

Scope of Services

Medical Oncology & Haematology

- Chemotherapy
- Immunotherapy
- Bone Marrow Transplant
- Paediatric Oncology
- Geriatric Oncology
- Onco Critical Care

Surgical Oncology

- Head & Neck
- Breast
- GI, Lung & Thoracic
- Cervical and Gynaecology
- Prostate and Genito-urinary
- Colorectal
- Peritoneal
- Brain, Spine and Bone
- Liver & Pancreas

Plastic and Reconstructive Surgeries

Radiation Oncology

- Radiation Therapy

Nuclear Medicine

- PET CT
- SPECT
- High Dose Radionuclide Therapy

Pain and Palliative Care

Anaesthesiology

Dr. Rajendra Bagwade
Dr Dharmendrasinh Chavda
Dr. Yogesh Tank
Dr. Jignesh Mori

Cardiac

Dr. Ketan Vekariya

Internal Medicine

Dr. Rushikesh Shah

Medical Oncology & Haematology

Medical Oncology & Haematology

Dr. Pankaj Shah
Dr. Dileep Srinivasan
Dr. Mithun Shah
Dr. Nahush Tahiliani

Haematology & Bone Marrow Transplant

Dr. Nidhi Jain
Onco Critical Care
Dr. Mrugank Bhavsar

Surgical Oncology

Head & Neck

Dr. Mahesh H Patel
Dr. Siddharth Shah

GI, Lung & Thoracic

Dr. Mahesh D Patel
GI, Peritoneal, Gynaecology
Dr. Aditi Bhatt

Breast Cancer

Dr. Priyanka Chiripal

Uro Oncology

Dr. Mukesh Patel
Dr. Kamlesh Patel
Dr. Kaustubh Patel

Neuro Oncology

Dr. Dipak Patel
Dr. Kalpesh Shah

Spine Cancer

Dr. Hitesh Modi

Plastic & Reconstructive surgery

Dr. Raghuvir Solanki
Dr. Jatinkumar Bhojani

Radiation Oncology

Dr. Sandeep Jain

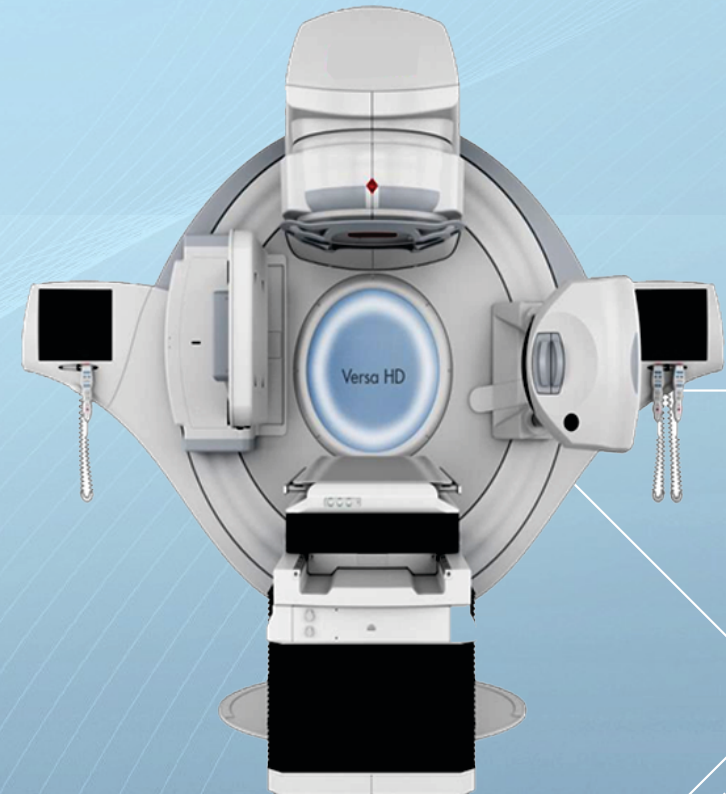
Nuclear Medicine

Dr. Sunny Gandhi

Pain Management

Dr. Milan Mehta

Department of Radiation Oncology



INTRODUCTION

Zydus Cancer Centre (ZCC) is equipped with the most advanced treatment facilities and specialised site specific multi specialty team of professionals which is a complete one stop facility for the patients providing comprehensive cancer care. The department of Radiation Oncology at the ZCC is established to provide patient centric, state of the art treatment to the international standards.

