

Current State of Art Technology

Methods of radiation knew very important progress these last years, in particular with Intensity-Modulated Radiation Therapy (IMRT) and Conformal 3D Radiotherapy (CR). The goal of CR is to optimize the dose delivered to the planning target volume (PTV) and to protect the organs at risk (OR). After execution of several plan of treatment, the final choice is done starting from the physical criteria of judgements (dosimetric). The EUD concept is very well suited to obtaining the biological result of heterogeneous irradiation of a volume of interest.

Scope

These studies, also related to the topic of gating were positionning and continue within the framework of project of OPRAD Canceropole, thanks to collaboration between teams of CHU of Besancon and CAV of Nancy, and with progressively the team of IRMA of Montbeliard. The EUD models take the dose volume concept into account in a different way, considering biological functional characterisation.

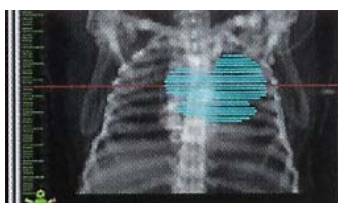
Objectives

The aim of these studies is amongst other things to define a correlation between EUD and clinical manifestations of normal-tissue damage by studying patients treated for lung cancer included in the gating trial, a multi-institutional trial.

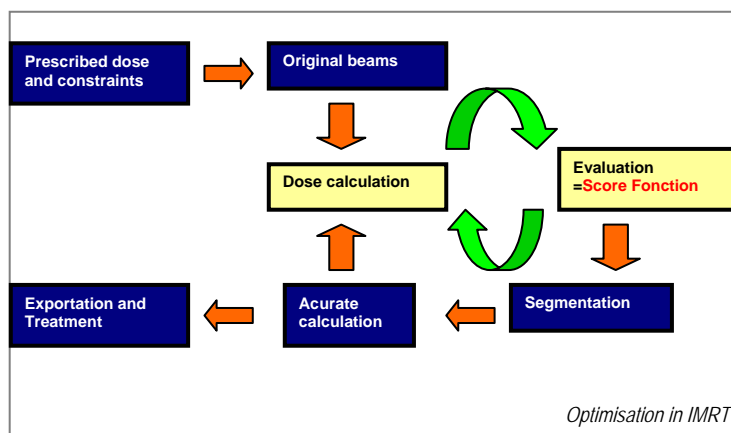
Different parameters (DHV, EUD, SF, Dmean...) will be defined for each OR (lung, oesophagus, spinal cord and heart). The toxicities developed in medium term (follow up 24 months) will be followed, in order to establish a correlation between EUD and clinical manifestations of normal-tissue damage.

The interest is double on the one hand to predict and prevent the last effect of tissues, on the other hand to increase prescribed dose to the PTV according to the tolerance of the tissues predicted by the EUD.

Purpose



Importance of pulmonary volume irradiated, predictive of a radiation pneumonitis.



Partners

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