TBI - A Review of Techniques

Material: This report summarizes the physical techniques for TBI for institutions that belong to the Pediatric Oncology Group (POG), as reported to QARC. Data are reviewed for 30 institutions representing 33 techniques (three institutions reported multiple techniques based on patient size).

Results: The beam energy of choice for treatment ranges from Co-60 to 24 MV with 20 institutions using a beam spoiler to achieve adequate surface dose. To achieve dose uniformity, 21 of the 33 techniques use tissue compensators. The dose rate at the treatment distance varied from 5 to 22 cGy/min. The treatment distance, at patient midplane, varied from 1.83 to 6.46 meters. The majority of institutions treat at a distance of at least 3 meters and about 20% use > 5 meters. Of the 27 institutions with only one irradiation technique, 13 use an AP/PA technique and 14 use opposed laterals. There are a variety of patient positions for treatment; only 5 of the 33 techniques reported use AP/PA with the patient standing. Further details of the techniques will be presented, and variations in fractionation, dose, and normal tissue doses will be summarized.

Conclusions: TBI techniques remain varied among these 30 POG institutions. These data may be representative of the wide diversity of treatment techniques that exist.