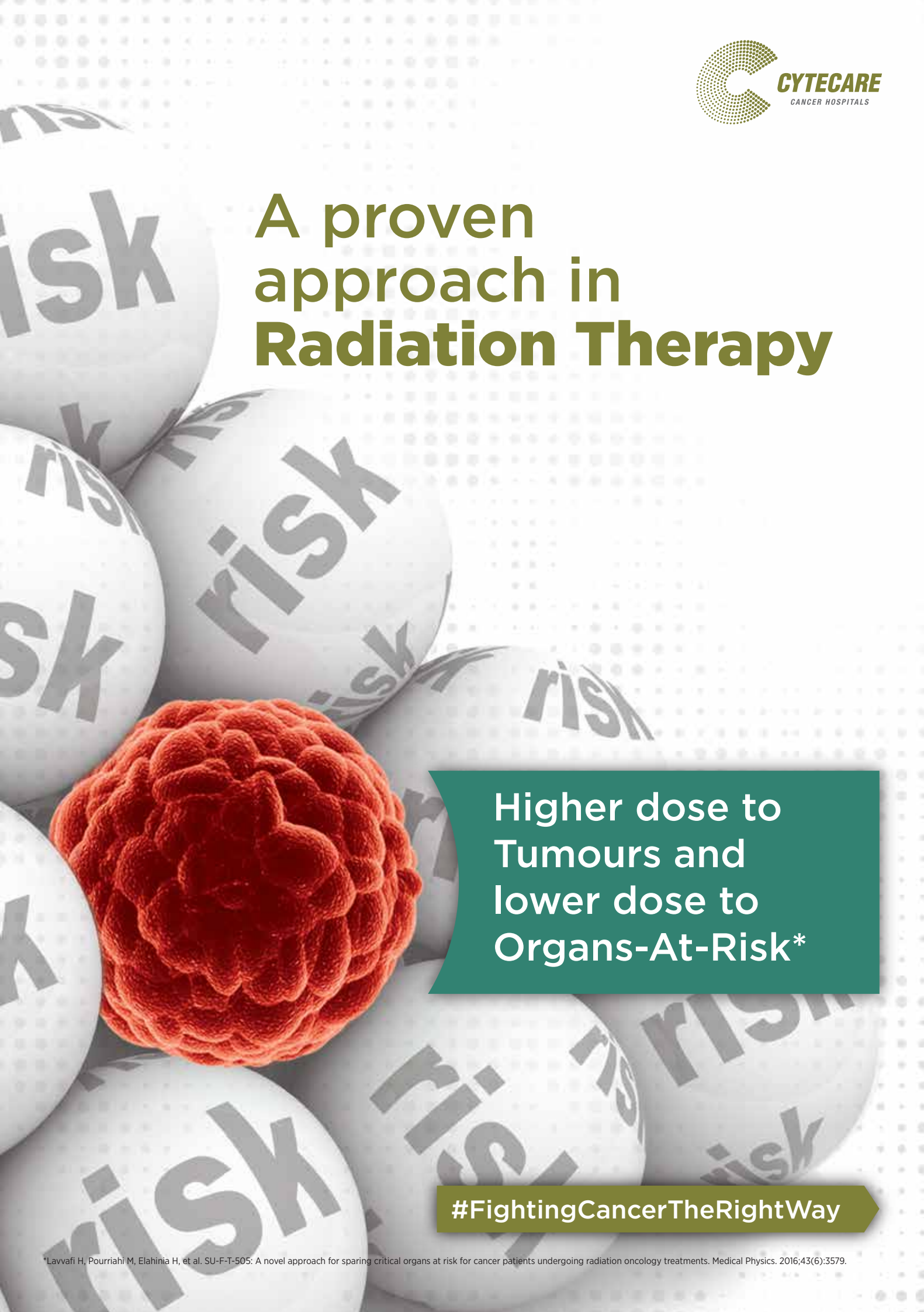
CYTECARE
CANCER HOSPITALS

A proven approach in **Radiation Therapy**



Higher dose to Tumours and lower dose to Organs-At-Risk*

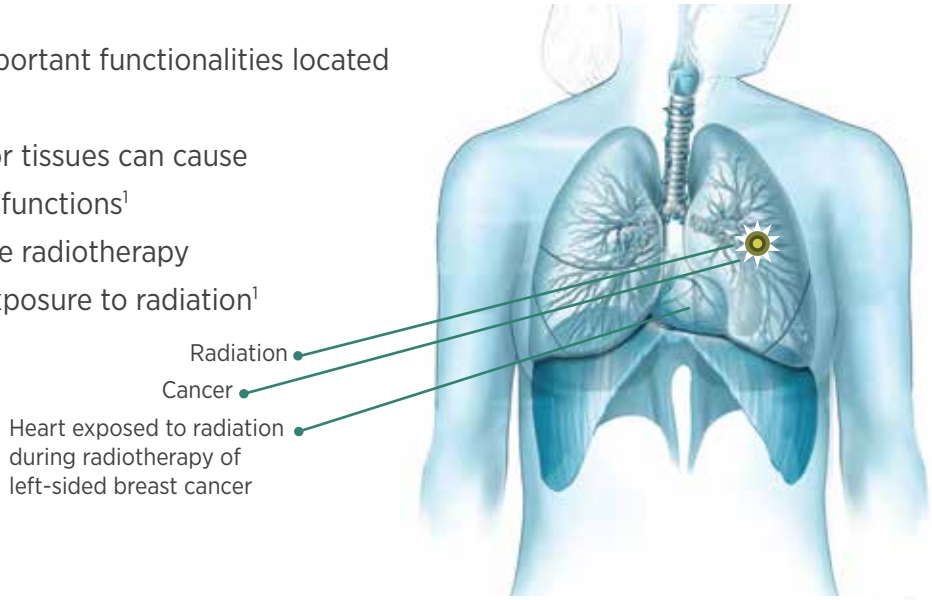
#FightingCancerTheRightWay

*Lavvafi H, Pourriahi M, Elahinia H, et al. SU-F-T-505: A novel approach for sparing critical organs at risk for cancer patients undergoing radiation oncology treatments. Medical Physics. 2016;43(6):3579.

