

gynecological (5, 5, 6) and abdomen (6, 7, 7). These results constitute our own margins for our equipment and treatment protocol, they could differ from generic results published on literature. The IGRT off line protocol reduces systematic errors, which have most impact on margin expansion. Our results show a margin reduction with the IGRT by: thorax (31%), rectum (50%), prostate (51%), head&neck (25%), gynecological (47%) and abdomen (40%).

Conclusions. The use of IGRT allows measurement and reduction of the setup patient errors needed for the creation of our own institutional margins.

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Dosimetric comparison in cervical cancer with different therapeutic modalities

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Introduction. Cervical cancer is usually treated with RC3D and in supine position, and generally the bowel is not contoured in exclusive pelvic irradiation cases.¹ In our center we would like to verify what is the dose that bowel receives in these cases and whether the patient positioning or the irradiation technique influence the distribution of the dose-volume histogram.

Materials and method. We present a cervical cancer Ib in supine position planning with RC3D and VMAT[®] techniques and in prone position with RC3D. VMAT[®] plan in supine position was carried out by MONACO 3.10.02 version. This plan consisted in a single 360° arc with 6 MV. RC3D plans in supine and prone position were carried out by XiO[®] 4.64 version with three treatment fields with 15 MV: 0° field and two lateral opposed fields.²

Results. All treatment plans had to satisfy ICRU-62 conditions, such that 99% of the PTV volume receives at least 95% of the prescribed dose of 46 Gy to pelvic volume and 54 Gy to boost volume. Hot spots up to 107% of the prescribed dose were allowed and OAR's were evaluated with tolerances recommended by QUANTEC.³ The PTV has a very similar dosimetric behavior in the three plans carried out.⁴ The average dose of the PTV with VMAT[®] planning was 54.87 Gy for the supine position and it was 55.68 Gy and 55.64 Gy respectively for prone position. The PTV volume that receives doses greater than 107% of the prescription dose was less than 1% in three plans. The dosimetric analysis in small bowel showed a decrease of the V10, V20 and V30, V40 in favor of the prone position. Being this difference of a 35.2% for the V10, 41.5% for the V20, 43.2 the V30 and a 43.2% for the V40. A small dose difference between supine position of VMAT and RC3D was calculated for V20, V30 and V40 and it was 2.9%, 8.7% and 13.5% respectively.

Conclusion. In view of the results RC3D planning in prone position gets a better dosimetric distribution in PTV's and organs at risk than VMAT[®] treatment in supine position, so we will initiate a prospective study about in these patients.

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Evaluation of the integral dose peripheral dose in healthy tissue of radiotherapy treatments for prostate cancer 3DCRT techniques, IMRT and VMAT inverse



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Introduction and objectives. Treatment with external radiotherapy CP can be performed with three techniques: 3DCRT, IMRT inverse VMAT recently. Objective is to compare these techniques to evaluate the healthy tissue dose, defined as the total volume minus that planning sets the volume (PTV).

Methods. We selected 32 patients, 19 with CP low risk, 13 surgical bed. The TC supine position, full bladder and rectum empty. Prostates prescription dose 76 Gy and 66 in the beds. Each patient underwent three different schedules in Pinnacle planner version 9.1, Elekta Synergy accelerator, 6 MV photons. Planning 3DCRT in 5 fields (0°, 90°, 135°, 225° and 270°) IMRT inverse 7 fields, (0°, 50°, 90°, 130°, 230°, 270° and 310°), VMAT full arc. Integral dose was evaluated as the product of the volume in cm³ of