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IDENTIFICATION OF MECHANISM, PECARN RISK FACTORS AND INJURY PATTERNS IN SEVERE PAEDIATRIC CERVICAL SPINE INJURIES IN QUEENSLAND

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INTRODUCTION

Canadian C spine rule and NEXUS criteria have identified risk factors for cervical spine injury in adults but not for children. PECARN has developed an 8 variable model for cervical spine injury in children. We sought to identify the mechanism, prevalence of PECARN risk factors, injury patterns, and management of severe Paediatric cervical spine injuries presenting to the major children's hospitals in Brisbane, Australia.

METHODS

This a retrospective study of the children with cervical spine injuries who presented directly or were referred to the major children's hospitals in Brisbane over 5 years.

RESULTS

There were 38 patients with 18 male and 20 female .The mean age was 8.6 years. They were divided into two groups according to their age, (Group 1 < =8 years had 18 (47%) patients, while group 2 (9-15 years) had 20 (53%) patients. Motor vehicle related injuries were the most common (61%) in Group 1 while it was sporting injuries (50%) in group 2. All patients in group 1 had upper cervical injury (C0-C2) while subaxial injuries were most common in group 2 (66.6%). 82% of the patients had 2 or more PECARN risk factors. 18 children (47%) had normal neurological assessment at presentation, 6 (16%) had radicular symptoms, 11 (29%) could not be assessed as they had already been intubated due to the severity of the injury, 3 (8%) had incomplete cord injury. 29 (69%) patients had normal neurological assessment at final follow up and 2 children died from their injuries.

CONCLUSION

Our study confirms that younger children sustain upper cervical injuries most commonly secondary to motor vehicle accidents, while the older sustain subaxial injuries from sporting activities. The significant prevalence of the PECARN risk factors among this cohort of patients have led to them being incorporated into a protocol at these hospitals used to assess patients with suspected cervical spinal injury.