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Abstract

Lung cancer SBRT calculation algorithm dosimetric comparison between AAA and AcurosXB in intensity modulated radiation therapy IMRT

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Abstract:

Background: This paper purpose is to assess the accuracy of two Algorithms, Anisotropic Analytical algorithm (AAA) and Acuros XB (AXB) used for dose calculation in treatment planning system Eclipse TPS (Varian Medical Systems, Palo Alto, CA). Estimating conformity (CI) and homogeneity index (HI) using 6 MV photon energy implemented in true beam linear accelerator

Material and methods: CT series of 27 non-small cell lung cancer (NSCLC) patients treated with intensity modulated radiation therapy (IMRT) technique. Complex cases planned for stereotactic radiation body radiosurgery (SBRT) treatment, using (AAA) algorithm. Then recalculate the same plans using Acuros XB algorithm estimating the conformity index (CI) and Homogeneity index (HI) for PTV using dose volume histogram (DVH) for both calculation algorithms were calculated.

Results: The results of the part of clinical study showed no significant differences for the mean dose but different noticed in conformity index for the planning target volume (PTV) for both algorithms that was between (1.45±0.55)for AAA and (2.17±0.7) for Acuros XB however the Homogeneity Index difference (0.15±0.07) for AAA and (0.1±0.08) for acuros XB, the maximum dose for PTV are significantly differ about 2.3% to 4.5% between them.

Biography:

I'm looking for a full-time position where my past professional, Educational, Work and personal experiences could be highly utilized and Developed with a great leader A Challenging position Where I can prove and develop my personal and professional skills in a great teamwork atmosphere. Over 7 years' experience in Medical Physicist in Radiation Oncology. Extensive knowledge of radiation therapy quality assurance regulations and a strong understanding of the driving forces behind new technology and product development in Radiation Therapy with a master Degree of Radiation physics. Radiation safety officer license (ENRRA).

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