyadevi in February

- International Women's day-Cancer Awareness program for GGHSS Teachers, Thiruvannamalai, Dr.R.Lavanyadevi in March
- International Women's day-Cancer Awareness program for St.Joseph International School, kodikottai, Devakottai, K.Murali in March
- International Women's Day - Women Cancer Awareness Program, Nursing Institute, Villupuram.P.N.Kalpana in March

Departmental events

Sivagangai Cancer Screening Project, Devakkottai – 15thApril 2022

A land with a hospital building was donated to Cancer Institute (WIA) by Mangaarathinam and Vallal Mena Charitable trustees Mr.Sevugan and family to start and operate a cancer screening center. The handover of the premises and inauguration of the center was held on 15.04.2022 in presence of Tamil Nadu Health Minister and the district Collector.The screening center will benefit a total population of 13.4 lakh of Sivagangai and Ramanathapuram districts.This project is supported by Mangarathnam Trust and Cancer Institute Foundation Inc., USA.

PREVENTIVE ONCOLOGY (RESEARCH DIVISION)

Dr. R. Vijayalakshmi, Head of the Department

Dr Sridevi Duggirala M.Sc., Ph.D., (Microbiology)

Assistant Professor

Other Staff : Technologist, Scientific Assistant, Laboratory Technician, Full time / Part time PhD Scholars & Project Interns

Diagnostics

- NABL Accreditation for Medical Testing – Surveillance Audit for NABL testing was conducted as In person Audit by NABL assessors on 22-5-2022. The laboratory got accredited once again with satisfactory surveillance.
- BC360 Prognostication assay –This test is being offered in our department using the Nanostring ncounter platform (Nanostring technologies). The test was started on 8th March 2023. This Breast Cancer 360 panel consists of gene codeset that is designed for profiling tumour biopsies

and characterizing breast cancer specific gene expression patterns associated with the tumour, the immune response, and the microenvironment which impact tumour metastasis.

Molecular Diagnostics Test	Samples screened during (March 2022 -23)
BC 360 Prognostication test	10
Lung Cancer Diagnostics EGFR mutation testing and ALK RET ROS MET fusion testing	258
CMV quantitative Viral load	810
HBV quantitative Viral Load	207
HCV quantitative PCR Viral Load	39
COVID Testing – Qualitative	2194
AML PCR Panel (Basic and Extended) by qPCR	55
ALL PCR Panel (Basic and MLL): by qPCR	21
PML-RARA Qualitative by qPCR	6
PML-RARA Quantitative by qPCR	5
HPV testing – Qualitative	8178
SERUM CHROMOGRANIN by ELISA	5

Molecular Prevention

Ongoing Program

Community Screening Project for Cervical Cancer using Molecular HPV testing with partial genotyping. Funding: CSR 1.5 crores. Source: Chennai Petroleum Corporation, Manali, Chennai

We had 10,580 women attending the cervical cancer awareness program of which 10395 married women consented to participate. We had 185 (1.74%) women non-compliant to screen and did not want the screening. We tested 10,395 women who offered their cervical scrapes for DNA testing. The median age of the women in the screened group was 45 years. We found 20 samples (1.92%) invalid for the assay with no representation with a lack of beta-globin gene amplification. As per our inclusion criteria, the participating women were married and sexually active. Out of the 10375 women tested using Cobas 4800 high-risk HPV test, high-risk HPV was found in 595 (5.73%) women. We found 127 women (1.22%) found to be infected with HPV 16, 36 women (0.34%) harboring HPV 18, other 12 pooled high-risk HPV was found in 382 women (3.68%), and multiple mixed infections were found in 50 women (0.48%).

Academic Research

Govt of India Research Grants Sanctioned (New Grants)

- Dr. Vijayalakshmi (PI) - "Development of a Therapeutic resistance and relapse prediction model for paediatric acute lymphoblastic leukaemia using artificial Intelligence techniques." Funding agency – ICMR, Amount – Rs 51, 00,000 and "Development of Dual color plasmonic immunoassay for visual detection of salivary vimentin for early diagnosis of oral cancer". Funding agency - SERB (CRG) Amount – Rs 48,00,000
- "Oral microbiota and early oral cancer (MICRO-ORAL): A pilot study to standardize sequencing of oral microbiota in saliva samples" a collaborative study with Public Health Foundation of India (PHFI).
- Bioprinting a novel polymer-based 3D nanocomposite scaffolds coated with anti-cancer drug for oral tumour model. (Ad-Hoc ICMR)

Ongoing Govt of India Research Grants

- ✓ Dr Vijayalakshmi (Co-PI) Genetic and Proteomic expression profiling in clinical stages of Oral Submucous Fibrosis patients. Funding agency – ICMR (2021-2014). Amount: Rs 23, 75,000 (Ad-Hoc ICMR 2021-14385) and Development of novel nano-silymarin gel for therapeutic efficiency in oral submucosal fibrosis. Funding Agency – ICMR (2022-2025). Amount : Rs 33,41,130 (No.5/4/2-4/Oral Health/2021-NCD-II)
- ✓ Dr Sridevi Duggirala (PI) Patient derived xenografts for combinatorial therapy of PAK1 and TKI inhibitors as a preclinical platform for EGFR positive NSCLC patients. Funding agency - SERB (TARE) Amount – 15, 00, 00 Lakhs

Completed Projects – Ph.D degree Awarded

Proteomic Expression Profiling With Validations and Antifibrotic Potential Of Silymarin In Oral Submucous Fibrosis Using In Silico And In Vitro Studies. Research Scholar: Dr Divyambika Srinivas MDS, (Part Time). Funding: GATE, SRIHER and ICMR

Oral Submucous Fibrosis (OSMF) is associated with high risk of malignant transformation. The current study aimed to identify and validate differentially expressed proteins using proteomics. Since silymarin, has been found to exhibit antioxidant, antifibrotic and anti-inflammatory effect, and the present study also investigated the *in vitro* effects of silymarin in arecoline induced fibrosis of human buccal fibroblasts (HBF)

Methods:

Proteomics was done in tissue samples of OSMF, OSMF with oral squamous cell carcinoma (OSCC) and healthy controls (HC) using two-dimensional electrophoresis (2DE) and mass spectrometry. The results were validated using immunohistochemistry (IHC). Immunoexpression of known markers involved in OSCC pathogenesis such as OCT3/4, SOX 2, COL1A1, LAMC2, S100A7, MMP-9, ECAD, GLUT 1, PTN, COX 2 were evaluated. *In silico* studies were carried out using known antifibrotic compounds and *in vitro* studies were performed to evaluate the antifibrotic potential of silymarin. Silymarin was further taken up for preparation of oral mucoadhesive gel

Results:

Proteomic analysis revealed 23 upregulated proteins and validation using IHC for proteins, namely 14-3-3 ϵ , CA 1, HSP 70 and vimentin showed significant overexpression in OSMF. Silymarin gave good results with docking studies and Molecular Dynamic Simulation (MDS). The RT PCR for genes namely Col1A1, Col1A2, Col1A3, OCT3/4, SOX2, LAMC2, vimentin, MMP-9, TGF- β , GLUT 1, CA 1, PTN and HSP70 was downregulated after silymarin treatment

Conclusions:

Proteomic studies with validations revealed novel dysregulated proteins in OSMF. Silymarin showed potent antifibrotic potential in *in silico* and *in vitro* studies. Silymarin-based mucoadhesive gel demonstrated promising results in the pre-formulation studies.

Awards of the Ph.D Work

- Best e poster, Faculty Original research and Manguluru study Group Award – IAOMR 2020
- Overall Best scientific poster with Cash award– National conference on Real World evidence in Oncology 2023 at Tirunelveli in April

Papers Published out of the Ph.D work completed

- Venugopal DC, Caleb CL, Kirupakaran NP, Shyamsundar V, Ravindran S, Yasasve M, Krishnamurthy A, Harikrishnan T, Sankarapandian S, Ramshankar V. Clinicopathological Significance of Cancer Stem Cell Markers (OCT-3/4 and SOX-2) in Oral Submucous Fibrosis and Oral Squamous Cell Carcinoma. *Biomedicines*. 2023; 11(4):1040
- Venugopal, D.C.; Senthilnathan, R.D.; Madhavan, Y.; Maanvizhi, S.; Sankarapandian, S.; Ramshankar, V.; Kalachaveedu, M. Preparation and Characterization of Silymarin Gel: A Novel Topical Mucoadhesive Formulation for Potential Applicability in Oral Pathologies. *Gels* 2023, 9, 139
- Moorthy A, Venugopal, DC*,Shyamsundar V, Madhavan Y, Ravindran S, Kuppuloganathan M, Krishnamurthy A, Sankarapandian S, Ganapathy V, Ramshankar V. Identification of EGFR as a Biomarker in Saliva and Buccal Cells from Oral Submucous Fibrosis Patients—A Baseline Study. *Diagnostics* 2022, 12, 1935
- Venugopal DC, Ravindran S, Shyamsundar V, Sankarapandian S, Krishnamurthy A, Sivagnanam A, Madhavan Y, Ramshankar V. Integrated Proteomics Based on 2D Gel Electrophoresis and Mass Spectrometry with Validations: Identification of a Biomarker Compendium for Oral Submucous Fibrosis—An Indian Study. *Journal of Personalized Medicine*. 2022; 12(2):208
- Divyambika CV, Sathasivasubramanian S, Vidya Rani S, Ravi David A, Harinee S, Ramshankar V. Clinicopathological correlation of Cyclooxygenase 2 expression in oral submucous fibrosis – An immunohistochemical study. *J Int Soc Prevent Communit Dent* 2021;11:553-60

Study of Synergistic Therapeutic Effects Of Metformin And Vemurafenib In Thyroid Cancer And Integration Of Cyclic Amp Reporter System Based On Synthetic Transgene Approach
Research Scholar: Latha Durai MS., (Research, UK)

Funding: DST, Women Scientist Program

Several studies reveal that resistance to vemurafenib is associated with the activation of ERK/MAPK pathway and hence inhibition of this pathway may selectively potentiate the vemurafenib-induced cell death in ATC. Combining targeted therapies with metformin is a potential strategy to enhance the efficacy of targeted drugs. Metformin has been recently recognized as a low-toxicity “broad-spectrum”

therapeutic approach that could simultaneously target important pathways involved in cancer treatment. Our studies provide the evidence that the combination of Metformin and vemurafenib suppressed the progression of tumor and induced cell death. We investigated the underlying molecular mechanism behind this anticancer activity of Metformin and vemurafenib which demonstrates that it has synergistic antitumor effects by inhibiting the MAPK pathway, by phosphorylating an AMPK pathway and by activating the silence iodide metabolized genes in ATC T238 cells. Our promising in-vitro results may pave a way to accomplish clinical radioiodine treatment for anaplastic thyroid cancer after testing in in-vivo models.

Precise analysis of gene expression is essential for gene function analysis in mammalian cells for functional genomic studies and clinical applications (Lim, 2010), (Lienert et al., 2014). Presently, most of the therapeutic drugs which elicit their biological functions via cAMP signaling are involved in a wide variety of biochemical to cellular processes (Reimann and Gribble, 2016), (Zaccolo, 2011). There are methods employing to report the presence of cAMP include a CRE reporter gene assay, radio-ligand binding assay, various fluorescence-based cAMP sensors and immunoassays; however they require specialized instruments, expensive reagents and antibodies. Furthermore, fluorescence assays remain limited to microscopic single-cell analysis and the radio-ligand binding assay is harmful to humans and the environment (Zhang and Xie, 2012), (Chen et al., 2015). Unlike established reporter systems which report cAMP indirectly through PKA/CREB/CRE signaling, we developed a transgene transcriptional tool that induces cAMP mediated gene expression and reports the intracellular cAMP directly in number of cAMP deregulated cancers including ATC cell line T238. Thus the reporter gene assay is non-radioactive, inexpensive, highly sensitive, and easy to set up and can be widely used as a biomarker to analyze molecular basis of cancer.

Our study concludes that Metformin and vemurafenib acts synergistically on the growth inhibition of Thyroid cancer T238 cells by suppressing MEK/ERK and by activating AMPK pathway and iodide metabolised genes which may lead to accomplish clinical radioiodine treatment for anaplastic thyroid cancer. Our promising in-vitro results may pave a way to accomplish clinical radioiodine treatment for anaplastic thyroid cancer after testing in in-vivo models. Our work also presents the orthogonal engineered transcription tool that can report the cAMP mediated gene expression directly. This simple reporter system works by introducing the engineered gene constructs in to mammalian cells and when the intracellular cAMP level surges, the cAMP binds to the engineered construct, transactivate the gene expression in a concentration-dependent manner in response to compounds that trigger cAMP level. Thus our present synthetic transcription factor can be widely used as a cell based assay to assess cAMP signaling as a basic inducible gene switch to fine tune cAMP mediated transgene expression and to identify agonists of GPCR triggered cAMP signaling, to screen the inhibitors of cAMP production and to determine the effect of phosphodiesterases. Furthermore, this cell based assay would be exclusively useful even under conditions in which there are alterations in intracellular cAMP levels or cAMP binding domain of PKA or the nuclear uptake of PKA. Thus measurement of intracellular cAMP may act as a Biomarker to diagnose cancers including anaplastic thyroid cancer.

Publications from the completed Ph.D Work

Durai L, Vijayalakshmi R, Karunakaran D. A novel reporter system for cyclic AMP mediated gene expression in mammalian cells based on synthetic transgene expression system. *Eur J Pharmacol.* 2019 Jul 15; 855:56-64. Epub 2019 Apr 26. PMID:31034821 (Impact Factor -4.432)

Latha Durai¹, Soundharya Ravindran¹, Krishnamurthy Arvind², Devarajan Karunakaran³, Ramshankar Vijayalakshmi⁴. Synergistic effect of metformin and vemurafenib (PLX4032) as a molecular targeted therapy in anaplastic thyroid cancer: an in vitro study. *Mol Biol Rep*, 2021 Nov; 48(11):7443-7456. (Impact Factor - 2.742)

Synopsis submitted for the Degree of Doctor of Philosophy (Ph.D.)

