ABSTRACT CITATION ID: NOAE064.596
QOL-08. THE LONG-TERM UTILITY OF METHYLPHENIDATE FOR THE PRESERVATION OF INTELLECTUAL DEVELOPMENT IN CHILDHOOD SURVIVORS OF BRAIN TUMOUR
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BACKGROUND: Enduring neurocognitive late effects are a common consequence of childhood brain tumour survivorship. Conceptual modelling of intelligence suggests initial deficits to processing speed and attention lead to the subsequent plateauing of intellectual and academic development. The utility of methylphenidate in improving attentional and processing speed deficits within the early phase of recovery has been previously reported. The longer-term contribution of methylphenidate in preserving intellectual ability through ameliorating these early deficits is yet to be evaluated.
METHODS: Twenty-nine childhood survivors were matched retrospectively with a no-treatment synthetic control. Intellectual assessments were conducted prior to starting methylphenidate and a minimum of 12 months thereafter. For the no-treatment control group, intellectual data were collected retrospectively from archival records, employing a similar assessment period. Linear Mixed Models were used to assess the influence of methylphenidate on intellectual trajectories between groups and fatigue scores over time. RESULTS: Methylphenidate was associated with raw score improvements across all intellectual indices compared to no-treatment controls. Linear Mixed Modelling reported a borderline significant improvement in Processing Speed ($t = 1.98, p = .05$) for the methylphenidate group. In comparison, a borderline significant ($p = .05$) within-group decrease in Working Memory scores was reported for the no-treatment group. There was a significant within-group decrease in pooled PedsQL MFS scores between assessments for the treatment group ($t = -4.01, p < .01$), with the most notable decrease observed in Sleep/Rest Fatigue ($t = -10.17, p < .01$). CONCLUSIONS: Methylphenidate may pose a valuable long-term rehabilitative strategy in preserving Processing Speed in childhood survivors of brain tumour. Whilst our sample size is small, there is tentative evidence for the utility of methylphenidate in alleviating fatigue experienced by childhood survivors.