WE ARE DIFFERENT:

Individual cases are discussed in the multi-modality TUMOUR BOARD composed of Radiation Oncologist, Medical Oncologist, Surgical Oncologist, Nuclear Medicine experts, Pathologist, Radiologist and Palliative care specialist and decisions are made as applicable to their given clinical situation to arrive upon individualised management plan.

WHAT IS RADIATION THERAPY (RADIOTHERAPY)?

Radiotherapy is the branch of medicine that deals with the treatment of tumours (malignant or benign) through ionising radiations.

HOW DOES RADIOTHERAPY WORK?

Radiation therapy, or radiotherapy, is the use of various forms of radiation to safely and effectively treat cancer and other diseases. Radiation therapy works by damaging the genetic material within cancer cells. Once this happens, the cancer cells are not able to grow and spread. When these damaged cancer cells die, the body naturally removes them. Normal cells are also affected by radiation, but they are able to repair themselves in a way that cancer cells cannot be able to repair. Main aim of Radiotherapy is to give maximum dose to target volume or tumour and give minimum dose to surrounding normal tissues.

RT TECHNIQUES:

We offer whole range of technologies appropriate for given case including the high precision stereotactic procedures.

THREE DIMENSIONAL CONFORMAL RADIOTHERAPY (3DCRT)

In 3DCRT radiation is delivered according to size and shape of tumour from appropriate angles, with an attempt to block the normal tissues.

INTENSITY MODULATED RADIOTHERAPY (IMRT)

The backbone of modern high-precision radiotherapy is intensity modulation across all three dimensions. IMRT is a new way of giving radiation therapy which uses software-based planning and delivery of tightly focused radiation beams to tumours. This reduces the radiation dose to surrounding healthy tissues and organs and thereby resulting side effects.

IMAGE GUIDED RADIOTHERAPY (IGRT)

IGRT is a step ahead of IMRT towards precision. A CT scan of the patient is taken in treatment position before delivering radiation using cone-beam CT scanner attached to the linear accelerator. This ensures that the radiation is being delivered to the intended region in millimeter accuracy.

Volumetric Modulated Arc Therapy (VMAT)

Limitations of fixed field IMRT has lead to development of arc based IMRT in which the machine moves around patient at the time of radiation delivery. VMAT is arc-based approach to deliver IMRT with the following merits:

- Much lesser treatment time as few as two minutes
- Well shaped radiation dose envelope around the tumour with lesser dose to the surrounding tissues
- Less chances of tumour motion during delivery resulting in greater precision
- Reduced secondary stray radiation caused by scatter and leakage
- Better patient comfort for elderly patients with cardio-respiratory illness and poor general health

Stereotactic Radiosurgery & Radiotherapy (SRS / SRT)

SRS/SRT are high precision techniques which uses highly potent biological dose of radiation delivered using 3D coordinate-system for the exact localization of the tumours, thus ensuring millimeter accuracy. The common indications of SRS are:

- Arterio-venous malformation
- Acoustic neuroma
- Brain metastases
- Pituitary adenoma
- Meningioma
- Glomus tumour
- Low-grade astrocytoma

Stereotactic Body Radiotherapy (SBRT)

SBRT is similar concept of SRS applied for tumors in body even with respiratory and other movements. It involves the delivery of a 1-8 high dose radiation sessions to ablate the tumours with motion management techniques. This was not achievable previously and has much better outcomes than fractionated radiation therapy and useful even in resistant tumors. Indications of SBRT are:

- Primary lung cancer
- Primary liver tumours
- Prostate cancer
- Pancreatic, bile duct tumors
- Kidney tumours
- Metastatic tumours in lung, liver, vertebra, abdomen, adrenal

OUR TECHNOLOGY:

- First installation of iDosisoft in India for verification of treatment
- First time in Gujarat "intrafraction CBCT" for real time monitoring during treatment
- Elekta Versa HD with photons, electrons and FFF mode for fast delivery
- Agility multi-leaf collimators (160, 5 mm wide) with fastest leaf speed
- Hexapod couch with 6 dimensional correction
- Monaco planning system with monte-carlo algorithm
- Cone beam CT and X-Ray Volume Imaging (XVI) verification
- Fraxion stereotactic frame, AIO with SBRT accessories

What are the clinical benefits of high precision radiotherapy?

