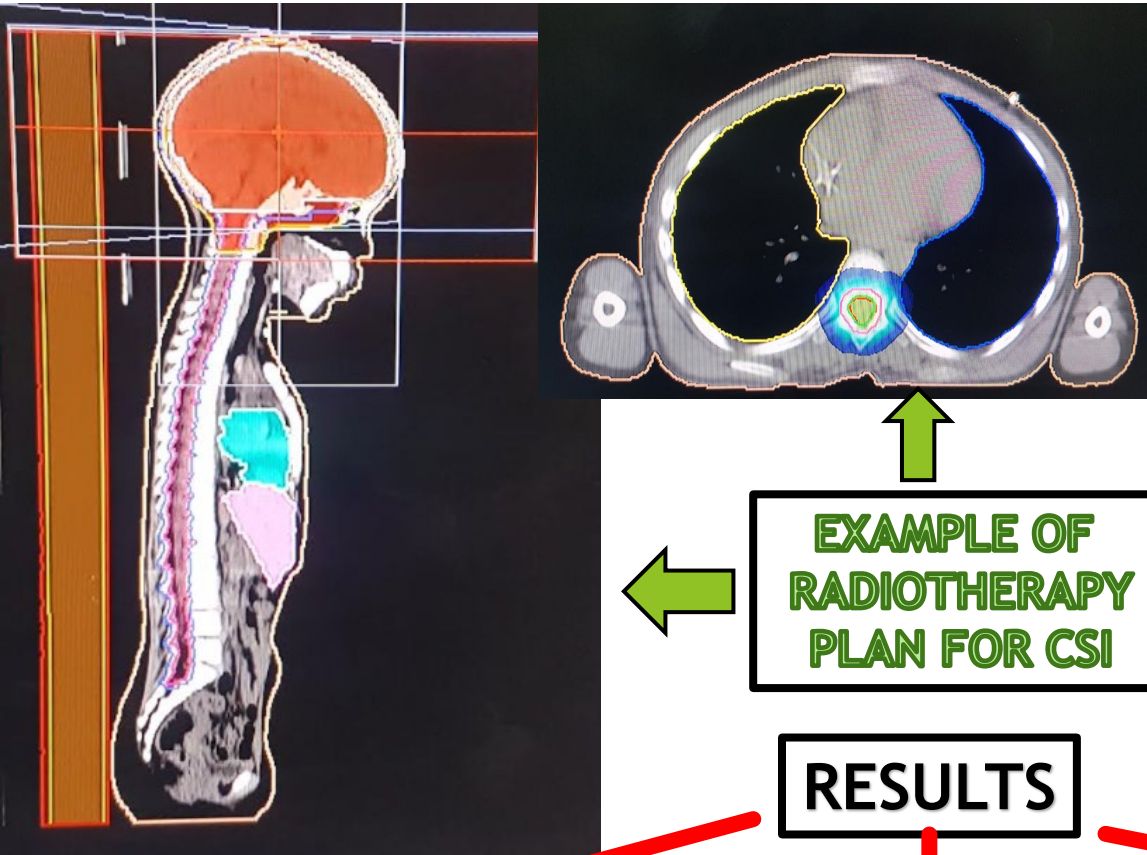


DOSIMETRIC REVIEW OF CRITICAL ORGANS AT RISK IN PEDIATRIC PATIENTS TREATED WITH CRANIOSPINAL VOLUMETRIC MODULATED ARC THERAPY

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INTRODUCTION

Craniospinal irradiation (CSI) is indicated in many pediatric malignancies. The technique is complex and involves irradiation of the entire cranio-spinal axis. With advances in technology radiation techniques have become significantly more sophisticated over the years. This allows better coverage of the target area and better sparing of the “organs at risk” (OAR).

