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# Longitudinal assessment of ataxia in children following surgical resection of posterior fossa tumours

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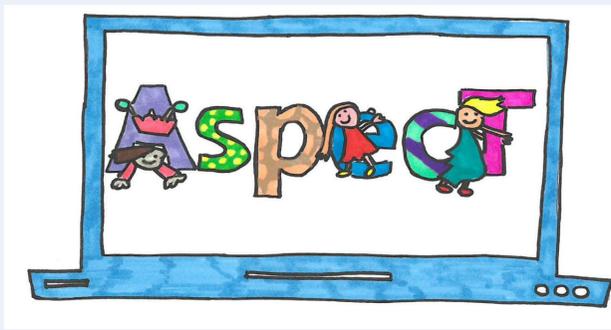
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# The ASPECT Study – Longitudinal assessment of ataxia in children following surgical resection of posterior fossa tumour

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## Background

Ataxia is the most common motor problem in children with posterior fossa tumours. However, the natural history of ataxia following surgical resection is poorly understood.

## Objective

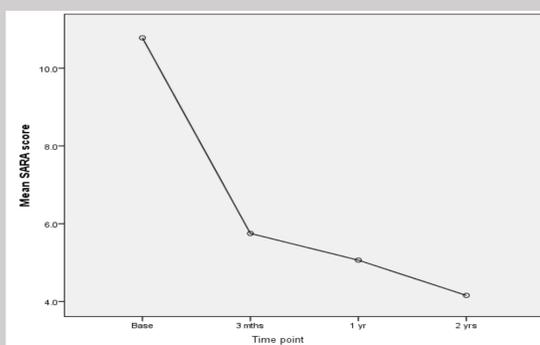
To report the natural history of ataxia in the first two years following surgical resection of a posterior fossa tumour.

## Methods

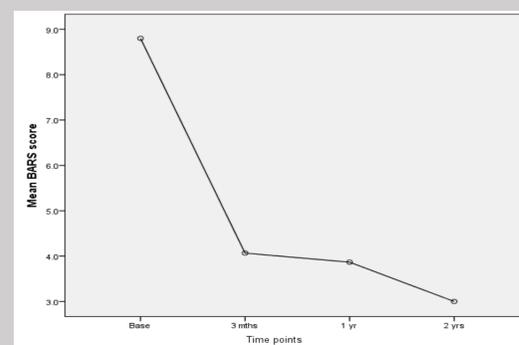
20 children (mean age 9.9 years, range 5-15 years) who had undergone resection of a posterior fossa tumour were assessed using the Scale for the Assessment and Rating of Ataxia (SARA)<sup>1</sup>, Brief Ataxia Rating Scale (BARS)<sup>2</sup> and the Pediatric Evaluation of Disability Index mobility subscale (PEDI)<sup>3</sup> at the following time points; initial post operative period, then at 3 months, 1 and 2 years post operatively.

## Results

Ataxia scores rapidly improved between baseline and 3 months post-operative assessment (mean reduction in SARA 4.8, BARS 4.6). There were gradual improvements at 1 year and 2 years post op (mean reduction SARA Year 1 0.6, Year 2 0.9; BARS Year 1 0.2, Year 2 0.9 respectively).



Change in SARA over time



Change in BARS over time

Functional scores demonstrated similar improvements quantified by a rapid increase in PEDI score between initial and 3 month assessments (mean increase 26) and gradual increases at 1 and 2 years (mean increase 2, 2.5 respectively).

## Conclusions

The largest change in ataxia scores and functional mobility scores (PEDI) is demonstrated within the first 3 months post operatively. Ongoing gradual improvement in ataxia and mobility function was observed at 2 years. However, change after 3 months is less than the minimally clinically important difference reported for both the SARA (MCID reported as 1 in adults<sup>1</sup>) and PEDI (MCID reported as 11% in children<sup>4</sup>). These results have implications for management of children with posterior fossa tumours.

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3 Hayley S., Coster W., Ludlow L., Haltiwanger J., Andrellow P. (1992). Pediatric Evaluation of Disability Inventory: Development, Standardization and Administration Manual. Boston: Trustees of Boston University.

4 Iyer L., Haley S., Watkins M., Dumas H. (2003) Establishing minimal clinically important differences for scores for the pediatric evaluation of disability inventory for inpatient rehabilitation. *Physical Therapy*. 83 (10) p888-898.