Comprehensive Characterisation of Oral Buccal Cancers and Oral Dysplasias from Indian Population

Research Scholar: Dr Vidyarani Shyamsundar MDS, (Part Time)

Funding: DST-TARE

GBC SCC is studied as an exclusive subsite of Gingivo Buccal complex. The samples studied comprised of validations in both early staged and locally advanced cancers along with pre cancer ie dysplasia simultaneously. This research project has emphatically shown the role of P53 and p16 regulator genes as the chief operators in the process of carcinogenesis in the presence of tobacco chewing habits. Further we have also shown that the p16 gene is not a surrogate marker for HPV 16/18 in GBC-SCC. The study shows that HPV is not involved in GBC cancers and is not a proposed cause. Additionally we show the role of various markers such as Beta-Adrenoreceptors, Osteopontin, Inhibin alpha pathways etc in carcinogenesis. The subset of the molecular biomarkers that are secretory proteins and that are significant were further tested in saliva of oral cancer patients to determine their efficacy in diagnosis and prognosis and can hence, further their use in clinical application. The secretory marker Osteopontin can be a promising marker to in rapid diagnosis at the community level.

Our promising in-vitro results lead to probable in-vivo studies, which can be done to explore the effect of drug propranolol (betablocker) can be adjunct in cancer prevention. The proteomic profiling gives insight into the various probable markers. The validated protein markers can be used in the clinical practice after further validation in larger samples. The secretory markers after the validation in saliva can be useful in community samples for rapid confirmatory diagnosis. The techniques used by us for biomarker identification can be routinely done in clinical labs from the biopsy samples or FFPE tissues or in saliva and hence can be provided as a standard diagnostic test with the available infrastructure and does not require any additional costs.

In summary, the main aim of this thesis is deep understanding of the biology of Oral gingivo buccal complex Squamous Cell Carcinoma by identifying the major dysregulated pathways. By exploring the association between expression levels of various biomarkers and the clinicopathological features of the patient samples, we have evaluated the individual markers in GBC SCC tumorigenesis. We identify gene signatures and proteins that could aid in better risk assessment, diagnosis, and clinical management and improve the quality of treatment offered to patients. Lastly, we have identified a cost-effective adjuvant that exhibits anti-cancerous properties and can be used in disease management.

Ongoing Ph.D Program

Molecular Characterisation of Oropharyngeal cancers

Research Scholar: Dr Vani Suresh, MDS,

Funding: DBT Wellcome

A retrospective study on the survival outcomes of human papillomavirus-associated oro-pharyngeal cancers was initiated after obtaining ethical approval. The clinicopathologic characteristics, pattern of care, and outcome data of 413 cases reported from 2013 to 2018 were abstracted. The patients were in the age group of 27 to 90 years and had a mean age of 57 years. The male-to-female ratio was 7:1. Most of these patients had the habit of smoking tobacco (72.6%) and alcohol (61.26%). Most presented with stage IV disease (64%), followed by stage III (30.5%). Poorly differentiated tumors were seen in 53.75%, followed by moderately differentiated (34.4%). The pattern of care includes chemoradiation (70%), followed by radiotherapy (25.6%). Tissue sections were obtained from 221 formalin fixed paraffin

embedded tissue blocks to check their HPV status using p16 and HPV 16/18 E6 immunohistochemical markers. The standardization of the technique is ongoing, and the tumors will be evaluated for HPV. The survival outcomes of oropharyngeal cancers will be assessed based on their HPV status.

Academic training programs for students

Hands on training workshops on “Basics in Cell culture techniques for anti-cancer drug discovery” and internships are being offered in the department for students from various colleges and universities. So far 15 students enrolled with the workshop in our department.

Other Honors/Presentations by staff members in Conferences/Workshop:

Dr R Vijayalakshmi

- **Patent Granted :**

Patent No. 202141028755 A PROCESS OF PREPARATION OF SILYMARIN BASED ORAL TOPICAL MUCOADHESIVE GEL FOR ORAL MUCOSAL DISEASES AND PRODUCT THEREOF”. Date of publication: 9.7.2021

- **Patent Filed :**

A system for detecting nucleic acids using a paper-based substrate and a method thereof” with Dept of Biotechnology, IIT Madras

Awards

Dr R Vijayalakshmi

- Has been recognized as a Supervisor to guide Ph.D Students under Tamilnadu Dr MGR Medical University. This guideship is valid for 5 years from year 2022
- Has been recognised as an Adjunct Faculty with Saveetha University to guide researchProjects for Dental Students
- Won the Best Research Paper with Cash Award at International Conference conducted by Foundation of Head and Neck Oncology (FHNO-2021) for presentation titled “Vimentin identified as a salivary biomarker for risk assessment in oral pre-cancers February
- Certificate course from Harvard Medical School for course titled “Cancer Genomics and Precision Oncology”, “Genetic Testing and Sequencing Technologies”, “Immunology – Immuno-Oncology” in August

Presentations

- Speaker on topic – Be (aware) of the Big “C” at Padmavathy Mahila University, Tirupathi in January
- Speaker for AOGIN (Asia Oceania Research Organisation on Genital Infections and neoplasia) 2023 Conference held in Coimbatore, 2023
- Speaker on topic “ My experiences in Oral Cancer Research” at DHR sponsored Workshop conducted by Sri Ramachandra Medical College (Deemed University)

Dr Sridevi Duggirala

- Participated in ISMPO-ISOCAN 2022 - "Demystifying the new normal in cancer" and presented an oral talk on "Development of paper based micro fluidic device for detection of HR-HPV during cervical cancer screening" and was awarded the first Prize
- Participated in workshop "MoST-DSIR-PRISM Scheme (a scheme to transform Innovator into Entrepreneur) Proposal writing"
- Lecture "Career prospects in Biotechnology" at Kendriya Vidyalaya IIT-Madras, for class 12 students.
- Participated as a judge for PALS innoWAH Project Exhibition conducted by PALS, IITM Alumni association
- Attended the work shop on EMBO – India Research Partnership held at IIT-Madras in March
- Talk at Sri Padmavathi Mahila Visvavidyalayam, Tirupati "Lung cancer - Modern epidemic – and the role of molecular precision diagnostics during therapy"

Ms. Soundharya R

- Participated in ISMPO-ISOCAN 2022 - "Demystifying the new normal in cancer" and awarded the best paper presentation with Cash Award in the Gynaecological Cancer category for the paper titled "Cervical Cancer Screening using HPV DNA testing"
- Attended "Real World Evidence 2023" and awarded the best poster presentation in the Molecular Oncology category for the poster titled "Molecular Profiling of Acute Myeloid Leukemia - A Tertiary Cancer Care Experience"
- Paper in gynecological cancer category in the title "HPV DNA Testing for Early detection of cervical cancer"
- Participated in the SERB sponsored Karyashala on the topic "Applications of Artificial Intelligence in Healthcare" happened at the North-Eastern Hill University in September
- Participated in the Hands-on workshop on Flowcytometry arranged by Sree Chitra Tirunal Institute for Medical Sciences and Technology in March
- Talk on the topic "Gene expression - Real-Time and PCR and Sequencing" for the students of Kongu Engineering College
- Talk on the topic "Cell Culture Techniques - Assays and Applications" at the University of Madras

Aravinda lochan G

- Appointed as an External Examiner for UG lab practical examinations at Sethu institute of technology in May
- Lecture on "Basics of Cancer Biology" for conducting a one credit course on Genetic Engineering organized by Department of Chemical Engineering at Kongu Engineering College, Erode in May & June
- Attended a training program on R&D equipment at Guru Nanak Dev University under STUTI-21 (Workshop Synergistic Training Program Utilizing the Scientific and Technological Infrastructure) sponsored by DST in September

- Paper at ISMPO ISOCON 2022 titled EGFR / ALK / RET / ROS / molecular profiling of the lung cancer samples from Cancer Institute (W.I.A) in October
- Participated in a Hands-on Workshop on Flow cytometry BMT WING, SCTIMST, Kerala in March

K. Mehanathan

- Presented in the head and neck category on the research work titled "Oral tongue squamous cell carcinoma - A gene expression study", at ISMPO-ISOCON 2022 - "Demystifying the new normal in cancer"
- Poster on the research work titled "EGFR/ALK/RET/ROS/MET molecular profiling of the lung cancer samples from Cancer Institute" at Real World Evidence, 2023
- Attended a SERB sponsored workshop (Karyashala) on the topic "Applications of Artificial Intelligence in Healthcare" happened at the North-Eastern Hill University in September
- Attended a Hands-on workshop on Flowcytometry arranged by Sree Chitra Tirunal Institute for Medica Sciences and Technology in March

PSYCHO-ONCOLOGY & RESOURCE CENTER FOR TOBACCO CONTROL (RCTC)

Dr.V.Surendran, Head of the Department

Faculty

Dr. V. Surendran, M.A., M. Phil., Ph. D	Professor and Head
Dr. C. Sundaramoorthy, M. Sc., Ph. D	Assistant Professor
Ms. S. Revathy, M.Sc., M. Phil	Assistant Professor

Other Staff: Psychologist, Psycho-oncologist, Data Entry Operator, Senior Project Assistant, Field Investigator, Research Assistant, Project Assistant & Coordinator.

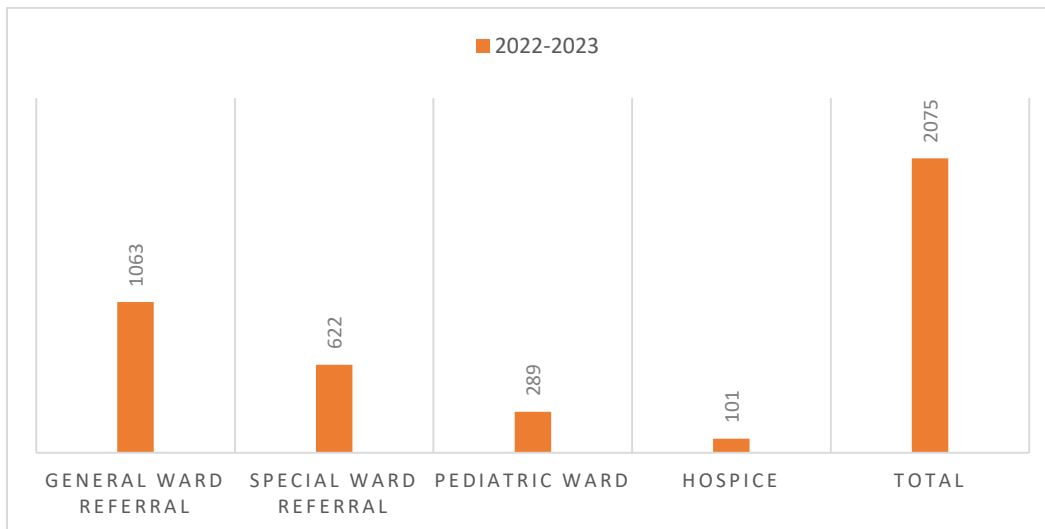
M.Phil course: Graduated 3, registered 3, Ph.D scholars 5

Ph. D Students joined: Ms Divya Mercline
Ph. D scholars completed the course: Mr D Sathish Kumar & Ms Devi N

Clinical Services: Psychosocial Care (In-Patients)

Patients are assessed for their distress level and other psychosocial concerns by the Psycho-oncologists on a daily basis. Also, patients were referred by the treating physicians (from MOG, SOG, ROG, PPC and Paediatric Ward) for psycho-oncological consultation. Reasons for referral were management of distress, depression, anxiety and adjustment problems that interfere with cancer and its treatment, tobacco cessation, and psychological fitness for BMT, amputation and other surgical procedures and psychological assessments. Based on the severity and issues, the patients were given brief or intensive intervention to overcome and cope with the psychosocial issues.