The significance of sparing OARs from the effects of radiation therapy

Organs-At-Risk (OARs)

- OARs are critical structures with important functionalities located very close to the target area[1]
- Irradiation to these normal organs or tissues can cause pathological changes, altering their functions[1]
- OARs need to be outlined during the radiotherapy planning process to minimize the exposure to radiation[1]



Types of OARs

Serial OARs:

They lose their complete functionality even if only a small volume of the organ receives a dose above the tolerance limit. Examples are spinal cord, optical nerve, and optical chiasm[1]

Parallel OARs:

They are damaged only if a larger volume is included in the irradiation region. Examples are the lungs and liver[1]

Serial-parallel OARs:

Some organs have a serial-parallel configuration, such as the heart, where the coronary arteries are parallel OARs and the myocardium is a serial OAR. Kidneys and Nephrons share the same arrangement.[1]

Versa HD™ – Offers Versatility from Classic Radiotherapy to Advanced Stereotactic Precision[2]

Provides precision and speed necessary to deliver advanced SRS/SRT/SBRT techniques[2]

- Offers maximum accuracy in tumour targeting and protects OARs
- Reduces treatment time with rapid leaf speeds and high-dose delivery

Offers flexibility for conventional radiotherapy[2]

- Potential to deliver conventional techniques such as IMRT, IGRT and VMAT in a single, easy-to-use apparatus
- Offers flexibility for conventional therapies to treat the broad spectrum of tumours throughout the body

The only system to unlock the true potential of high-dose rate delivery[2]

3D conformal radiotherapy[2]

Equipped with sophisticated conformal beam-shaping technology and high-dose rate mode delivery

Multileaf collimator[2]

160 MLC with 5 mm resolution and a 40x40 cm treatment field

Treatment customized beam alignments[2]

Three photon energies (6 MV, 10 MV, 15 MV) provide custom configurations for unique clinical needs

Robotic patient positioning system[2]

HexaPOD™ evo RT System is guided by an infrared camera that enables sub-millimeter patient positioning accuracy in six degrees of freedom

Latest imaging technology allows soft tissue visualization during treatment[2]

Powered by Monaco®[2]

- Delivers high performance and high precision radiotherapy planning
- Makes radiotherapy planning process faster, easier, and clinically reliable

IGRT: Image Guided Radiation Therapy; IMRT: Intensity Modulated Radiation Therapy; MV: Milli Volts; SBRT: Stereotactic Body Radiation Therapy; SRS: Stereotactic Radiosurgery; VMAT: Volumetric Modulated Arc Therapy; MLC: Multileaf Collimator

Meet the expert at Cytecare

Dr. Ajay Rao P
Consultant
Radiation Oncology
MBBS, DNB (Radiotherapy)

Areas of special interest

- IMRT (Intensity Modulated Radiation Therapy)
- Adaptive Radiotherapy: IGRT (Image-Guided Radiation Therapy)
- PET-CT-based IMRT (Intensity Modulated Radiation Therapy) Planning for Head & Neck, Prostate and Lung Cancer
- GEC-Estro-Based Image-Guided Brachytherapy
- Head & Neck Cancers
- Gynaecologic Cancers
- Prostate Cancer Gold Seed Fiducial-Based Image-Guided Radiotherapy
- Respiratory gating using ABC technique for left-sided breast cancers, lung cancers and liver cancer SBRTs

Dr. Rao is specialized in performing 3DCRT (Three-Dimensional Conformal Radio Therapy), IMRT (Intensity Modulated Radiation Therapy) with special focus on head & neck with SIB technique, prostate and lung subsites; SRS (Stereotactic Radio Surgery), SRT (Stereotactic Radio Therapy), IGRT (Image-Guided Radiation Therapy) and interstitial brachytherapy for gynaecological malignancies. Dr. Rao has several years of experience in institutions such as HCG (Hubli and Bangalore), and Vishwabharathi Cancer Hospital in Kurnool, where he worked as a radiation oncology consultant. He has also worked as a visiting consultant at Vikram Hospital, BGS Global, Apollo, Baptist, and Fortis Hospitals.

Dr. Rao has also been involved in several research projects and studies at national and international levels.

References

1. Grosu AL, Sprague LD, Molls M. Definition of target volume and organs at risk. Biological target volume. In: Schlegel W., Bortfeld T., Grosu AL. (eds) New Technologies in Radiation Oncology. Medical Radiology (Radiation Oncology). Springer, Berlin, Heidelberg, pp 167-177.
2. Data on File. Elekta. Available at: https://www.elekta.com/radiotherapy/treatment-delivery-systems/versa-hd/; accessed on July 26, 2017.

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