

“tumoral repopulation”, “radiotherapy delays”, “treatment interruptions”, “overall treatment time”, etc. Additionally, we traced the bibliographic references indicated in the articles previously selected. Special attention was paid in the quality of data reported, carefully divided into univariate or multivariate analysis.

Results. Fifty-five papers were considered to fit the purposes of the present study: 49 original data from retrospective series and 3 were pooled-data analysis of previously published series, with a median of 426 patients per article (range 42–4668). The other 3 papers included one editorial, one commentary and a literature review. Larynx was the most frequently reported site (22 articles, 40%), followed by mixed locations (19 articles, 35%) and oropharynx (5 articles, 9%). The majority of the original and pooled-data studies (46/52–88.4%) showed some evidence of a negative relationship between OTT prolongation and LRC or SV. From 50 articles that analyzed LRC, 44 (88%) showed a significant deleterious effect of OTT prolongation, 27 of them by multivariate analyses. And from 16 articles reporting SV data, 14 (87.5%) showed the same effect, 10 of them by multivariate analyses.

Conclusions. Consistent evidence exists about a negative outcome in LRC and SV, when OTT is prolonged during a RT course for H&NC. Over 88% of the studies reporting LRC and/or SV endpoints showed its detrimental effect, mostly by multivariate analysis of retrospective data. Taking into account the overwhelming ethical difficulties to perform any randomized clinical trial, prospective or retrospective observational studies are the unique evidence available to deal with this important issue.

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Feasibility of craniospinal irradiation in supine position for medulloblastoma in children population. Comparison of different therapeutic dosimetric data



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Introduction. Medulloblastoma is the most common malignant childhood brain tumor. Radiotherapy to the craniospinal axis (CSI) with a boost to the posterior fossa has been standard practice. The standard for CSI has been photon therapy that included opposed lateral cranial fields and either single or multiple posterior spinal fields in prone position, in order to confirm the junction shifts. This is an uncomfortable and difficult position for children. The new irradiation techniques could help us to improve the positioning and the reproducibility of treatment.

Methods. Standard of care treatment plans were developed in supine position in one patient for both 3D and Rapid Arc CSI. Patient underwent computed tomography (multi-slice CT scan) simulation in the supine position. Differences in plans were evaluated for various dosimetric parameters for the target volumen and normal tissues. Three dosimetric parameters were evaluated for the CTV: the maximum dose (D_{max}), the conformity index (CI: VRx/VEv) and the heterogeneity index (HI: $D5\%/D95\%$). We evaluated V20, V15, V10 and V5 for six partially in-field and out-of-field organs.

Results. Four arcs/two isocentres/table 0° were employed in Rapid Arc plan and four fields/two isocentres/table in 0° and 90° in 3D plan. CI were 0.99 and 0.90 for Rapid Arc and 3D plans respectively, indicating that the dose distribution conformed well to the CTV and it is better for Rapid Arc. Moreover, D_{max} was greater for 3D plan (higher doses to a large percentage of volumen) and the same for HI indicating a more heterogeneous distribution. When we compared the results in relation to normal tissues, all values related to V20, V15 and V10 were higher for 3D plan than for Rapid Arc plan.

Conclusions. CSI with Rapid Arc technique in supine position is feasible, safety and reproducible, face-lifting the treatment (comfortable positioning, no table movements) and reducing dose to normal tissues in children population who are at high risk of developing late toxicities.

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Five years experience with total body irradiation



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Introduction. Total body irradiation (TBI) has an established role as preparative regimen for bone-marrow transplantation (BMT) in the treatment of some hematological malignancies. This preparative regimen remains always associated with a relatively high rate of toxicity.

Objective. Report the experience in TBI treatment the last 5 years in our Hospital.

Materials and methods. We report a retrospective analysis of the patients who underwent TBI for conditioning prior to BMT for hematologic disease between January/2006 and December/2011. Were treated 12 patients (8 women and 4 men), the age of the patients was between 9 and 54 years (median 29.5years). They had diagnoses of LLA in 58.4% and LMA in 41.6%. Eleven patients had induction chemotherapy with PETHEMA and one with SHOP. Complete response before radiotherapy in 66.6% and partial in 33.3%. Radiotherapy was administrated with cobalt-60 in 25% and linear accelerator in 75%. All of them received 12Gy twice daily along 3 days. Pulmonary dose was ≤ 8 Gy. Transplant allogeneic in 75% and autologous in 25%.