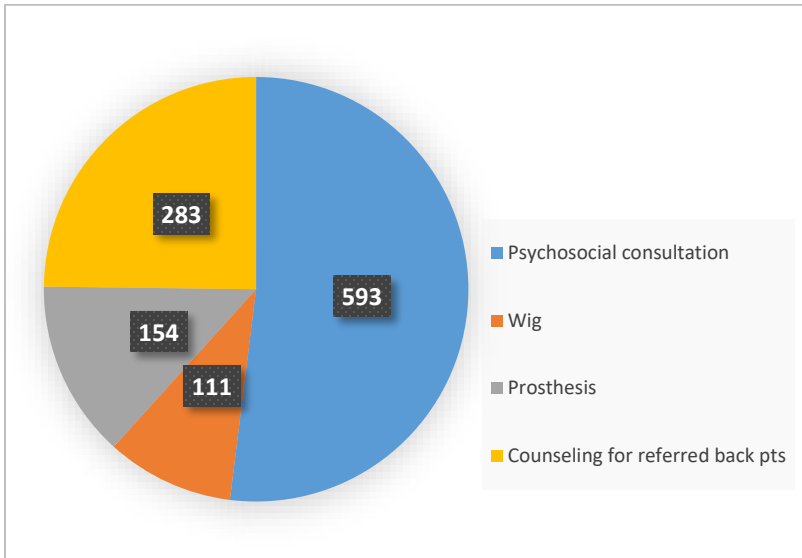
Number of patients received psychosocial support in the last 2 years



Clinical Services: Psychosocial Care (Out Patients)

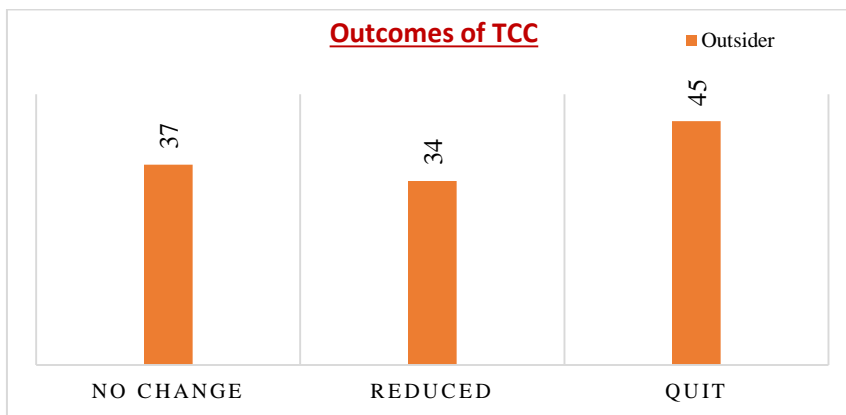
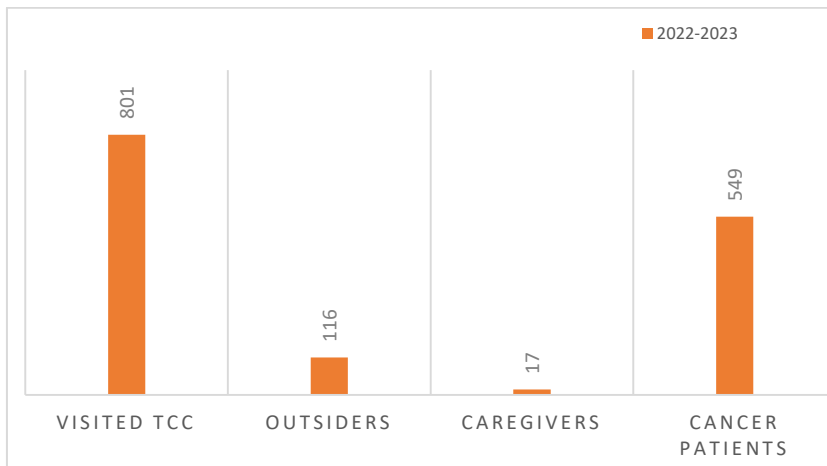
The Psycho-oncology clinic functions full-time catering to the psychosocial needs of the patients and their caregiver from the out-patient clinics. Various quality of life and neurocognitive assessments are being carried out in this clinic. In addition, distress screening and offering intervention for patients under palliative/ supportive care is also being carried out as a routine. The advanced cancer patients

under supportive care also being counseled regarding the availability of hospice care facility in Mahaveer Ashray. The department has been carrying out assessments including quality of life of LABC patients, rectal cancer patients, Clinical Trails QOL and adherence to oral medication among patients with CML, as part of various studies.



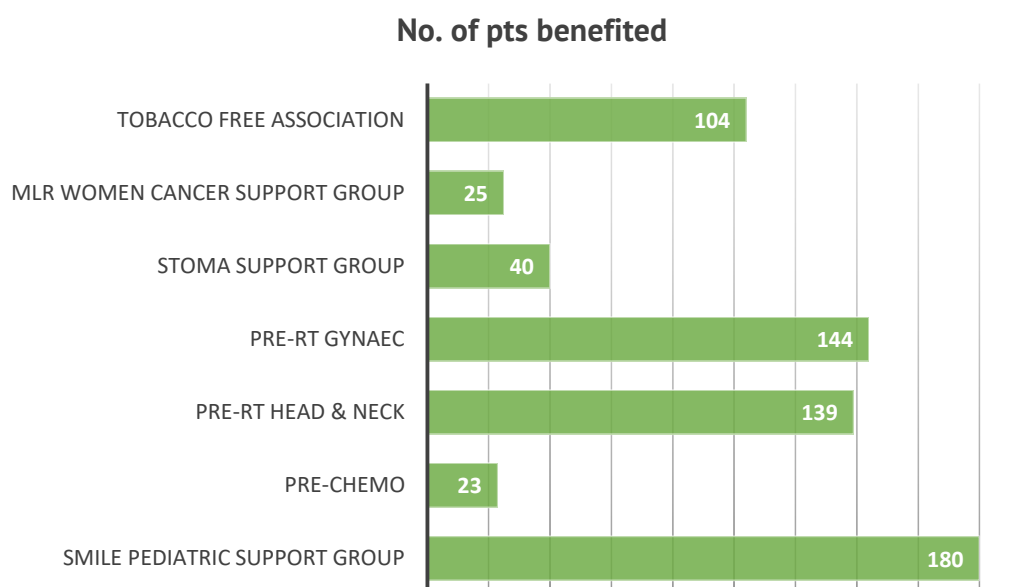
No. of pts benefited from psycho-oncology services in OPD (Total: 1141)

Tobacco Cessation Clinic (TCC) - No. of clients benefited



After Cancer Treatment (ACT) Clinic: **No. of survivors benefited - 683**

- Support Group Meetings



Completed Projects

Title	Description	Target Population
Psycho-oncology TeleECHO Educational Program -II	Case discussion, didactic presentations, knowledge sharing and workshop activities were part of the training program. This program gives training to psychologists, nurses, doctors and research scholars in the field of psychosocial oncology.	Psychologists, nurses, doctors and research scholars
Cancer Control through primary and secondary Intervention and cancer rehabilitation program	Early diagnosis of cancers that are curable if detected early can be promoted in India by educating the public and training health care professionals. This project includes cessation, awareness, education, legislation, community participation and oral screening and rehabilitation programs for cancer patients.	Tobacco users, school going students and general public.

Ongoing Projects

Title	Description	Target Population
Behavioural Profile of paediatric cancer patients during treatment.	The present study aims to understand the profile of behavior paediatric cancer patients during treatment and to find out if there is any association between behavioural problems and clinical and demographic characteristics.	Pediatric Cancer patients

Predictors of successful quit rates among tobacco users in South India'	The present study aims to assess the impact of cessation service, support group, oral screening and social support on the quit rate among the tobacco users registered between January 2015 to December 2019 in the TCC, Cancer Institute (WIA)	Tobacco users
Care Seeking pathway and Care delivery for cancer	This project is in liaison with the National Institute of Health (NIH), United States to understand experiences of seeking care and providing care for cancer in order to improve services for patients as they live with cancer.	Cancer patients
Awareness and preference for external breast prosthesis and the associated experiences of breast cancer patients with mastectomy:	As a means of rehabilitation, the department is providing free external breast prosthesis to breast cancer patients. This study aims to assess the awareness and preference levels towards using this prosthesis to enable improved services for breast cancer patients.	Breast cancer patients
Perceived appropriateness and missed opportunities of end-of-life cancer care in India:	The department is collaborating with multiple comprehensive cancer centers across the country to understand the current end-of-life cancer care practices, understand the needs among patients, caregivers and healthcare professionals and develop a nationwide guideline for the same.	Patients in end-of-life cancer care
Neurocognitive functioning of patients with primary brain tumor – A prospective Cohort Study	Among the patients diagnosed with primary brain tumors and being posted for brain surgery, the present study aims, to prospectively assess the neurocognitive functioning and to find the association between the MRI finding and neurocognitive functioning.	Primary brain tumor patients
Alternative Livelihood for Bidi workers in Tirunelveli district	Providing skill-based training for bidi rollers to shift their employment from bidi rolling to other alternative livelihood. Conducting skill-based training programs including wig making, coir-based hand crafts training, tailoring for the bidi rollers enrolled in the alternative livelihood training program, based on their willingness to shift	Bidi Workers

Tobacco cessation intervention TeleECHO Educational Program	Case discussion, didactic presentations, knowledge sharing and workshop activities were part of the training program. This program gives training to psychologists, dentist, doctors and research scholars in the field of health Care.	Psychologists, Dentist, doctors and research scholars
Cross-Cultural Validation of Financial Toxicity and Happiness in Patients with Cancer in South India	To determine if the COST questionnaire, Subjective Happiness Scale, and Oxford Happiness Questionnaire would be an appropriate tool to measure financial toxicity and happiness in patients with cancer in South India setting.	Cancer patients and caregivers
Patient Preference for Non-Operative Treatment Strategy in Locally Advanced Rectal Cancers: A cross-sectional survey	To understand the preference and decision-making processes towards a non-operative strategy for treating their disease and the factors associated with the same, which can thereby lead to a clinically significant change in the treatment modality of rectal cancers in India.	Patients with rectal cancers

Future Projects

Title	Description	Target Population
Operational Research Training Program in Psycho-Oncology and Community	To impart practical skill for undertaking operational research by providing training on process from concept development to publication. The course is composed of four practical modules of three days each and conducted over a period of 6 months.	Oncologist, Psycho-oncologist
Implementing CALM therapy in India	To help patients with metastatic cancers cope well with psychosocial distress, the department is planning to implement CALM intervention in alliance with Princess Margaret Cancer Centre, Canada	Patients with metastatic cancer

Academics

- Psycho-oncology TELEECHO Educational Program II
The department successfully completed the Psycho-oncology Tele-ECHO Educational Program II in collaboration with the ECHO India. This program comprised of 12 sessions on selected areas by trained experts from various institutions and hospitals, followed by case discussions. This is a 6 month long project which was initiated in March, 2022 and completed by August 2022. Around 47 health care professionals were trained through the TeleECHO programme.

Dr V Surendran

- Chaired a plenary session on 'Organizational Excellence in a Technological World: Resilience as a core component' in the IAAP Conference 2023 held in Delhi in February
- Chaired a session in the 'International Conference on Applied Forensic Psychology in Crime & Delinquency' held by University of Madras in March

Dr. C. Sundaramoorthy

- Invited as a faculty and moderated a panel discussion on 'Onco-rehabilitation' at the "ISMPO ISOCON 2022 Conference" - Biennial Joint conference of the Indian Society of Medical & Pediatric Oncology and Indian Society of Oncology organized at Hotel Hilton, Chennai in October
- Attended the Roundtable conference of ECHO India on 'Health Systems Strengthening - Challenges & Opportunities & Capacity Building - Needs & Learning' in Hyderabad in November

Ms Revathy

- Served as the program faculty for the Psycho-oncology Master class on 'Meeting the unmet psychosocial needs of patients with genito-urinary cancers' held in SOGOCON in Bangalore in August
- Served as the program faculty for the Hands-on Training workshop on 'To tell or not to tell: Addressing issues of children & their families touched by cancer' held in ISMPO-ISOCON 2022 in Chennai in October

Presentations

In IPOS 2022 World Congress, held virtually in Toronto, Canada in September

Dr V Surendran presented a study on 'Awareness, Preference for external breast prosthesis and quality of life among mastectomised breast cancer patients in India' and a study on 'Chemo wigs: A cost-effective and preferred intervention to enhance quality of life among cancer patients'.

Ms Revathy presented a study on 'Life after Cancer- A Study on Fear of Cancer Recurrence, Cognitive Impairment and Distress among Cancer Survivors from Adult Survivors Clinic in a Tertiary Cancer Centre'

Ms. Divya Rajkumar presented Paper on 'Psychosocial Outcomes of Pediatric Cancer Survivors from After Completion Therapy Clinic'.

Mr. Divyaraj Prabhkar presented a paper titled "Exploring the challenges faced by bidi workers and their readiness to shift to alternative livelihoods" at The Union World Conference on Lung Health 2022.

Ms Vidya presented a study on "Prevalence of Distress among Pediatric Cancer Patients" at Indian Society of Paediatric Oncology conference at Chennai & on "Behavioural Profile of Paediatric Cancer Patients during treatment-A Pilot Study" at SIET College for Women.

Ms. Deepika presented an E-poster titled Effectiveness of Tobacco Free Association Support Group Meeting in A Regional Cancer Center in South India at ADDICON 2022, the 2nd Annual National conference of Addiction Psychiatry Society of India held at NIMHANS, Bangalore in December.

Presentation at the National Conference on fostering well-being across lifespan, JBAS College for women, Chennai in February

Ms. Henna K Seethi presented the poster titled 'Psychological Management on Body Image Concerns of Head and Neck Patient with Tracheostomy-A case study'

Ms. Swetha G presented the poster titled 'Psychosocial adjustment of patients with oral cancer'

Ms. Madhumathi L Spresented the poster titled 'A case study on delirium in cancer patients with Burkitt's lymphoma'.

Presentation at the Indian Society of Medical and Pediatric Oncology (ISMPO) and Indian Society of Oncology (ISO) held at Hotel Hilton, Chennai in October.

Ms. Aparna Anna Mathew presented the paper with title 'Resilience, Perceived Stress and Health related Quality of Life' among Adolescence and Young Adult'

Ms. Janani presented the paper with title 'effectiveness of psychological prehabilitation in distress, adjustment and quality of life among head and neck cancer patients undergoing surgery'

Mr. Saajan presented the paper with title 'Psychosocial Aspects of Patients with Delayed Cancer Diagnosis'.

