First year of clinical rapidarc treatments at iosi: status report

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Introduction

The clinical activity and a summary of statistics of patients treated with RapidArc technique at IOSI in the first year from its clinical implementation.

Material and Methods

Clinical indications, number of patients, stratified for pathology and district, basic treatment plan characteristics will be presented according to updated statistics at time of presentation. Pretreatment quality assurance procedures and results will be discussed. Treatment modality and efficiency in terms of time to perform IGRT and beam on time will be addressed. Future pespectives will be outlined

Results

Since its introduction in september 2008, at time of abstract submission, 130 patients (for a total of 158 plans) have been treated or on treatment: 63 prostate, 33 anal canal, rectum or pancreas, 10 gynaecologic, 2 chordoma, 3 brain, 3 bilateral breast, 1 cranio-spinal irradiation for medulloblastoma, 1 paediatric Hodgkin lymphoma, 14 other sites. This corresponds to 27% of the total number of IMRT patients at IOSI since 2001. Dose prescription ranged from 5.4 to 78 Gy with or without SIB strategies. An average of 24±10 fractions were applied with an average of 1.1±0.3 arcs per plan. Mean collimator angle used for individual arcs was 23±8 degrees. Mean number of MU per fraction were 416±136. Taget coverage in average is D98>93% with high sparing of organs at risk which will be detailed with the final analysis. Looking at the prostate subpopulation of the first 63 patients, with a dose prescription ranging from 66 to 78 Gy and a PTV V95%=96.1±2.4%, the mean dose to the rectum was 40.2±4.0 Gy with V50Gy=20.1±9.1%; the mean dose to the bladder was 46.5±12.0 Gy with V50Gy=30.2±20.7%. Mean beam on time is: 1':18"±19.". Mean IGRT time is: 7':37"±2':43". Concerning pre- treatment QA with portal dosimetry (with GLAaS method) Gamma Agreement Index is: 97.7±2.3% (with a tolerance threshold of 95%, criteria of DTA=3mm, DeltaDose=3%).

Discussion

RapidArc was smoothly introduced in clinical practice, results are confirming expectations and the new modality will progressively replace IMRT in most of the clinical indications at IOSI.

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