

Mohamed Abdelgawad, Eman Ibrahim Ismail, Mohamed Abd Elwahab Badway: **A dosimetric study of conformal radiotherapy and two dimensional conventional radiotherapy in craniospinal irradiation for medulloblastoma patients.** PAJO 7(3): 10-13, Sep 2014

Background and purpose

There has been an evolution from two dimensional (2D) to three dimensional (3D) planning. Our aim was to compare dosimetrically the dosimetric outcomes for target coverage and organs at risk

Patients and methods

Twelve patients of medulloblastoma. In 3DCRT clinical target volume (CTV) for craniospinal irradiation is the entire craniospinal axis. Three posterior coplanar beams were used to treat the spinal PTV. The CTV posterior fossa boost volume encompass the entire posterior fossa. Organ at risk oars outlined on planning CT. In Conventional(2D) planning radiotherapy we used osseous reference marks as performed in routine practice. The dose according to risk (23.4 Gy, 36 Gy) to the craniospinal axis and dose to the ptvpf up to be 54.0, 55.8 Gy.

Results

There was no statistical difference in PTV coverage when comparing 3D to conventional 2D planning. The mean of dose to OAR were all decreased when comparing 3D to 2D planning as follows: LT lens RT lens, Thyroid, Dental area, and Heart, with statistical difference in thyroid and heart. While mean dose to OAR were all increase when comparing 3D to 2D as follows Lt eye, rt eye, Lung, kidneys, bladder, and liver with statistical difference in kidneys and Lt eye.

Conclusion

No statistical difference in mean dose of PTV coverage, and was noted to have reductions in maximum dose of PTV and some selected organs at risk. Further study comparing 3D conformal radiotherapy (3DCRT) planning with IMRT is needed to analyse the dose uniformity in CSI.