



Head injury secondary to suspected child maltreatment (abuse or neglect)

PROTOCOLS

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Background

Despite the fact that the term 'battered child syndrome' was first used in 1962, the study of child maltreatment is still in its infancy in Canada. This is true even though maltreatment comprises a major cause of mortality and morbidity for Canadian children and youth. Even the most basic questions about maltreatment in Canada are just beginning to be answered. There is an incomplete picture on the number of children that suffer abuse or neglect, the extent they are harmed, the way health-care professionals identify children at risk and the process they follow to protect those children.

Internationally, published incidence data of child maltreatment underestimate the extent of the problem, as they differ considerably from actual case studies reported through the legal and/or medical systems. These differences can be attributed to a number of factors, including fear of disclosure (stigma, fear of potential consequences) and failure by professionals to recognize and report child maltreatment. Until recently, the literature regarding the prevalence of child maltreatment was limited with over 90% of the information originating from the



United States and most of the remaining literature from the United Kingdom and Australia. To date, there were two attempts to quantify the issue in Canada.

The Canadian Incidence Study of Reported Child Abuse and Neglect (CIS) collected information directly from child welfare investigators for three months in 1998. This study found that 2.1% of children were investigated for maltreatment, which was substantiated in nearly half of these cases. Some type of physical harm was documented in 18% of the 3,780 substantiated cases of abuse and the authors, through extrapolation, estimated that this reflected 61,156 cases across the country in 1998. However, medical attention was only sought for 4% of these cases, and in less than 1% was it sought for broken bones or head injury. These results have been questioned because the determination of physical harm was made by child welfare workers rather than health workers, and even physicians can miss inflicted head trauma at initial presentation. The CIS provided the first national estimates of child abuse and neglect reported to, and investigated by, collaborative work within the child maltreatment community. Other limitations of the CIS include the expensive cost and the use of a complex multi-stage cluster sampling (due to the variation and complexity with which child abuse is reported and investigated in each provincial/territorial jurisdiction) that requires extrapolation to derive national estimates of the incidence of child maltreatment. As a result, the educational needs of physicians for information are not met.

The second Canadian study was a recently published ten-year chart review of 364 cases of shaken baby syndrome (SBS) treated at 11 Canadian paediatric centres. In 40% of cases, there was no sign of external injury upon children's presentation. This study excluded cases of inflicted injury that did not involve evidence of shaking and included only hospital cases of SBS, thereby limiting the generalizability of its findings.

Although rare, cases of inflicted head injury are of great clinical importance, as a large proportion of them result in permanent neurological deficits (19% of the children in the SBS review died and 78% had an impairment at the time of hospital discharge). As a result, there is much support for tracking these injuries, and the *Canadian Joint Statement on Shaken Baby Syndrome* recommends surveillance and collection of data on SBS. Thus, the purpose of this study is to conduct active surveillance for head injury in children secondary to suspected child maltreatment (abuse or neglect*) amongst Canadian children. Accordingly, in order to get as complete a picture as possible and raise awareness of this possibility in older children, the study will include children and youth up to 14 years of age. This is both a reasonable follow-up age for paediatricians and will allow the use of Statistics Canada standard age groupings in the analysis.

Methods

Through the participation of 2,500 paediatricians and paediatric subspecialists reporting monthly to the CPSP, data will be collected on patient characteristics, injury event presentation and characteristics, management and outcome.



Head injury secondary to suspected child maltreatment (abuse or neglect) (continued)

Case definition

All new cases of a child up to 14 years of age inclusively, who has any mechanism of head or brain injury consistent with abuse/neglect* (e.g., shaking, impact, suffocation) and that has been reported to provincial/territorial child welfare agencies. Report regardless of whether or not you reported the case yourself to the agency.

Inclusion criteria

- Objective diagnostic evidence of head or brain injury. These may include radiologic, ophthalmologic or forensic findings, such as skull fracture, cerebral contusion, subdural or epidural or subarachnoid haemorrhage, cerebral oedema, retinal haemorrhages.

OR

- Clinical evidence of a significant head or brain injury (e.g., severe head soft tissue injury, depressed level of consciousness, seizures, focal neurological findings).

* Definition of neglect taken from the *Canadian Incidence Study of Reported Child Abuse and Neglect* (CIS):

Neglect/Failure to protect

The child has suffered harm or the child's safety or development has been endangered as a result of the caregiver(s)' failure to provide for or protect the child. Please note that the term 'neglect' is not used in some provincial/territorial statutes, but interchangeable concepts include: failure to care and provide or supervise and protect; does not provide, refuses or is unavailable or unable to consent to treatment.

- a. Failure to Supervise or Protect Leading to Physical Harm:** The child suffered or is at substantial risk of suffering physical harm because of the caregiver's failure to supervise and protect the child adequately. Failure to protect includes situations in which a child is harmed or endangered as a result of a caregiver's actions (e.g. drunk driving with a child, or engaging in dangerous criminal activities with a child).
- b. Physical Neglect:** The child suffered or is at substantial risk of suffering physical harm caused by the caregiver's failure to care and provide for the child adequately. This includes inadequate nutrition/clothing and unhygienic, dangerous living conditions. There must be evidence or suspicion that the caregiver is at least partially responsible for the situation.

Objectives

The study on head injury secondary to suspected child maltreatment (abuse or neglect) will:

- describe the Canadian incidence,
- describe the incidence in at-risk groups among the Canadian paediatric population,



- identify the presentation, patterns and burden of head injury,
- inform strategies to improve protection of children and youth and provide an opportunity to educate health-care professionals.

Duration

March 2005 to February 2007 (renewable)

Expected number of cases

Given that the study of SBS found under 400 cases over a ten-year period, the anticipation is a minimum of 40 cases per year.

Ethical approval

Research Ethics Board of the Children's Hospital of Eastern Ontario, University of Ottawa.

Analysis and publication

Incidence results will be presented as rates per 1,000 children per year, calculated from population data published by Statistics Canada. All head injuries will be analyzed, including subsets of impact, shaking and non-impact injuries and, injury patterns in subsets by age (<1 year, 1-4 years, 5-9 years, 10-14 years). Investigators will not report specifics in any table that has less than five cases. Data results will be submitted to a peer-reviewed journal upon completion of the study. In addition, investigators will ensure that the results are disseminated to those responsible for the primary, secondary and tertiary prevention of child maltreatment through a variety of communication mechanisms.

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