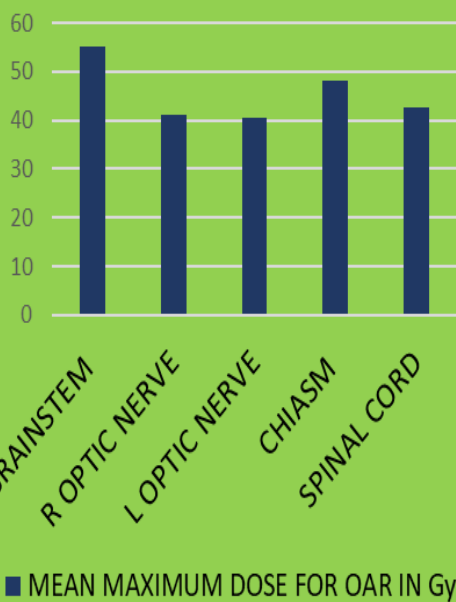


METHOD

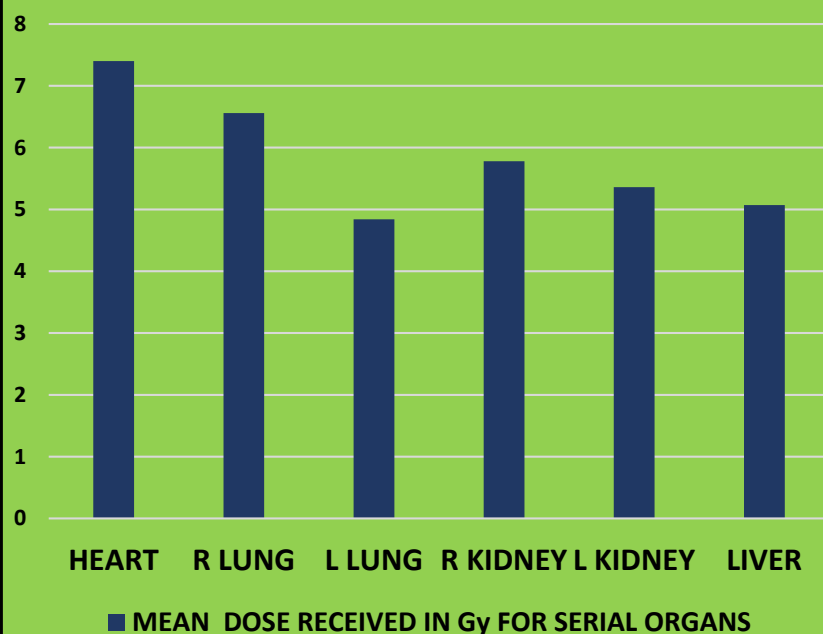
5 radiotherapy craniospinal treatment plans were evaluated: 3 performed for medulloblastoma, 2 for leukaemia. The dose to the PTV was calculated as a percentage of the prescribed dose. The mean, minimum and maximum doses for each organ at risk were calculated. For the purposes of the poster only the clinically relevant maximum was presented for the serial OAR's and the mean for the serial OAR.

RESULTS

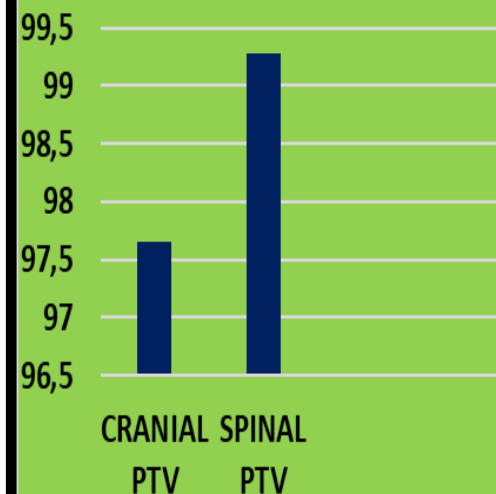
MEAN MAXIMUM DOSE FOR OAR IN Gy



MEAN DOSE RECEIVED FOR SERIAL OAR IN Gy



COVERAGE AS A % OF THE PRESCRIBED DOSE



CONCLUSION

The maximum dose received for all serial OAR was consistently below the allowed maximum and the mean dose for parallel organs also consistently below the threshold value for radiation damage. Our experience with volumetric arc therapy for pediatric craniospinal irradiation shows that the technique is both safe and effective.