Lecture

Dr V Surendran

- Talk on 'Snapshots of ECHO champions' in the Project ECHO Immersion – Tamil Nadu in June.
- Talk on 'Psychosocial care pathways for breast cancer survivors' in the Workshop on Integrated Multidisciplinary approach and quality of care in breast cancer patients organized by Yenepoya Physiotherapy College, Mangaluru in July
- Lecture on 'Psycho-oncology through the cancer trajectory' in the Certificate Course on Counselling skills in cancer and palliative care- A blended learning program organized by Bangalore Hospice Trust- Karunashraya, in July
- Talk on 'Seek the hidden patient: Meeting the psychosocial needs of families of patients with genito-urinary cancers' in the Psycho-oncology Master class held in SOGOCON in Bangalore in August.
- Talk on 'Tobacco use causes cancer' for staff and students of Tamil Nadu Open University in Chennai in August
- Talk at Valliammai Ammal Memorial Lecture on 'Changing role of community in combatting cancer' at SRM University in September
- Talk on 'Spirituality in Cancer' in the Symposium of the International Conference on Innovations in Health Interventions: Traditional Complimentary and Alternative Methods in Holistic Healthcare organized by University of Hyderabad in November
- Talk on 'Cancer Awareness' for the staff members of State Street HCL Services in Chennai in November

- Lecture on 'Role of Psycho-oncologist in Preventive Oncology' in the Symposium of the 5th International Conference on Counseling Psychotherapy and Wellness organized by Christ University, Bangalore in January.
- Talk on 'Tobacco Cessation' for students at Meenakshi Ammal Dental College, Chennai in January.
- Lecture on 'Emerging need for cancer-care: Psycho-oncology' in the International Conference on Mental Health: A Holistic Approach organized by Madras School Social Work in February.
- Talk on 'Psychosocial well-being of cancer patients' in the National Conference 2023 organized by Justice Basheer Ahmed Sayeed College for Women in February.
- Talk on 'Psychological aspects of phantom phenomenon' in the Psycho-oncology Hands-on skill building workshop in the 9th Annual Conference of the Indian Musculo-skeletal Oncology Society (IMSOS) 2023 in Chennai in March.
- Talk on 'Introduction, identification and risk factors associated with tobacco use' in the International Conference of Counselling, Psychotherapy and Wellbeing, ICCP 2023.

Dr.C.Sundararamoorthy

- Lecture on 'Health Consequences of Tobacco Usage' in the part of Health Awareness Programme for school students organized by Donbosco Anbu Illam and HCL Foundation in Govt. Hr.Sec School Avadi, in August
- Invited as a Judge for Extempore Competition (Tamil) to ABC Exhibition 2022 (All a 'Bout Cancer) at Anna Adarsh College, Auditorium, Anna Nagar in August
- Lecture on Tobacco Cessation for School Students' in the part of CSR organized by AM Foundation in Govt. Hr. Sec School, Manali, in November

Ms Revathy

- Lecture on 'Clinical practice and research-oriented skills for interviewing in oncology and palliative care' in the Certificate Course on Counselling skills in cancer and palliative care- A blended learning program organized by Bangalore Hospice Trust- Karunashraya, in July
- Talk on 'Tired of counting sheep to fall asleep: Addressing sleep and fatigue issues of patients with genito-urinary cancers' in the Psycho-oncology Master class held in SOGOCON in Bangalore in August
- Talk on 'Cancer Prevention and Early Detection' for skill development trainers of Pudiyador Trust in Besant Nagar in December
- Talk on 'Cancer Prevention and Early Detection' for skill development trainers of Pudiyador Trust in Ramapuram in February
- Talk on 'Body image issues in children and young adults' in the Psycho-oncology Hands-on skill building workshop in the 9th Annual Conference of the Indian Musculo-skeletal Oncology Society (IMSOS) 2023 in Chennai in March

Ms. Deepika

- Talk on Tobacco Control and Cessation for the Writer Information Business service pvt Ltd staffs in Vandalur in January
- Talk on Tobacco Control and Cessation for the Writer Information Business service pvt Ltd staffs in Periyapalayam in January

- Talk on Tobacco & Cancer prevention for Government Higher Secondary School in Nandanam in February

Sarcoma Survivors Meet

The Department of Psycho-oncology organized a panel discussion for sarcoma survivors in the IMSOS 2023 held in Chennai. Around 55 survivors participated and benefited from the discussion wherein a team of oncologists discussed on the various issues, management and coping strategies.

Sarcoma Awareness Run

The department organized a Sarcoma Awareness Run on 5th March 2023 at Island grounds, Chennai in line with the IMSOS 2023 conference. Nearly 500 people participated in the awareness run and disseminated cancer awareness messages to the public.

Workshop on Cancer prevention & early detection

In view of National Cancer Awareness Day 2022, Cancer Institute (WIA) in association with Tamil Nadu Women Development Corporation and HCL Foundation organized a workshop on 'Cancer Prevention & Early Detection' on 7th November 2022, for NGO partners & Self-help group women in communities across Chennai city. The program was inaugurated by Mr. N. Srinivasan, Joint Director, Tamil Nadu Urban Livelihood Mission, Chennai district. The program comprised an awareness talk on 'Cancer Incidence, pattern, trend & survival' by Prof. R. Swaminathan, followed by a Panel discussion on 'Demystifying the Myths & Misconceptions: Strategies for prevention & of Cancer & early detection' moderated by Dr. Venkatesh, with panel members Dr. Sridevi, Dr. Vasanth Christopher, Dr. Jayashree Natarajan, Ms. Revathy, and Ms. Radha Devi, cancer survivor. The experts discussed the signs & symptoms, possible risk factors, prevention strategies, the importance of a healthy lifestyle and steps involved in the self-breast examination. Around 118 members from the communities and SHG participated and benefited through this program. The program was well received by the participants and doubts raised were clarified by the experts at the end of the program. All the participants pledged that they would disseminate the knowledge gained from this program to a larger public.

Panel Discussion

In view of World Cancer Day 2023, the department organized a panel discussion on 'Close the Care Gap in Cancer' on 4th February 2023, for NGO partners & Self-help group women in Chemmanchery, Gandhi Nagar and Perumbakkam communities. The program comprised of a keynote lecture on 'Closing the gap among vulnerable groups in cancer care' by Dr. Venkatesh, Department of Surgical Oncology followed by a Panel discussion on the same theme. The discussion was moderated by Dr. Jayashree Natarajan with panel members comprising of healthcare professionals and cancer survivors. The experts discussed common signs & symptoms, possible risk factors, prevention strategies and importance of healthy lifestyle. Around 120 members from the communities participated and benefited through this program.

Workshop for enforcement officials on COTPA and tobacco control

Tobacco Cessation Centre - Madurai, Cancer Institute (WIA) organized two capacity building workshops for the enforcement officials on "Ill-effects of Tobacco, Early detection of cancer and COTPA" at

Madurai. A total of 30 officials from health department were empowered with information on ill effects of tobacco, early detection of cancer, and Cigarettes and Other Tobacco Products Act 2003.

Capacity Building workshop for shop keepers

Tobacco Cessation Centre, Cancer Institute (WIA), Madurai organized two capacity building workshops and free dental camp for shopkeepers on 'Ill Effects of Tobacco and COTPA' in Madurai. Totally 69 shopkeepers attended the workshops and the camp. Mr. T Chellamuthu, President-Madurai zone highlighted the issues in tobacco selling and the importance of the implementation of COTPA 2003. Dr. Palanivel Pandian, Assistant Professor- Best Dental College delivered a detailed session on Oral health and ill effects of consuming tobacco. Mr. Ramanathan - Sanitary Inspector Zone-4, explained effects of passive smoking to the shopkeepers and its causes for cancer. IEC materials on ill effects of tobacco and early signs of cancer were distributed during the workshop.

Prosthesis and padded bra for breast cancer patients who underwent mastectomy

A total of 77 external breast prostheses were distributed to patients and survivors of breast cancer who have undergone mastectomy to improve their body image issues and quality of life. This is an ongoing project at Cancer Institute (WIA).

Wig

A total of 110 wigs were distributed to cancer patients with alopecia. The wigs are given to enhance body image and to improve the quality of life for cancer patients and survivors.

Neuropsychology Research Lab

The patients who are suspected to have cognitive deficits as a result of treatment or the disease itself will be assessed using various standardized tools to understand the effect of treatment and to offer cognitive retraining if required.

Alternative livelihood for beedi rollers

In an effort to shift beedi workers to alternative healthy livelihood, Cancer Institute (WIA) has started coordinating various skill development training programs at Tirunelveli and Tenkasi district to provide alternative sustainable job opportunities in Idaikal Panchayat Anathanadarpatti, Mathalamparai Panchayat Pulichakulam and Palayamkottai taluk Kokaraikulam. Cancer Institute organized 9 batches of training program on tailoring at these places in the last one year. In a need-based assessment conducted prior to this training program, 540 women expressed their interest in participating in the program. 270 students were subsequently registered for the program; however, 37 of them later withdrew for personal reasons and 233 in total successfully completed the 60-day training course.

At present, few trainees who have completed training on tailoring have been employed as peer trainers for the current training program and many of them were not rolling beedi and moved to other jobs. Also, Cancer Institute (WIA) is working closely with like-minded organizations to create many such job opportunities in the locality.

World Cancer Day at Madurai

- Hand Print Campaign
The City Health Officer Dr. Raja inaugurated the Hand Print Campaign and delivered special address. Around 300 students and public joined the activity. Pamphlets on ill effects of tobacco were distributed during the event.
- Signal Campaign
The Signal Campaign was inaugurated by Mr. Vellathurai Sub Inspector of Police. Around 2000 general public witnessed the program and IEC materials were distributed during the event.
- Street Play
Street play on “Tobacco – Threat to our Environment” was conducted in 3 prime locations at MGR bus stand. More than 1500 general public were witnessed the program.
- Fixing of Signage Boards
Around 25 signage boards of ‘No smoking in public places’ were placed in MGR bus stand premises by the Sanitary Inspectors and the shopkeepers were instructed to educate the people not to smoke with in the bus stand premises. IEC materials on ill effects of tobacco were distributed to the public.

International Volunteer Day - Chennai

In view of International Volunteer Day, a street play was organized on 5th December 2022 at HCL campus, Sholinganallur. The awareness stall was set up and it consists of standees and pamphlets on tobacco cessation, cancer awareness and on ways to quit tobacco was set up at the cafeteria. Information on the tobacco cessation clinic was explained to all interested employees who visited the stall. Further information on the Quit tobacco application for tobacco cessation was also provided.

A street play was conducted to disseminate knowledge and awareness on tobacco use and lifestyle habits that may lead to cancer. An open announcement was made about the Tobacco cessation clinic, to encourage employees to volunteer for Cancer awareness programs. Following the street play, many employees voluntarily collected the pamphlets on tobacco cessation and a few even signed up to volunteer for our program activities.

International Volunteer Day – Madurai

- Dental check-up for students from Grade 9 & Grade 10
Cancer Institute organized oral check-up with support from Ultra Best Dental College at Elango School. Around 384 students, teachers and volunteers benefited from this program.
- Orientation on substance abuse
Followed by the oral screening, Dr. Palanivel Pandiyan Asst. Prof, Best Dental College educated the children about oral health, causes of oral cancer and how we can protect ourselves from cancer. The students were also educated on the types of cancers and life style modification, passive smoking effects, Tobacco Free Educational Institutions and the roles and responsibilities of Tobacco Monitoring Committee. ID cards were distributed to the members of the monitoring committee.
- Shopkeeper awareness program
Along with enforcement officials’ team, the tobacco monitoring committee and HCL volunteers fixed the COTPA (Sec-6b) board in the shops around the school premises within 100 yards. HCL volunteers distributed the IEC materials to shopkeepers and fixed the signage boards.

Signal Campaign

In view of the World No Tobacco Day, Signal campaign was conducted for 2 hours on May 31st 2022, at 20 major signals in Chennai city. Around 200 students from Indian Dental Association, Patrician College, Dignity Foundation and Don Bosco Anbu Illam (DBAI) participated in signal campaigns. Around 10 volunteers were present in each signal holding awareness placards, disseminating messages about the harmful effects of tobacco use.

Sand Sculpture and Launch of Quit Tobacco App

On World No Tobacco Day 31st May 2022, Cancer Institute (WIA) along with Fine Arts College made a sand sculpture to sensitize the public on the ill effects of tobacco. The sand sculpture was created in line with the theme for the year "Tobacco: Threat to our Environment". Along with the sand art, Quit Tobacco Mobile Application developed by Cancer Institute (WIA) was launched by Thiru. MA. Subramanian, Hon'ble Minister for Health and Family Welfare, Govt. of Tamil Nadu. Deputy Mayor Miss. Priya, Deputy Mayor Mr. Magesh Kumar, Mr. Newton, Deputy Manager - HCL Foundation, Mrs. Kathija, Program officer - HCL Foundation, staffs and volunteers participated in the inaugural program of Sand Art and launch of Quit Tobacco Mobile application.

National Cancer Awareness Day at Madurai:

In view of the National Cancer Awareness Day, an awareness program was organized at Corporation High School, Anupanadi. The program comprised of awareness talk on dangers of passive smoking, types of cancers, causes and its stages, importance of early cancer detection, and COTPA by Mr. Ramanathan, Sanitary Inspector.

Awareness program on cancer prevention for community women:

Cancer Institute (WIA) along with MAMTA jointly organized two awareness programs on Cancer prevention for community women in Gandhinagar. Significance of early detection of cancer, signs & symptoms, possible risk factors and prevention strategies, importance of healthy lifestyle and steps involved in self-breast examination were emphasized. Dr. Thendral delivered the talk on 'Pain and palliative care' and also about supportive care to advance cancer patients. Around 80 women from community participated enthusiastically and benefited through these programs. All the participants assured that they would disseminate the knowledge gained from this program to a larger public and to willingly come forward for the cancer screening camps that will be organized in next quarter.

Breast and cervix cancer awareness:

Breast and cervix cancer awareness program was organized on 14th October 2022 for women in Chemmancherry. Around 35 women participated and benefitted from the program. The program comprised of awareness session on the ill effects of tobacco, symptoms of cancer and its treatment procedure, breast self-examination and screening for cancer, the importance of maintaining a healthy lifestyle and personal hygiene.

