

PROJECT TITLE

Neuro-ophthalmic, oculomotor and visual considerations in pediatric acquired brain injury

TEAM MEMBERS

Alysha Ladha MD^{1,2}

J. Raymond Buncic MD^{3,4}

Peter Rumney MD^{1,2,5}

Ryan Hung MD^{1,2,5}

ORGANIZATIONS/AFFILIATIONS

¹Division of Developmental Pediatrics, Department of Pediatrics, University of Toronto, Toronto, Ontario, Canada

²Holland Bloorview Kids Rehabilitation Hospital, Toronto, Ontario, Canada

³ Department of Ophthalmology, The Hospital for Sick Children, Toronto, Ontario, Canada

⁴Sick Kids Research Institute

⁵Bloorview Research Institute

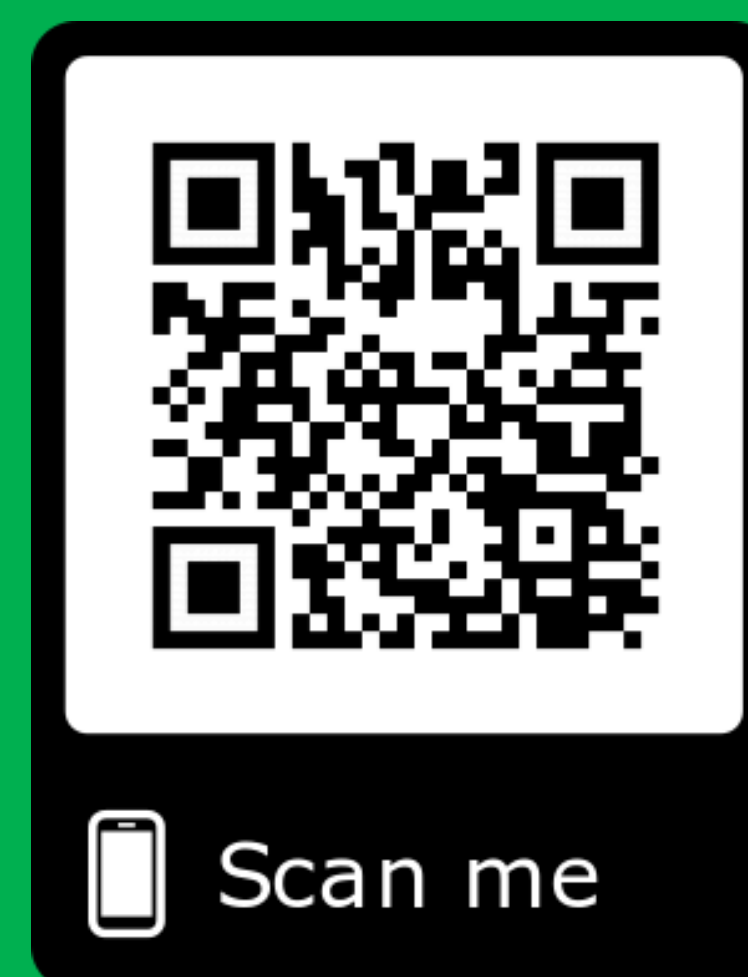
RATIONALE

There is limited information in the pediatric literature on vision impairment in acquired brain injury, specifically regarding prevalence, risk factors and longitudinal data. This study evaluates vision impairment up to 2 years post injury and related factors.

METHODS

A retrospective chart review was conducted on individuals admitted to the Brain Injury Rehabilitation Team at Holland Bloorview Kids Rehabilitation Hospital from January 2003-December 2012, who underwent assessment by Ophthalmology. Those with significant vision impairment prior to their injury were excluded.

