Abstracts

RO-08. THE EFFECTIVENESS AND SAFETY OF PBT IN CHILDREN WITH MALIGNANT CENTRAL NERVOUS SYSTEM (CNS) TUMOURS: A SYSTEMATIC REVIEW
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OBJECTIVES: To assess the clinical effects of PBT for the treatment of children with malignant CNS tumours. METHODS: Eleven electronic databases were searched from 1985 onwards. Comparative and non-comparative studies were included. Outcomes included overall survival (OS), local/distant relapse rates (LRR and DRR), toxicities, neurocognitive outcomes and quality of survival. Standard systematic review methods were used to minimise bias in study identification, selection and data extraction. RESULTS: Seventeen studies with 492 patients (pts) were included. Mean sample size was 29 (range: 6-109) with mean follow-up of 3.1 years (range: 0.1-11.7). Studies were in: low grade glioma [n = 3, pts = 65; OS: 83%-100% (follow-up: 2.0-7.6 years); 3-year LRR: 0%]; ependymoma [n = 3 pts = 91; OS: 79%-100% (follow-up: 2.2-3.0 years); LRR: 0%-46% (follow-up: 2.2-5.0 years); DRR: 17%-33% (follow-up: 3.0-5.0 years)]; medulloblastoma/primitive neuroectodermal tumours (PNET’s) (n = 3, pts = 211; OS: 81%-86% (follow-up: 3.0-7.0 years); LRR: 0%-15% (follow-up: 3.2-7.0 years); DRR: 24% at 7.0-years); atypical teratoid rhabdoid tumours (AT/RT) [n = 5, pts = 76; OS: 53%-90% (follow-up: 2.0-3.2 years); LRR: 0%-20% and DRR: 20%-40% (follow-up: 2.3-3.2 years)]; germ cell tumour [n = 1, pts = 22; OS: 100%; LRR: 0%; DRR: 4.5% (follow-up: 2.3 years)]; pineoblastoma [n = 1, pts = 11; LRR and DRR both 5% at 1.7-years]. Adverse late effects reported were ototoxicity (9%-21%), neuro-endocrinopathies (3%-63%), growth problems and neurocognitive deficits. CONCLUSIONS: The limited quantity and quality of evidence suggests PBT probably achieves similar OS and LRR as historic photon cohorts, whilst having a similar or reduced mid-late toxicity profile. However, this is subject to substantial uncertainty due to limited long-term outcome data and no controlled evidence.