Tobacco control awareness for school students:

Awareness program was organized for 8th and 9th standard students in three Government High schools & Higher Secondary schools. Totally 367 students (boys- 205 and girls-162) participated and benefited from the program.

Identified tobacco selling shopkeepers:

33 tobacco selling shops were identified in the Gandhinagar, Chemmancherry and Perumbakkam communities. The details of tobacco sale, presence of the shops near educational institution (Sec 6b), Sale of tobacco by children below 18 years, Warning Board-“ smoking here is an offence” (sec4), Advertisement boards promoting tobacco usage (Sec 5), availability of match box and triggers, visibility of tobacco product in the shop, warning boards on restriction of tobacco sale to children below 18 years (Sec 6a), buying of tobacco products by children below 18 years (Sec 6a), warning on tobacco sale within one month, number of persons smoking near the shop were collected using a semi-structured questionnaire. 134 tobacco users were identified from these communities, tobacco users were interviewed over the telephone. Of these, 14 tobacco users are willing for Tobacco cessation counselling and 17 users were not interested in counseling.

Shopkeeper awareness program:

Cancer Institute (WIA) and Chemmancherry Traders Welfare Association jointly organized an awareness program on ill-effect of Tobacco & Cigarette and Other Tobacco Products Act (COTPA) -2003 on 27th January-2023 in Police boys & girls club, Housing board, Chemmancherry. Around 45 shopkeepers participated and benefitted through this program. Two shopkeepers assured that they will not sell tobacco products anymore, other participants also pledged that they would disseminate the knowledge gained from this program to a larger public and help in creating tobacco free community.

Hair Donation Program

In view of World Cancer Day, Cancer Institute (WIA) and HCL Foundation organized hair donation program for three days (21-23rd of Feb 2022) for employees at the HCL campus, Sholinganallur. A total of 26 employees voluntarily registered their names for the hair donation & 4 donated.

World No Smoking Day 2023 - Signal Campaign at Madurai

Cancer Institute and HCL Foundation organised No Smoking Day Special Signal campaign at Goripalayam, Madurai on 8 March 2023. The American College, Social Work Department students, Ultra Best Dental College students, and HCL volunteers joined the event.

Oral check-up for students:

The event was conducted with the primary objective of creating tobacco free educational institutions and also on cancer care equity. PG Students from Best Dental College conducted the oral screening for the students from 9th, 11th and 12th Standard. Basic complaints identified were malocclusion, caries, calculus, fractured tooth. Following the oral screening, Dr. Palanivel Pandiyan Asst. Prof, Best Dental College educated the students about oral health, causes of oral cancer and ways to protect, effects of passive smoking and COTPA sections.

RADIO-DIAGNOSIS AND IMAGING SCIENCES

Dr.M.Karthigai Selvi, Incharge

Radiologists (Full Time)	Radiologists (Part Time)
Dr. M. Karthigai Selvi Dr. R. Thanaraj Dr. P. Anusuyadevi	Dr. S. Pushparajan Dr. Sathish Ramamurthy Dr. Gayatri Iyer Dr. A. Vignesh

Other Staff: Technologists, Technicians, Staff Nurse & Data Entry Operators

Students enrolled for B.Sc

I Year – 6, II Year – 6 & III Year - 4

Dr.V.Shanta Campus	
Total number of X-Ray cases	3,761
Dr.S.Krishnamurthi Campus	
Total number of digital X-ray cases	20,948
Total number of C-ARM and special procedures	327
Total number of Mammography cases	4,322
Total number of Ultrasonography cases (USG + FNAC + Biopsy)	19,407
Total number of CT cases(CT cases + biopsy)	10,736
Total number of MRI cases	2,904

Academics

CME conducted by Department:

- “Role of IR in Oncology” by faculty from Vijaya Health care Hospital & MGM Health care in in April 2022
- “Thyroid Cancer Imaging & Bone Tumours” by faculty from Apollo cancer centre & KMC Hospital in December 2022
- Lecture on “Lung cancer & Nodules” by faculty from Ninewells Hospital, Scotland in January 2023.
Dr.M.Karthigaiselvi
- Attended CME 75th Annual Conference of the Indian Radiological & Imaging Association(IRIA) TN & PY chapter in December
- IMSOS Radiology Workshop was conducted in Chennai in March
- Attended IMSOS Pathology Workshop as faculty in March

MEDICAL PHYSICS
Dr.N.Vivekanandan, Head of the Department & RSO

Faculty

Dr.Vivekanandan.N.PhD.

Professor & Head

Other Staff: Medical Physicists & RSO

Intern students passed out	Intern students joined
1. Mr.Arumugam	1. Mr.Kamalesh V.Ka
2. Mr.Rahul	2. Mr.Dinesh
3. Ms.Catherine Dezouza	3. Ms.Sneha Theres OJ
4. Ms.Sharon Swetha	4. Ms.Vishali

- Conventional Radiotherapy Planning : 780
- Conformal Radiotherapy Planning : 949
- IMRTPlanning : 186
- Rapid Arc Planning : 48
- HDR Brachytherapy Planning : 744
- SBRT- Planning : 4

Completed Projects

- Dosimetric study of Conformal Vs IMRT (SIB) in Head and Neck cancer patients.
- Risk analysis in HDR brachytherapy based on AAPM TG 100 recommendations.
- A study on portal dosimetry using Varian and Elekta EPIDs.
- Analysis of IMRT PSQA using Dosecheck and perfraction

Ongoing Projects

- Preliminary study on GRID therapy using VMAT technique.
- Acceptance and Quality Assurance Testing of TrueBeam SVC linear accelerator.
- Comparative study of Single and Multi-phase dose calculations in lung SBRT.
- Modeling and Validation of TrueBeam SVC linear accelerator using Diamond MUV

Academics:

Teaching MSc Medical Physics, M.Sc. Radiotherapy Technology, BSc Radiotherapy Technology, Nuclear Medicine and Radiology

NUCLEAR MEDICINE

Dr. R. Krishnakumar, Head of the Department

Faculty

Dr. R. Krishna Kumar, M.D., DMRT, DRM, Ph.D	Professor & HOD
Dr.N.Vivekanandan, MSc[Med Phy], RSO[III], Ph.D.	Medical Physicist cum RSO

Other Staff: Medical Physicist, Scientific Assistant, Technologists & Technician

B.Sc (Nuclear Medicine Technology)

Students passed out		2
Students registered	I Year	7
	II Year	1
	Internship	6
PhD registered		1

Nuclear medicine uses radioactive compounds called radiopharmaceuticals or radiotracers that interrogate physiologic or pathologic processes at a molecular level and provide diagnosis and therapy for a variety of diseases. Nuclear medicine studies are clinically used to assess most organ systems with almost 100 different types of studies or therapies. Many more radiotracers play a crucial role in research. When used as an imaging agent to evaluate organ function, metabolism, or membrane receptor characteristics, the amount of radiotracer administered is in the pico molar or nanomolar range, which avoids disturbing the process under evaluation while still yielding data that are quantifiable and comparable to normative standards. As functional deficits arise before morphological changes in many diseases, nuclear medicine studies can detect disease in early stages when curative or more effective palliative treatment choices may be an option. Therapeutic nuclear medicine is developing rapidly as an alternative choice of treatment in oncology. Therapeutic radionuclides have now gained attention for tumor targeting therapy using multiple routes and mechanisms to target radionuclides in the tumor site. The non-invasiveness of the procedure and relatively low toxicity in comparison to conventional chemotherapy and external beam radiotherapy make radionuclide therapy an attractive and realistic alternative in the management of malignant diseases. The contribution of therapeutic radionuclides to tumor treatment will significantly increase in the future.

Statistics			
Bone Scan	1,536	Therapy	
Renal Scan	765	Lu177 Dotate Therapy	23
Liver Scan - Haemangioma	20	I-131 Therapy	12
Sentinel Node	64	MIBG Therapy	01
Tc99m pertechnetate thyroid scan	12	Low dose Therapy	62
Parathyroid MIBI scan	09	Lu177 PSMA Therapy	18
DMSA scan	02		
I-131 uptake and scan	204		
I-131 WBI scan	202		
I-131 MIBG scan	04		
I-131 post therapy scan	128		

Poster Presentation in SNM (I) CON SC 2022 at Bangalore in August

- Dr.R.Krishnakumar, poster on “Retrospective analysis of the clinical presentation and Diagnostic Imaging procedures in Hepatic Hemangioma”
- G.K.Rangarajan, poster on “Usefulness of Accuracy and Precision of Bone scan, MRI and Digital Radiography in Limb Salvage Surgery for long bone tumors”

Academics

- Dr.R.Krishnakumar, participated in ANMPICON 20th annual conference Association of nuclear medicine physicians of India, Baroda in September & Annual conference of SNM (I) India at Delhi in December. Faculty - “Masterclass in Theranostics - 360 degrees on PSMA Theranostics” at MIOT International, Chennai in March
- G.K.Rangarajan, was external examiner for BSc AHS at Sri Ramachandra medical university & Hospitals, Porur in February
- S. Manisha, nominated and approved by Atomic Energy Regulatory Board (AERB) as Radiological Safety Officer (RSO) Nuclear Medicine and Diagnostic Radiology department, Cancer Institute (WIA) in December. Participated in theme meeting on “Regulatory Control of Radioactive Discharges to the Environment and Disposal of Solid Waste” for radiation facilities through virtual mode in February

Ongoing Projects

Ph.D. Thesis Topic: Quality control, physical and clinical studies of Radionuclide Imaging and Therapy of Nuclear Medicine: G.K.Rangarajan, Scientific Assistant, Department of Nuclear Medicine. Guide: Dr.R.Krishnakumar.

Future Projects

Randomized controlled trial of I-131 Tositumomab (Bexxar) radio-immunotherapy versus rituximab immunotherapy with relapsed or refractory low grade, follicular or transformed B-cell Non-Hodgkin's Lymphoma.

Background

Non-Hodgkin's Lymphoma (NHL) is a heterogeneous group of cancers affecting the lymphatic system – divided into two prognostic groups.

1. Indolent or low grade lymphoma with a long median survival. Majority of lymphoma fall into this group. They are incurable at advanced stages with a median survival of 8 – 10 years
2. Aggressive or high grade lymphoma these have a short natural history and a 50 – 60% cure rate

The Technology - I-131 Tositumomab (Bexxar) is Iodine labeled monoclonal antibody for the treatment of patient with CD 20 positive follicular low grade NHL, including relapsed, refractory or transformed low grade NHL. The monoclonal antibody targets and binds to CD 20 on the surface of the B cells. Once bound antibody inhibits tumor cells directly and / or recruits the immune system to attack the targeted cells. Simultaneously the radio isotope delivers radiation directly to the B cells. I-131 tositumomab has been in clinical trials as an adjunct to chemotherapy and for the treatment of patients who relapse after

an initial response. Administration of I-131 tositumomab requires dosing based on the patient body mass, tumor size and metabolism of the drug. It is delivered intravenously and usually given in 2 separate doses on the same day or 2 doses one week apart. After the second dose the patient needs to stay in hospital for a few days because they may be a radiation risk for other people.

The results of clinical trials show that for follicular NHL, treatment with radiolabelled antibodies would require re-treatment at 14 months for most of the patients. Using conventional chemotherapy however would require re-treatment at 5 months. In addition 20% of patients treated with a single dose of I-131 Bexxar were tumour free at 3 years compared to none in the group of patients having repeated chemotherapy. There are literature reports of response rates of 57% (complete response 32%) with I-131 Tositumomab for chemotherapy refractory, low grade and transformed low grade NHL. The median duration of complete response has been reported as 20 months.

Financial Implication - At present I-131 Tositumomab labeling procedure is being analyzed by Board of Radiation in Isotope Technology (Radiopharmaceuticals). BRIT is planning to conduct a multi-centre clinical trial in India. Therefore for 10-15 NHL patients a year we can conduct an approved clinical trial using Bexxar. The budgetary provision would be worked out in a few months in co-ordination with BRIT, Mumbai.