A range of vision impairment is seen in children/youth with brain injury. Having raised intracranial pressure is a risk factor for developing vision impairment



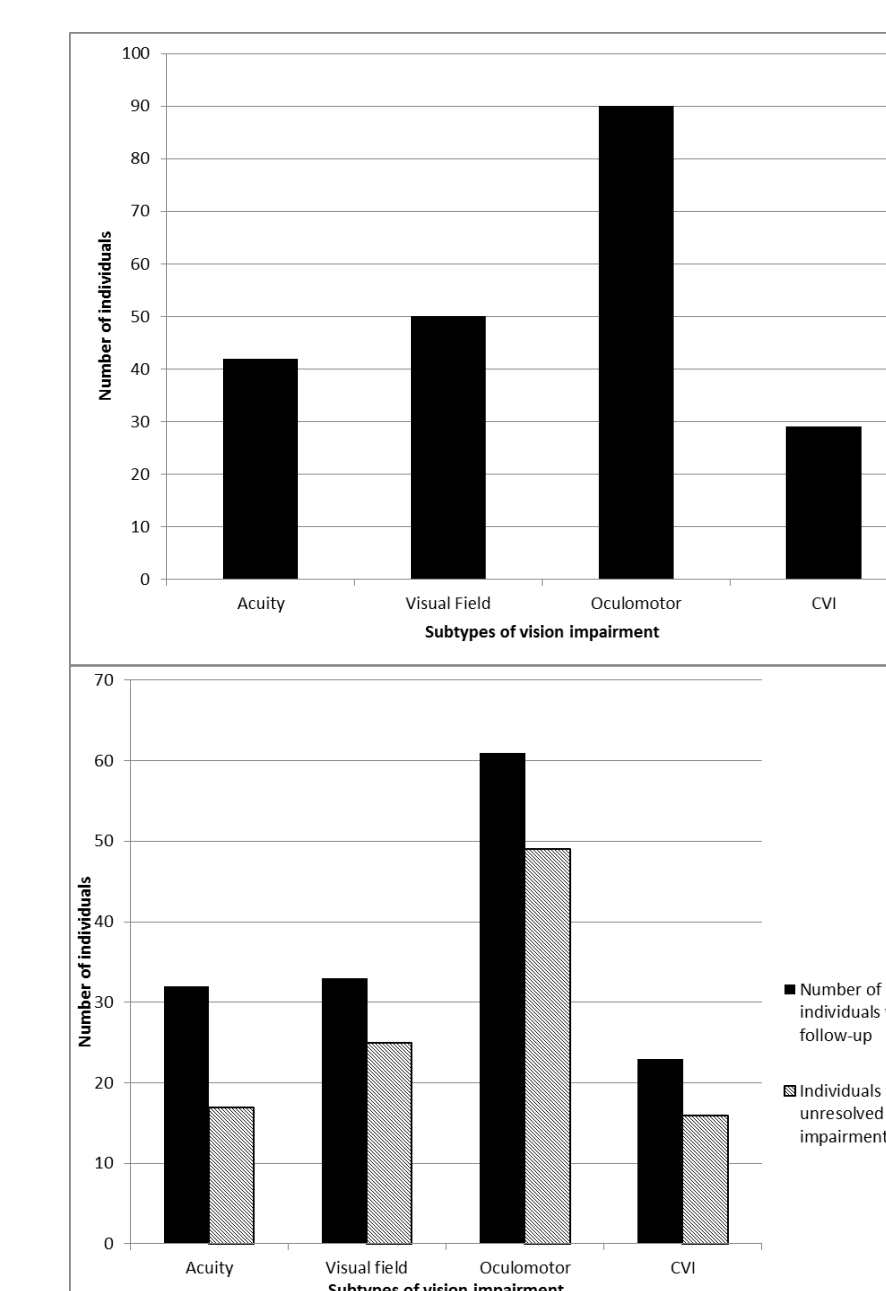
RESULTS

Of the 212 individuals seen for Ophthalmology assessment, 129 (61%) had some form of vision impairment, representing 16% of all admitted patients.

Deficits ranged from oculomotor (70% of individuals with vision impairment), to visual field defects (39%) and visual acuity (33%).

Individuals with a history of raised intracranial pressure (ICP) were 3.4 times more likely to have vision impairment of some type (95% CI=1.89-6.20; p<0.001).

FIGURE/GRAPHS



DISCUSSION

Findings including a high proportion of oculomotor deficits and presence of multiple impairments are in keeping with the adult literature.

Raised ICP as a risk factor independent of the Glasgow Coma Scale score is a novel finding.

CONCLUSIONS

A high proportion of individuals with pediatric ABI seen for ophthalmologic assessment had resultant vision impairment. Resolution of vision impairment was seen in a subset of individuals. These findings can help identify those at risk for vision impairment and be used in counseling families regarding prognosis.