AbstractID: 12706 Title: Dosimetric Analysis of Simultaneous Integrated Boost with Step and Shoot IMRT

Purpose: In this work, the dosimetric parameters of Simultaneous Integrated Boost treatment with step-and-shoot IMRT were analysed. **Method & Materials**: Treatment plans of eight patients, who were treated for locally advanced head and neck squamous cell carcinoma, were included in the analysis. The homogeneity index for target volumes was estimated. The dose to critical organs- spinal cord, brainstem and parotids were analysed. The hot spots in the cord and the brainstem, the serial organs, were analysed by considering the maximum dose to 2% volume and for parotid, volume that receives 30Gy or more was considered. **Results**: For the cord and the brainstem the objectives of <45Gy and <54Gy respectively were well met and, $V_{30} < 50\%$ for at least one parotid was also met. **Conclusion**: Treatment of HNSCC with SIB using static multi-segmental IMRT also could provide desirable homogeneity in dose distribution and enable adequate sparing of organs at risk.