ONCOPATHOLOGY
Dr. Shirley, Head of the Department

Dr. S. Shirley	MD, DNB, MNAMS, Ph.D	Professor & Head
Dr. K. Murhekar	MD	Additional Professor
Dr. B.K. Karthik Bommanna	MD, DM. (Hematopathology)	Associate Professor
Dr. A. Jhansi Rani	MD, DNB, PDF	Associate Professor
(Dr. Sithara Venkateshwar,		
Dr. P.U. Swathy, Dr. Sneha Suresh,	MD	Assistant Professors:
Dr. Banasri Devi, Dr. M. Charanya)		
Dr. Nivedita Suresh	MD	Junior Pathologist

Other Staff

Scientist C, Scientific Assistants, Technologists, Research Assistants, Technicians, Lab Technician, Multi Tasking Staff, Typists, Data Entry Operator

Post Doctoral Fellowship

Dr. Srinivasa Rao Vavilapalli	MD
Dr. Shireesha Mallik	MD
Dr. MeeraBalakrishan	MD

DM OncoPathology

Seniro Resident

Dr. Sneha K, MD; Dr. Priyanka D, MD

DEPARTMENTAL STATISTICS

Cases

Histopathology	28381
Cytopathology	13684
Haematopathology	8945
Clinical Pathology	589333
24 Hours Laboratory	60334
Cytogenetics	335
Electron Microscopy	16

Completed Projects

Comparison of expression of prognostic markers in primary site versus metastatic site in breast cancers

Ongoing Projects

- Establishment of Tumour Bank at the Cancer Institute (WIA), Adyar, Chennai
- DHR-ICMR Advance Molecular Oncology Diagnostic Services (DIAMOnDS) Project by Department of Health Research, ICMR.
- Relevance of vacuolated lymphoblasts in paediatric B-Acute Lymphoblastic Leukaemia

Future Projects

- Intraoperative consultation – turn around time and diagnostic accuracy
- Borderline serous tumours of ovary – a clinicopathological study
- Renal cell carcinoma – role of immunohistochemistry in subtyping on biopsy sample

Academic Programme

Tamil Nadu State level HEMATOCON 2022 Quiz program conducted on the behalf of Indian Society of Haematology and Blood Transfusion (ISHBT) in August

Presentations

Oral presentations

Dr.Kanchan Murhekar

Case presentation - High Grade B-cell Lymphoma (Double Hit) at Lymphoma Workshop at ISMPO ISOCON 2022 Conference at Chennai in October

Dr. Karthik Bommanna

Challenging case scenario in Myeloma MRD; Workshop on flow cytometric measurable residual disease assessment in myeloma and acute myeloid leukaemia at ACTREC at Mumbai in March

Dr.Jhansi Rani

FISH in B-cell lymphomas: Cancer Institute (WIA) experience at Lymphoma Workshop at ISMPO ISOCON at Chennai in October

Dr.Sithara Venkateshwar

- Case presentation - Breast mass in a woman post renal transplant (T/NK cell post transplant lymphoproliferative disorder) at Lymphoma Workshop at ISMPO ISOCON 2022 Conference at Chennai in October

- Case presentation - Intraosseous lipomatous tumour, Workshop at 9th Annual National Conference of Indian Musculo-Skeletal Oncology Society at Chennai in March

Dr.Sneha Suresh

Case presentation - Intraosseous rhabdomyosarcoma, Workshop at 9th Annual National Conference of Indian Musculo-Skeletal Oncology Society, at Chennai in March

Poster presentations

Dr. Karthik Bommanna

“Prognostic relevance of CD20 expression among pediatric precursor B-lineage acute lymphoblastic leukemia patients” at Haematocon at Kolkata in November

Dr.P.U.Swathy

ANEURYSMAL BONE CYST – Experience from A Tertiary Institute at 9th Annual National Conference of Indian Musculo-Skeletal Oncology Society at Chennai in March

Dr.Banasri Devi

Denosumab treated giant cell tumour of bone: Histomorphologic spectrum at 9th Annual National Conference of Indian Musculo-Skeletal Oncology Society at Chennai in March

Dr.M.Charanya

Extraskelatal Ewing sarcoma of unusual sites: A tertiary cancer care centre experience at 9th Annual National Conference of Indian Musculo-Skeletal Oncology Society at Chennai in March

Guest Lectures

Dr. S. Shirley

- Update in Colorectal Cancers at Stanley Medical College at Chennai in April
- Pathology Pearls in GEP-NET at GEMS Hospital at Chennai in October
- Grossing of Head and Neck, Pancreas and Colorectal Carcinomas – A Rapid Review at CAREPARE at Chettinad Academy of Research and Education at Kelambakkam in October
- Role of Flow Cytometry in Leukaemias at Institute for Child Health at Chennai in October
- Pearls in Pathology for Gyn Oncologist at CME in Gynecological Malignancies at Cancer Institute (W.I.A.) at Chennai in October
- Postoperative Histopathological Reporting Following Ablative Surgery for Oral Squamous Cell Carcinoma at Symposium in Oral and Maxillofacial Pathology at AdhiParasakthi Dental College at Melmaruvathur in January

- Updates in Histomorphology of Breast Cancer at Chetpathcon 2023 at Chettinad Academy of Research and Education at Kelambakkam in February

Dr. B.K. Karthik Bommannan

- Approach to flow cytometric measurable residual disease assessment in B-lymphoblastic leukaemia. Monthly academic series of the cytometry society of India in July (Online)
- Basics of flow cytometric measurable residual disease assessment in B-lymphoblastic leukaemia. 14th annual conference and workshop conducted by The Cytometry Society of India at Basavatarakam Indo American Cancer Institute at Hyderabad in October
- History and ontogeny of B lymphocytes at 14th annual conference and workshop conducted by The Cytometry Society of India at Hyderabad in October

CME / Workshops Conducted by the Department

- Approach to B-ALL MRD analysis. 14th Annual Conference and Workshop conducted by The Cytometry Society of India on 15th October 2022 at Basavatarakam Indo American Cancer Institute at Hyderabad in October
- Lymphoma Workshop at ISMPO ISOCON 2022 Conference at Chennai in October
- Pathology Workshop at 9th Annual National Conference of Indian Musculo-Skeletal Oncology Society at Chennai in March

Achievements & Awards

Dr. Karthik Bommannan

Young Society for International Paediatric Oncology (SIOP) rising star award 2022-Runner up.

CLINICAL BIOCHEMISTRY

Dr.R.Arivazhagan, Head of the Department

Other Staffs: Scientific Assistants, Sr. Technicians, Technicians

Tests	Number
Blood Glucose	23,116
RFT	1,19,674
Electrolytes	2,49,169
LFT	1,57,436
Coag. Profiles	1,27,964
Tum. Markers	21,348
Other Investigations	97,483
Total	7,96,190

New Equipment

One new Protein Chemistry Analyzer was installed on 15-11-2022. The total Multiple Myeloma Panel tests like Serum Free Kappa, Serum Free Lambda light chain assays and Immunofixation tests were started as in house tests.

Academics

- Internship training conducted for 96 M.Sc & B.Tech college students during June – December 2022
- Dr.R.Arivazhagan, attended South Zone ACBI 2023 at CMC Vellore as a Resource person and a Chairperson for a section and three days GCLP Training on ISO 15189: 2022 at Saveetha Dental College, Chennai in March

CLINICAL MICROBIOLOGY

Mrs. V. Varalakshmi, Head of the Department & Associate Director (Admin)

Other Staff: 9 Scientific Assistants, Jr Scientific Assistant, Technologist & Technicians

Microbiology department provides comprehensive bacteriological, fungal, virological, and serological diagnostic service helping in treatment of patients with infection. A wide range of samples like blood, body fluids, urine, pus, respiratory secretions, pre op swabs, catheter tips, tissues, stool etc are received for culture, around 41,170 clinical samples and around 13,436 surveillance samples per year. The department has BacT alert automated systems – 120 cells for blood culture specific for adults & pediatric patients there by help in reducing the turnaround time and results being available after a shortened incubation period of four hours instead of the conventional 24 hrs & another BacT alert Automated systems – 60 cells for Mycobacterial culture.

Department has a Vitek 2 Compact automated system for identification and susceptibility testing of bacteria and fungus. Aerobic, Anaerobic, Fungal and Mycobacterial culture of various clinical samples are performed routinely.

New Equipment installed in July 2022

Department has installed MALDI Biotyper System in July 2022 - Identifying Microorganisms by their Molecular Fingerprint, for rapid information on bacteria, fungus & mycobacteria with direct benefits on the patient outcome. Using traditional approaches, it takes at least 24 hours for obtaining growth from clinical specimens and an additional 24 hours for down-stream isolate characterization, as a consequence - therapeutic decisions are generally made empirically until the availability of species identification and resistance patterns. Techniques providing rapid information on bacterial pathogens and their antimicrobial susceptibility are of key importance for the management of infectious diseases patients. The introduction of MALDI-TOF into routine diagnostics at Cancer Institute (WIA) led to a significant acceleration of highly specific species identification and we regard this as a major advance in the field of clinical microbiology. . The MALDI Biotyper System identifies microorganisms using MALDI-TOF (Matrix-Assisted Laser Desorption / Ionization Time of Flight) mass spectrometry to determine a unique proteomic Mass fingerprint of an organism. From the culture plate it takes just 15 minutes (including sample preparation) to identify Microbes instead of 12 hours or more using other techniques. Turnaround time - Within half an hour of Growth & Blood culture: Within half an hour of positivity. While MALDI-TOF fingerprinting had originally been introduced and approved for the identification of solid media cultures, it has readily been adopted for liquid enrichment cultures, reduced turnaround times by at least one working day. MALDI -TOF technique is thus suitable to inform clinicians within the critical phase of sepsis, when laboratory reports are known to have highest impact on treatment decisions.

We have been helping in **Active Surveillance** of infections at high-risk areas – CLABSI, UTI, SSI & VAP helps monitoring antibiotic resistance, preventing spread of infections, involved in surveillance of OT's, ICU's, BMT Unit, various wards, CSSD, Blood Bank, health care personnel and biomedical waste management for better infection control & conducts continued education for nursing and paramedical staff.

Infection control is a major responsibility of the department, periodic training is given to ICN's on all aspects of infection control, regular review of infections and antibiotic policy to limit the spread of infections & resistance is being done. Department has initiated stringent Covid Control Measures since 2020 Covid pandemic & is ongoing through out the Institute. I/C practices are monitored throughout the hospital to ensure staff / patient compliance to guidelines.

Environmental Cleaning & Disinfection Protocol for containment of COVID 19 is followed. The following cleaning & disinfection protocol for control & prevention of spread of COVID 19 is strictly being followed in OPD's, wards, high risk areas – ICU/OT, counter's, other patient care areas & diagnostic laboratories at both campus. Sodium hypochlorite & Lysol which is 50% cresol & 50% liquid soap is recommended for spraying. Disinfection of frequently touched surfaces like: High touch surface like doorknobs, door handles, handrails, patient chair rests & arms, lift doors & buttons, sink taps and other fixtures are cleaned by spraying 2.5% Lysol (1 liter in 19 liters water using small hand sprayers) microfiber cloth can be used to wipe down if needed; 70% Isopropyl alcohol to be used to wipe down surfaces where the use of bleach/Lysol is not suitable. Disinfection frequently is being followed. *Fogging is done using hydrogen peroxide+silver ion MIKROZID HP10 solution after every case & at the end of the list. **Cleaning using automated wet mopping machine is done in weekends in above high-risk areas.

As part of the NABH journey, we have initiated many quality control activities like Quality Assurance Programme, Quality Objective, Quality Indicator / KPI's. at the department.

Following the Institute policy of providing a safe hospital environment for our patients, we ensure adherence of strict infection control practice at all levels of the hospital. Relevant cultures are sent at the first suspicion of infection to identify focus and antibiotic initiation is done after sending cultures. Compliance with antibiotic policy is reviewed periodically & all efforts are made to reduce overall antibiotic use.

SPECIMEN RECEIVED FROM APRIL 2022 – MARCH 2023 - 54,606

SUMMARY OF INFECTION RATES APRIL 2022 TO MARCH 2023

Month	CLABSI	SSI	CAUTI	VAP
April 2022	0	2.04	0	20.83
May	0.91	2.32	1.27	0
June	0.93	2.23	1.04	0
July	0.9	2.1	1.04	7.04
August	0	1.68	0	0
September	0.6	1.84	1.22	0
October	0.28	2.53	1.24	14.7
November	1.03	3.97	0.89	0
December	1.46	1.17	1	10.1
January	0	3.70	0	0
February	2.04	2.16	2.38	25.31
March 2023	0	1.2	1.15	0
Infection Rate Benchmark as per National Health Care Safety 2013	1.2	5%	3.1	1.43
ICU Benchmark as per Inter Noso inf consortium	5.36	2.3%	4.1	4.2

*The above infection rates are discussed in HICC monthly meetings & CAPA taken accordingly.

Increased rates of Ventilator Associated pneumoniae – CAPA Measures taken

Corrective action

- Antibiotic Escalation
- Mechanical Ventilation to be optimized
- PEEP optimized secretion clearance to be facilitated
- Careful attention to Post- operative wound care is necessary
- Skin around Tracheostomy wound to be cleaned with povidone Iodine frequently

Preventive action

- Head end elevation.
- Keep Cuff pressure >20 cm H₂O.
- Avoid Stress ulcer prophylaxis.
- When possible, manage condensate from Humidity
- Regular Sedation interruption. To look for readiness to wear manual sedation
- Proper oral care & positioning & ulcer prophylaxis implemented
- Nurses & Doctors trained with basics of VAP & its prevention

Antibiotic Susceptibility Pattern – Sensitivity %

BLOOD

Organism	I	M E	PT	CS	AK	CFL/ LE	CU/ CI/CE	CL	LZ	VA	TE	TGC
Pseudomonas	96	96	96	96	100	96	NA	100	NA	NA	NA	NA
Staph aureus	94	94	94	94	94	94	-	NA	100	100	100	100
Klebsiella	89	89	89	89	89	45	45	100	NA	NA	NA	100
Escherichia coli	67	67	67	67	75	33	17	100	NA	NA	NA	100

WOUND SWAB

Organism	I	ME	PT	CS	AK	CFL/ LE	CU/ CI/CE	CL	LZ	VA	TE	TGC
Staph aureus	92	92	92	92	94	74	-	NA	100	100	100	100
Pseudomonas	96	96	96	96	96	94	NA	100	NA	NA	NA	NA
Escherichia coli	98	98	98	98	98	22	13	100	NA	NA	NA	100

Klebsiella	85	85	79	79	87	42	27	100	NA	NA	NA	100
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RESPIRATORY SAMPLES

Organism	I	ME	PT	CS	AK	CFL/ LE	CU/ CI/CE	CL	TGC	I	ME	PT
Pseudomonas	97	97	99	97	99	97	NA	100	NA	97	97	99
Klebsiella	80	80	79	79	81	52	43	100	100	80	80	79
Escherichia coli	90	90	90	90	90	57	38	100	100	90	90	90

URINE

Organism	I	ME	PT	CS	AK	CFL/ LE	CU/ CI/CE	CL	LZ	VA	TE	TGC
Escherichia coli	93	93	93	93	95	42	44	100	NA	NA	NA	100
Enterococci	73	73	70	70	NA	62	NA	NA	100	98	98	100
Pseudomonas	85	85	82	82	85	70	NA	100	NA	NA	NA	NA
Klebsiella	84	84	84	84	85	41	43	100	NA	NA	NA	100

I – Imipenem ME – Meropenem PT – Piperacillin / Tazobactam
 CS – Cefoperazone / Sulbactam AK – Amikacin CFL/ LE – Ciprofloxacin/ Levofloxacin
 CU/ CE/ CI – Cefuroxime/ Ceftriaxone/ Cefotaxime CL – Colistin LZ – Linezolid
 VA – Vancomycin TE – Teicoplanin TGC- Tigecycline NA – Not applicable

Take home Message : 2022-23 Antibiotic Susceptibility

Staphylococcus aureus

Incidence of MRSA is around 3% (SSI).