- Better sparing of normal tissues
- Better tolerance to the treatment
- Better quality of life
- Dose escalation to tumour in some patients
- Improved chances of cure

TOTAL BODY IRRADIATION (TBI)

Total body irradiation is a technique of giving radiation to whole body as part of conditioning of bone marrow transplant (BMT). Technically its quite challenging to cover whole body uniformly and saving vital organs like lung. It is used in the following conditions:

- Acute myeloid and lymphoblastic leukemias
- Relapsed Non-Hodgkin's lymphoma
- Aplastic anemia, B thalassemia
- Neuroblastoma
- Ewing's sarcoma/unfavorable pediatric sarcomas
- Conditions requiring BMT

Dr. Sandeep Jain's Profile:



- He has over 14 years of experience and is presently working as a Senior Consultant Radiation Oncologist at Zydus Cancer Centre, Ahmedabad.
- He got training from renowned **Tata Memorial Centre, Mumbai** for 3 years
- He has done a research fellowship in Head & neck high precision radiotherapy
- He pursued fellowship at **Clatterbridge Cancer Centre, Liverpool** for Lung stereotactic body radiotherapy and **Cipto Mangunkusumo National General Hospital, Jakarta, Indonesia** and specialized in high precision

radiotherapy in head and neck cancers

- He Has eight and half years work experience include **Mazumdar-Shaw Medical Center, Narayana Health City (NH) main campus, Bangalore**
- He was instrumental in developing **cranial stereotactic radiosurgery (SRS)** program with x-knife with good long term follow ups of patients in addition to administrative responsibilities.
- He is also ECFMG certified with more than 10 indexed publications including 6 original articles in international journals and many faculty presentations in national and international conferences
- He has a vast experience on radiation therapy equipments and planning systems of different techniques including the high end techniques like IMRT, IGRT, VMAT, SRS, SBRT, TBI, electron therapy, brachytherapy.

Areas of Interest:

High Precision Radiotherapy (IMRT) in Head and Neck (laryngo-pharyngeal) cancers, Re-radiation, cancer survivor rehabilitation, cranial stereotactic radiosurgery, lung SBRT, Neuro-oncology

For Queries Please Contact:

Department of Radiation Oncology
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STATE-OF-THE-ART INFRASTRUCTURE

LINAC – VERSA HD with HDRS

- First Versa HD with HDRS in Gujarat
- First Dosisoft installation in the entire South Asia
- Intra-fraction CBCT imaging is the 1st of its kind in Gujarat
- Critical Structure Avoidance (CSA) is the unique feature in elekta exclusive especially for SRS/SBRT
- Advanced MLC delivery with lowest leakage of 0.5% (Competitive leakage is 3%)
- Delivers radiotherapy in 4-5 fold increase in dose rate, thereby reduces treatment time
- Reduces dose to nearby critical structures
- Delivers radiation therapy with better sparing of normal tissues
- Capable of achieving high positional accuracy

RAISING THE BAR IN CANCER CARE

- ✘ **High precision radiotherapy with versa HD**
- ✘ **High dose radionuclide therapy**, nuclear theranostics and precision medicine
- ✘ **SPECT** with high definition detectors
- ✘ **Robotic techniques** for complex surgeries
- ✘ **Stage-IV** cancer treatment using **HIPEC technique**
- ✘ **Gujarat's biggest bone marrow transplant unit**
- ✘ **Scarless head and neck surgeries**
- ✘ **Breast reconstruction surgeries**
- ✘ First-of-its-kind **32 Slice PET CT** in Western India
- ✘ **3D mammography with High Definition (HD)** tomosynthesis
- ✘ HDRS - unique approach to **stereotactic radiosurgery**
- ✘ Fully-integrated diagnostic services with **cutting-edge technology**
- ✘ **Transparent billing** and comprehensive packages