Linezolid, Vancomycin, Teicoplanin shows 100 % Susceptibility for MRSA.

Clindamycin shows 95% Susceptibility for MSSA, while 20 % for MRSA.

Amikacin shows 10% Susceptibility for MRSA.

Gram positive isolates are less common than gram negative isolates.

Use of Vancomycin and Teicoplanin can be reduced.

Enterococcus (MDR): Mostly isolated from Stool.

- Linezolid shows 100 % Susceptibility
- Vancomycin, Teicoplanin shows 90 % Susceptibility
- Vancomycin, Teicoplanin resistance (VRE) seen Mostly with Enterococcus faecium

Escherichia coli / Klebsiella

- MDR Klebsiella pneumonia – a menace, only sensitive to Colistin and Tigecycline
- Colistin & Tigecycline shows 100 % Susceptibility (No resistant strain in 2022 -2023)
- Susceptibility to Imipenem – 88%, Meropenem is around 87 %
- Ecoli/ Klebsiella reported from Stool is 100 % MDR
- Susceptibility to 1st, 2nd & 3rd génération Cephalosporin is around 32% only
- Piperacillin/Tazobactam shows 87% while Cefaperazone/sulbactam shows 86% & Amikacin shows 91% Susceptibility
- Amikacin and Piperacillin tazobactam sensitivity is better, may bring it back into our clinical use
- ESBL Positivity is around 14%.
- Carbapenamase production is around 30% - 35%

Various surveillance activities done at microbiology

- Theatre surveillance both at weekends and in between
- Special ward & General Ward rooms' surveillance after fogging
- Random Surveillance of Theatres & Wards
- ICU Surveillance. (Before & after fogging)
- CSSD surveillance
- Blood bank – Blood Bags, Platelets, SDP, RDP etc
- Kitchen food handlers stool culture, Nail culture
- Kitchen food analysis
- Water analysis of various Sump & Overhead tank at Dr.SKC & Dr SC, RO Water, well water, Borewell water, Atmospheric water, CSSD Sterilizer water and Potable Drinking water (Can water) & STP treated water
- OT Staffs Nasal screening for MRS.
- Doctors & Nurses hand cultures
- New chemical & Disinfectant Capacity testing etc.

Continuous Quality Improvement Activities as per NABH requirements

1. Internal Quality assurance
2. External quality assurance
3. Quality objectives:
 - a. To improve the Turnaround time of Gram stain smears from 3- 4 hrs. to 2 hrs. during Night duty hours
 - b. Percentage of Variance in EQAS
 - c. To reduce the deviations in Turnaround time of Blood cultures from ICU / BMT
4. Quality assurance program
5. Service standards
6. Key performance indicators
 - a. No of reporting errors per 1000 investigations
 - b. No of re-dos
 - c. % of adherence to safety precautions by staff working in diagnostics
 - d. Incidence of Needle stick injuries
 - e. No of blood body fluid exposures
 - f. % of Discrepancies in Cross culture of a sample by a 2nd technician
 - g. Samples delayed in transport from ward to Laboratory > = 45 min
 - h. % of Deviations in critical alert information
7. Training on Key result area.

Academics

Study conducted in February, 2023 & is on-going –

Cancer Institute believes that Disposal of Biomedical Waste through segregation, collection and treatment in an environmentally sound manner minimizes the adverse impact on health workers and on the environment, keeping this in mind the department along with National Productivity Council, Govt of India & Dr. Ambedkar Institute of Productivity & conducted a study on Bio-Medical Waste Management at Dr SK Campus. NPC an apex organization under the Ministry of Commerce and Industry, Govt generates productivity awareness and consciousness across the country by providing solutions for improving productivity. A team of professionals from NPC, Dr. Ambedkar Institute of Productivity, audited the Institute in February,

Institute has a good mechanism for effective disposal through common biomedical waste treatment and disposal facilities and adhere to the Bio-medical waste management rules 2016 notified by the Ministry of Environment, Forest and Climate Change (MoEF&CC).

In the year 2020-21, COVID-19 presented myriad challenges to the day-to-day functioning of such organizations as exponential rise in bio-medical waste and lockdown related challenges to surveillance. To ensure effective management and safe disposal of these wastes Cancer Institute has a committee headed by Director, ICO, Doctors, ICN's, ICT, Engineers, and Facility & Sanitary Employees. This committee is responsible for preparing BWM annual report & compliance reports, if any, to meet the regulatory requirements and to exercise oversight on the safety of all who deals with the wastes.

This study involved field inspection, review of annual reports, availability of infrastructure to manage BMW, current management and recording keeping practices etc to identify gaps and recommend suitable measures to be considered by the institute. Dr SKC with a bed capacity of 274 beds generates daily about 190 Kgs of Bio-Medical Wastes, 1000 Kgs of general wastes & about 170 Kgs of Food waste. 45 % to 49% of the total waste generated in last three year (2019 to 2021) belongs to red category of waste which is mostly recyclable plastic followed by yellow category highly infectious waste (39% to 42 %). The blue category waste (glass items) is 9% to 12% and rest of the white category waste (metal sharps) is about 2% to 4%.

BMW generation per bed per day is assessed to be about 1.096 Kgs/day/bed. Which is comparatively lesser than the NCBI study of COVID-infected patient in India generated approximately 3.41 kgs/day/bed of BMW during the COVID-19 pandemic outbreak. All category BMW wastes are getting collected in temporary storage yard by the facility and transported to their CBMWTF located at Thempakkam, Chengalpattu Taluk, Chengalpattu District, Tamilnadu 603209.

The infectious liquid wastes from labs are disinfected using sodium hypochlorite solutions and after disinfection are discharged to Sewage Treatment Plant (STP). Autoclave machines are provided to sterilize infectious wastes. Bio-medical waste is collected from various departments/sections daily and transferred to common storage area by trolleys.

An awareness programme was conducted on 14.02.2023 for the benefit of the Hospital Employees & Housekeeping team associated with BMWM. A team of 87 employees including doctors, nurses, technicians & sanitary workers to enhance their knowledge level in understanding different categories of BMW and its Management. The study indicated the institute obtained all statutory permissions and its submitting reports are per requirements, however few gaps & areas for improvement were identified and suggestions and recommendation given by them were implemented.

Awareness on Communicable Disease–Dengue / Covid 19 was conducted in collaboration with Directorate of Public Health and Preventive Medicines, Government of Tamil Nadu, Educative videos, PPT and lecture presentation were there on Covid-19 and Dengue on 27.02.2023. 96 employees attended the programme and benefitted.

PHYSIOTHERAPY

Mr. Srinivasan Vijay, Head of the Department

Dr. M.S. Satish, MPT (Neuro), MSc (Psy), Ph.D Chief Physiotherapist

Other Staff: Senior & Junior Physiotherapist

Statistics			
In Patients	5,320	Internship students & Clinical postings	203
Out Patients	4,497		
Total	9,817		

Presentations

At ISO & ISMPO Conference held at Chennai in October.

- Mrs. Anitha “Improvement Following Pelvic floor physiotherapy in Gynecological Cancer survivors with voiding Dysfunction”
- Mr. Naveen Kumar "Exercise Intervention in Limb salvage Surgery Patients for Distal Tibia"
- Ms. Harsha “Effect of modified scapular rotatory exercise in winging of scapula following neck dissection surgery”
- Mr. Vijay “Role of physiotherapist in management of Phantom and Body image issues”
- Dr. Sathish “Physiotherapeutic Rehabilitation after Head & Neck Onco Surgery”

At the 2nd National IAP corporate conference held at Thiruvananthapuram in October.

- Mrs. Anitha paper titled “Effect of Autogenic Drainage and Forced Expiratory Technique in Improving FEV1 after Elective Abdominal Surgery in Cancer Patients”
- Mr. Naveen Kumar paper titled "Effect of Mouth Opening Exercises by using wooden clips for Trismus"
- Dr. Satish talk on “Conquering the Frontiers-Onco Physiotherapy”

Guest lectures

S. Vijay

- “Lymphedema Management in Palliative care” at the certificate course in physiotherapy-palliative care interface, organised virtually by Indian Association of Palliative care in September

- Panellist for the topic “Scope of physiotherapy in Non-communicable disease” at the 2nd national corporate conference of IAP held at Convention Centre-Green Field Stadium in Trivandrum in October
- “Lymphedema and Post Radiation Soft Tissue Fibrosis Management” at REHABCON 2023 in February
- Talk on “Introduction to Complete Decongestive Therapy and Pneumatic compression device” organised by SBSP-BIHER (DTBU) and Cancer Institute (WIA) in March

Dr M.S. Satish

- Talk on “Physiotherapy in Paediatric cancer-Beyond Horizon” at the 59th National Conference of Indian Association of Physiotherapists held at kolkotta in May
- Talk ‘Assessment Techniques in Lymphoedema’ and conduct a Workshop on “Key to unlock the enigma of Breast Cancer related Lymphoedema” at Medical Education Unit Hall, AVMC (Deemed to be University), Hospital Campus-Puducherry, in July
- Talk ‘Breast Cancer Rehabilitation in India-Emerging Needs’ at the Workshop on “Integrated Multidisciplinary Approach and Quality of care in Breast Cancer Patients” at College of Physiotherapy, Yenopoya Medical College (Deemed to be University), Deralkatte, Mangalore, in July
- Talk on “Introduction to Palliative care for Physiotherapist” at the certificate course in physiotherapy-palliative care interface, organised virtually by Indian Association of Palliative care in September.
- Lecture “Scope of Physiotherapy in Cancer rehabilitation” at the World Physiotherapy day meet held at Madha college of Physiotherapy, Kundrathur Chennai in September.
- Lecture “Myths and facts of Physiotherapy in Cancer rehabilitation” at the World Physiotherapy day meet held at Tagore college of Physiotherapy, Chennai in September
- Lecture on “Onco-Physiotherapy in Optimizing Cancer care” at the Journal club and health day meet of Shree Balaji College of Physiotherapy in October
- Presentation on “Onco Rehabilitation- A Multi-Disciplinary approach” at the ISMPO ISOCON 2022, Biennial Joint Conference held at Chennai in October
- Talk by webinar on “Cancer Rehabilitation-Imperative need” to Sri Aurobindo University, Indore, to commemorate National Cancer day in November
- Lecture on “Role of Physiotherapy in Oral cancer” at South Indian Oral Oncology Workshop organised by Meenakshi Dental & Medical College, Chennai in January
- Talk on “Exercise Prescription in Oncology” at the XIII- Annual Conference of Global Association of Physicians of Indian Origin (GAPIO), held at ‘The Leela-Gandhinagar, Gujarat’ in February
- Talk on “Onco Physiotherapy- Unlocking the Conundrum” at the 60th National Conference of Indian Association of Physiotherapist’s at Ahmedabad in February
- Resource person in the Workshop on Comprehensive Lymphoedema Management through Physiotherapy, and delivered a talk on “Techniques in Lymphoedema Assessment” organised by SBSP-BIHER (DTBU) and Cancer Institute (WIA) in March
- Talk on “Multi modal approaches in rehabilitation of musculoskeletal cancer patients” at the 9th Annual Conference of IMSOS at Chennai in March

Mrs Anitha D

- Talk on 'Assessment Techniques in Lymphoedema' at a Workshop on "Breast cancer Related Lymphedema Management by CDT" organised by "S" Health Care Academy, Chennai in May
- Talk on "Physiotherapist Role In Paediatric Palliative care" at the certificate course in physiotherapy-palliative care interface, organised virtually by Indian Association of Palliative care in September
- Talk on "Scope and Practice of Physiotherapy in Palliative Care" Webinar to commemorate World cancer day, themed Demystifying the role of Physiotherapy in Palliative care organized by School of Physiotherapy-AVMC (DTBU) Pudhucherry in January
- Talk on 'Structuring protocol-based exercise rehabilitation' in the panel discussion on "Multi Model Approaches in Rehabilitation of Musculoskeletal Cancer Patients" at the 9th annual conference of IMSOS at Chennai in March
- Talk on "Breast Cancer Awareness" organized at BEE Health Studio on International Women's Day in March
- Talk on "Breast cancer risk & prevention" at women's Health conclave 2023 held at Shree Balaji School of Physiotherapy in March

Mr. Naveen Kumar.S:

- Talk Hands on Skill training in CDT, Organised by "S" Health Care Academy, Chennai in May.
- Talk on "Introducing Physio in Palliative Care" Webinar to commemorate World cancer day, themed De-mystifying the role of Physiotherapy in Palliative care organized by School of Physiotherapy-AVMC (DTBU) Pudhucherry in January

CME/Seminar/Symposium/Workshops

- Conducted one day hands on workshop on Key to unlock enigma of Breast Cancer Related Lymphedema (BCRL) workshop on CDT at School of Physiotherapy Vinayaka Mission Research Foundation Aarupadai Veedu Mission College of Campus, Kirumampakkam Pondicherry in July
- Conducted a Symposium on "Onco Rehab" in the Joint conference of Indian Society of Medical and Paediatric Oncology (ISMPO) and Indian society of Oncology (ISO) held at hotel Hilton, Chennai in October
- Conducted an "Onco-Physiotherapy workshop" in the 9th annual National conference of Indian Musculo-Skeletal Oncology Society held at The Hilton, Chennai in March
- Conducted a one day workshop on "Comprehensive Lymphedema management for Physiotherapist" on World lymphedema day at Sree balaji College of Physiotherapy, Chennai in March

Prizes: Mrs. Anitha received 3rd prize for the paper titled "Improvements following pelvic floor physiotherapy in Gynaecological Cancer survivors with voiding dysfunction" in the joint conference organised by ISMPO & ISO a joint conference for the paper titled in October.

Completed projects

Prevalence of Lymphedema and the Effectiveness of Complete Decongestive Therapy (CDT) in comparison with Pneumatic Compression Therapy in Managing Upper Limb Lymphedema among Breast Cancer Survivors.

Ongoing projects

Factors determining shoulder dysfunction and Effectiveness of prehabilitation on physical and psychological problems in breast cancer patients with modified radical mastectomy.

LIBRARY

Mr. M. Ravichandran, M.A., M.L.I.S., D.C.A.

Librarian

Mr. P. Ponmudi, B.A., M.L.I.S., D.C.A.

Assistant Librarian

Total number of stack volume			
Books	8,629	E-Books	104
Periodicals		Catalogue	
Current	55	Books	21
Complimentary	3	Annual Reports	1,353
Bound	6,104	Reprint files	65
Cassettes			
Video	65	Compact	138
Audio	77	Floppy	4
DVD	45		

Technical Services - Book Stack is classified and catalogued according to the Dewey decimal classification and Computerized respectively.

QUALITY CONTROL DEPARTMENT

Dr. Selvaluxmy	Chairman
Mrs. Varalakshmi	NABH Coordinator
Dr. Vasanth Christopher	Quality Control Officer
Dr. Harish	Quality Control Officer
Dr. Ujwala	Quality Control Officer
Dr. Venkatesh	Quality Control Officer
Dr. Balaji	Quality Control Officer
Dr. Prashanth	Quality Control Officer
Mrs. Jayapradha	Quality Manager
Mr. Vignesh	Assistant Quality Coordinator
Ms. Sujatha	Coordinator - Patient Safety & Quality
Ms. Vinodhini	Coordinator - Patient Safety & Quality

Cancer Institute (WIA) is committed to provide a health care quality that matches the definition, viz. safe, effective, efficient, equitable, timely and patient centered that in turn satisfies the standards set forth by National Accreditation Board for Hospitals and healthcare providers.

The Institution aspires to be a Centre of Excellence in Oncology providing quality treatment and service with state of the art facilities, teamwork of reputed health care specialists and dedicated staff. The Quality department of the Institute, supports by implementing the various hospital quality measures and NABH standards, so that the entire function is in a desirable state. This in turn shall improve patient experience and patient satisfaction.

A structured quality improvement and continuous monitoring programme at Cancer Institute (WIA) which is developed and implemented, is communicated and coordinated amongst all the staff of the organization through appropriate training mechanism like induction, in service etc & the programme is reviewed at pre-defined intervals to find opportunities for improvement.

Path to accreditation



Reaccreditation

Cancer Institute (WIA) has got renewal of its accreditation for 4 years now, valid till 2026. This follows the recent assessment by the National Accreditation Board for Hospitals and Healthcare Providers (NABH) team of 5, consisting of experts from various hospitals across India.

Over 3 days, this expert group put the processes and practices under the microscope, to ensure conformity to standards. The areas of concern, shortcomings and actionable points, marked as Non-Compliances were rectified, re submitted for approval and were promptly accepted by the external body. This has led to the grant of reaccreditation to our Institute until 2026.

Activities implemented

Standardisation of the consent forms

This Initiative was taken up by the Quality department to present a similar look of the Consent Forms across the Institute and also at the same time adhere to the NABH requirements with regard to Consent Forms. A Similar header with the Patient and Bed details has been provided across all the consents. The Certificate of Consent as per the WHO guidelines has also been implemented in all the consents.

Patient Reported Experience Measures (PREM)

In order to monitor the Patient Experience, a digitally formatted PREM Questionnaire on the various services provided was developed. This provides direct information about what patients and attenders think about the services offered. Examining patients' feedback gives direct insight into what is working well and what needs further improvement in the way care is delivered.

Patient Reported Experience Measures – PREM – Out-patients

With the PREM for In patients in place, a similar Patient Reported Experience Measures have now been extended to the Out patients also. Categorizing the Out patients feedback to the Admission, Registration, Cash, Doctors, Nursing, Clearing and Investigations, this is being now captured at all the OP areas.

Patient Reported Outcome Measures (PROM)

PROM capture has been initiated across the institute. This survey is captured to the same set of patients before the initiation of the treatment and also on completion of the treatment. This shall provide an insight into the health analysis which shall improve the Doctor-Patient communication which in turn shall improve the Patient Satisfaction. This measures the patient perception of their functional well-being.

Spread of Culture of Safety

Features for a culture of safety are sharing information, reporting occurrences of incidents, learning from safety incident analysis, blame-free culture and encouragement of collaboration across disciplines and departments. The key components of patient safety culture are informed culture, reporting culture,

learning culture, just culture and flexible culture. A Questionnaire was created to survey the culture of safety in the Institute. This is to ensure the adoption of behavior that promotes patient safety.

Internal Audits

Audits are steps to enhance Patient Safety. Internal Audits in various areas are conducted to ensure compliance within the departments. Hospital Wide Audits are also part of the Internal Audits. The findings and corrective and preventive measures are documented. The Corrections are implemented. These audits pave way to stay in compliance to the standards.

Internal Audits are being conducted every year which includes:

1. Hospital wide audit – Wards, Operating rooms, ICU, BMT, Diagnostics
2. Care of Patients
3. Medication Management
4. Prescription audit
5. Nursing practice audit
6. Infection Control practices
7. Facility Management & Safety
8. Laboratory Quality Assurance
9. Medical record audit
10. Support Services–CSSD, Kitchen, Waste management, House keeping

Prescription Audit

The Institute undergoes an audit of medication orders/prescription to check for safe and rational prescription of medications. The findings from these audits are disseminated for the GAP Closure and further implementation.

Medical Record Review

A review on Medical Records is implemented to ensure the compliances to documentation in the records. This has been implemented as an electronic process for the ease of use and for the ease of data analysis. The findings with non-compliances, like other audits, are to be closed and needs to be brought into practice.

Quality Rounds

Quality rounds are conducted by the quality department with the participation of the CQI Committee members. Further on, Quality Rounds continued every week under the Director's supervision and along with the CQI Committee members to various areas including the Dr. V. Shanta Campus, Stores, General Wards, Patel Block, Diamond Jubilee Building, Kitchen, Manifold Room and Gas plant.

Various findings were pointed out for changes. Mock Emergency Codes were announced to check the responses of the team for the respective codes.

Analysis of Key Indicators

Quality indicators are the means to judge the performance of parameters selected. All the mandated indicators by NABH are monitored by various departments and are summarized by the Quality department.

Metrics for Quality Improvement:

1	Time for initial assessment of In Door patient
2	Number of Reporting Errors/1000 Investigations
3	Percentage of adherence to safety precautions by employees in diagnostics.
4	Medication Error Rate
5	Percentage of medication charts with error prone abbreviations
6	Percentage of In patients developing adverse drug reaction(s)
7	Percentage of unplanned return to OT
8	Percentage of cases where the organization procedure to prevent adverse events like wrong site, wrong patient, wrong surgery have been adhered to.
9	Percentage of transfusion reactions
10	Standardised Mortality ratio for ICU
11	Return to the emergency department within 72 hrs with similar presenting complaints
12	Incidence of hospital associated pressure ulcer after admission (Bed sore per 1000 patient days)
13	Catheter Associated UTI (CAUTI)
14	Ventilator Associated Pneumonia (VAP)
15	Central Line Associated Blood Stream Infection (CLABSI)
16	Surgical Site Infection (SSI)
17	Hand hygiene Compliance rate
18	Percentage of cases who received appropriate prophylactic antibiotic within the specified timeframe
19	Percentage of re- scheduling of surgeries
20	Turnaround time for issues of blood and blood components
21	Nurse- Patient ratio for ICUs
22	Waiting time for out- patient consultation
23	Waiting time for diagnostics
24	Time taken for discharge
25	percentage of medical records having incomplete and / or improper consent
26	stock out rate of emergency medications
27	Number of variations observed in mock drill
28	Patient fall rate (Fall per 1000 patient days)
29	Percentage of near misses
30	Incidence of needle stick injuries
31	Appropriate handovers during shift change (To be done separately for doctors and nurses) – (per patient per shift).
32	Compliance rate to medication prescription in capitals

Other additional KPI monitored

Radiation Oncology

Work Load - Patient Staff Ratio

% of Patients treated with newer technologies

Medical oncology

Day Care - Average Waiting Time (min)

Average No of Days to start Systemic Therapy

Surgical oncology

Duration time between patient induction time with handing over time

Duration time between handing over time with incision time

Temperature maintenance & Refrigerator usage for medication

In order to provide more clarity on the temperature maintenance and the storage of medication in the refrigerator, it was decided to conduct an audit just to monitor the usage of refrigerators.

A team was identified in co-ordination to enable the audit.

A Checklist was created to capture, especially in the ward with relevant to the refrigerators. Based on the Checklist, an audit of the refrigerators used for medication storage was conducted in both the campuses.

Changes & Training were implemented based on the Audit findings. Re-audit was also conducted in early 2023 to confirm the implementation of the changes

Ambulance Compliance

Cancer Institute (WIA) has ambulances for transfer of patients within the campuses. Apart from these, in case of requirement to transfer sick patients, outsourced ambulance is used. This is well equipped for the purpose

Hence it was decided to conduct a check on the Ambulance practices and protocols. Post the audit, the corrective action was also implemented immediately.

Nursing Audit

Nursing Audits are detailed review and evaluation of selected nursing processes by qualified professional to identify, examine, or verify the performance of certain specified aspects of nursing processes by using established criteria. This assists in evaluating Nursing care given, Achieving deserved and feasible quality of nursing care, Stimulating better nursing processes and focus on patient care.

The following procedures were chosen for the audit.

- a. Tracheostomy
- b. Safe Injection & Infusion Practice
- c. Crash Cart
- d. Central Line Insertion

Discharge Process & Time Capture

Discharge Process, has a set of formalities to be abided by. At the Similar front, at the Institute reducing the time taken for discharge has always been a challenge. In order to ascertain the delay in the process, Quality department had initiated a monitoring system in the wards by capturing the time taken in the various processes of discharge. This shall enable to trace the delay over the process. On improvement of the same, the entire process of the Patient discharge can be a much quicker one.

Committee Review

The Institute has several committees functioning on a periodicity to address various topics. The review of these committees is addressed to the Director every quarter. The Committees:

- Continuous Quality Improvement Core Committee
- Cardio Pulmonary Resuscitation Committee
- Internal Complaints Committee
- Safety & Risk Management Committee
- Hospital Infection Control Committee
- Laboratory Safety Committee
- Pharmaco therapeutics Committee
- Blood Transfusion Committee
- Credential and Privilege Committee
- Purchase Condemnation Committee
- Facility Inspection Rounds Committee
- Hospital Infection Control Committee
- Patient safety Committee

Training

Quality Improvement includes People Improvement which in turn will lead to process improvement. Training is an integral part of People Improvement. Training has the potential to help gain an edge, build competency, and boost efficiency and Improvement, enabling consistent knowledge sharing. Trainings by the Quality department is a continuous process to enhance the knowledge of the staff involved in the Quality Improvement processes.

Mrs Varalakshmi training attended: 2022 to 2023

- Attended ISQua Webinar on Key Performance Indicators - Monitors, Measuring, Benchmarking in July
- Attended GPSC webinar_Patient Safety Education and Training
- Attended seminar on Work-flow Study to Achieve Process Excellence in Laboratory Services in August
- Attended workshop - Navigating Quality Improvement Journey Beyond Accreditation
- 1 day workshop on patient safety conducted by NABH in May 2022
- Certificate Course on Quality Tools & Techniques by CAHO in August
- Quality in Antimicrobial Stewardship - Advance Course, CAHO in December

- Did Six Sigma course & was awarded certified yellow belt – conducted by Efforts Consulting (Accredited with council for Six Sigma Certification (CSSC) USA) in December
- Attended NABH Master Class Series – Jan / Feb 2023 – CAHO

HUMAN RESOURCES DEPARTMENT

Staff

Mr.M.V.Rajasekharan, BA (English Literature); MA (Sociology); Diploma in Business Management	Head – HR
Mr.A. Niranjan, B.Com; MBA (Human Resources)	HR Officer
Ms. T. Hemalatha, DCP, B.Com	Steno Typist

Departmental activities

New Joining	: Total - 367 Break-up Employees - 288 Students - 79
Separation	: Total - 280
Employees Contract Renewal	: Total – 813
Induction Training Programmes	: 12 Programmes covering 271 employees
Institute wide departmental training conducted planned	: 773 training Programmes conducted as against 767
Employee Satisfaction Survey	: 1112 employees participated
Awareness of employees Rights and Responsibilities Survey	: 1112 employees participated

LIST OF VOLUNTEERS

1	MR. SRIDHARAN	CMCHIS
2	MRS. BAMA	CMCHIS
3	MR. ARAVIND	CMCHIS
4	MR. RAJAN K. S	CMCHIS
5	MS. BHUVANESWARI NITHYANANDAN	STORES
6	MS. JYOTHI	STORES
7	MS. SRIVIDYA	STORES
8	MR. KABILAN	REGISTRY
9	MS. RAMYA RANJITH	OPD
10	MR. KESAVAN E	ELECTRICAL

PUBLICATIONS

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