A clinical prediction tool (CPT) to identify maltreatment in children with burns and scalds

Aims An estimated 10% of childhood burns arise from neglect or physical abuse. The challenge for emergency department (ED) staff with limited child protection training and a high staff turnover is to recognise these children. The aim of this study is to design an evidence-based CPT to assess the risk of maltreatment in a child who presents to ED with a burn or scald.

Methods Derivation: An evidence-based proforma Burns and Scalds Assessment Tool (BaSAT) was developed from a systematic review of the characteristics of burns or scalds due to maltreatment. Standardised data were collected on 1327 children <16 years presenting to EDs in the UK and Ireland (2008–10). A CPT for risk of maltreatment was derived from a logistic regression model of several influential factors for the referral of 112/1327 cases to Social Care, namely; age <5 years, known to social services, inappropriate injury explanation, full thickness burn, atypical body location, bilateral symmetry and supervision concerns. Based on the predicted probabilities from the logistic regression, the CPT was adapted into a simple scoring system to grade cases as ‘concern’/‘no concern’ for child maltreatment. Validation: data on children with burns attending four UK EDs were collected prospectively (2013–14) on a revised BaSAT, and the CPT prediction validated against child protection referrals to social services.

Results The validation: Of 789 children (median age 30 months) with burns, 7% (54) were referred to social services. The CPT classified 19% (74/389) scalds, and 26% (104/400) burns as ‘concern’. For scalds the sensitivity for identification of children referred to social care was 83% (95% CI 59–96%) and specificity was 84% (95% CI 80–88%) for scalds; positive likelihood ratio (LR+) 5.2 for non scalds the sensitivity was 81% (95% CI 64–92%) and specificity of 79% (95% CI 74–83%) for non-scalds; LR+ 3.9.

Conclusions The CPT shows promise as an aid to clinical decision-making in the ED setting. In conjunction with the BaSAT it provides standardised clinical assessment and documentation of children with burns/scalds and a prediction of the likelihood of maltreatment. Its applicability and accuracy will now be tested in an implementation evaluation.

Abstracts

Child Protection Special Interest Group

G45 WHAT IS THE ASSOCIATION BETWEEN EPISTAXIS AND ASPHYXIATION IN CHILDREN UNDER 2 YEARS? A SYSTEMATIC REVIEW

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Aims Whilst epistaxis is a frequent and trivial finding in most children, it is rare in those aged less than 2 years. Epistaxis has been observed amongst intentionally asphyxiated infants using covert surveillance, although the precise relationship between epistaxis and asphyxia has subsequently been called into question. This systematic review aims to determine the probability of asphyxia amongst young children presenting with epistaxis, and define the clinical characteristics of such children.

Methods An all-language search of published and grey literature across 10 databases from 1900–2014 was conducted with 76 key terms. Searches were supplemented with ‘snowballing’ techniques including hand searching non-indexed journals, checking articles’ references, and correspondence with authors for clarification. Inclusion criteria: high quality studies involving children with epistaxis aged less than 2 years; alive or dead on presentation; adequate confidence or exclusion of intentional or unintentional asphyxia (upper airway obstruction), using an explicit rank of confirmation of asphyxia and non-asphyxia. Studies of traumatic or pathological epistaxis were excluded. All studies were independently critically appraised and data extracted by two trained reviewers.

The probability of asphyxiation in a young child with epistaxis was estimated in a meta-analysis using a random-effects model and is reported as a proportion with 95% Confidence Intervals (CI).

Results Of 2549 studies identified, 100 underwent full review, resulting in six included studies, representing 30 children with asphyxia-related epistaxis and 74 non-asphyxia related epistaxis. Meta-analysis was feasible for 4 studies yielding a probability of asphyxiation of 20% (95% CI = 13–29%). Children with asphyxia-related epistaxis were aged 30–684 days and described by 2 comparative cross-sectional studies, 1 case-control study, and 3 case series (1 of which was comparative). Live asphyxiated children tended to present unwell with altered skin colour, respiratory difficulty, and chest X-ray abnormalities. There were no associated features described among those dead on arrival.

Conclusion This systematic review defines the probability that epistaxis, in the absence of trauma or medical explanation, may indicate asphyxia in children aged less than 2 years, thus reiterating the importance of full investigation of these children who may be at considerable risk of death.

G46 A SYSTEM FOR ASSESSING THE RISK OF FEMALE GENITAL MUTILATION (FGM) FOR FEMALE INFANTS BORN TO MOTHERS WHO HAVE UNDERGONE FGM

Aims To introduce and assess the effectiveness of a questionnaire to examine the level of risk of FGM if a girl is born to a mother who has undergone FGM.
Methods In May 2014 a new policy was introduced within the hospital where every woman with FGM, who gave birth to a female infant, was referred to social care. This policy arose from a recommendation by the local safeguarding children board. Health care professionals were asked to complete a screening questionnaire with the mother and attach the answers to the referral. The questionnaire asked details about maternal FGM, thoughts about her child having FGM and the potential for family pressure. Over a five month period (May to September), all the social care referrals were analysed to assess the outcome of the referral and if the questionnaire helped to stratify the degree of risk of FGM to the female infant. Results In the time period studied 163 women who attended antenatal booking reported that they had undergone FGM. Of those who delivered in the five month study period, 32 went on to give birth to a female child. The immediate outcomes of these 32 cases were analysed and categorised into high, medium and low risk. Of those who were high risk, two were allocated to a senior social care practitioner for formal assessment, two cases are ongoing formal assessment and three were allocated to early help. Of the medium risk, six cases were referred to a multi-agency service and in three cases the family was offered further support through the charity sector. In the low risk category, 14 cases required no further intervention (in one case the screening questions themselves acted as an adequate assessment). One case needed continued support by social care due to disability of the child and in one case the outcome was not known. Conclusion The questionnaire formalised the referral process, identified infants at high risk and also helped to stratify risk into low, medium and high. It also indicated the demographics at highest risk. The questionnaire also has potential as a primary prevention measure in itself.

REFERENCE

SIBLING CHILD PROTECTION (CP) MEDICALS ARE CURRENTLY CONDUCTED ON AN ADHOC BASIS: THE NEED FOR NATIONAL MINIMUM STANDARDS FOR IDENTIFICATION AND EXAMINATION OF THIS VULNERABLE GROUP

Background There are currently no minimum national standards for conducting sibling CP medicals and few published studies show little consensus amongst healthcare professionals and social services in conducting these medicals. Aims Collation of sibling CP medical information from senior safeguarding clinicians in our region and examination of the child protection database of our NHS Trust with the aim of formulating a local sibling CP medical protocol. Methods First survey: online Survey Monkey was sent out to 40 safeguarding doctors and nurses in our region from Dec 2013–Feb 2014. Second survey: analysis of records of all CP referrals and medicals conducted in 2010 including handwritten CP medical proforma and final typed medical reports completed by Paediatricians in our NHS Trust. Results 25% responded to our Survey Monkey. Majority of respondents said they conducted sibling CP medicals in their organisations. Most respondents (80%) had no protocol to guide their decisions and commented that medicals were normally done on an adhoc basis.

In the Trust survey, a total of 178 CP medicals were conducted in 2010. We identified 2 pathways of referrals. All siblings (100) of index cases referred as a family unit (37 families) had a CP medical (100%). 78 children were referred as individual index cases. 48/78 children referred by Social Services as individuals were identified to have siblings, 26/48 index cases who had siblings were identified as having CP concerns. 8/26 index cases were removed from their homes. There was no record (0%) of sibling medicals conducted in any of the 48 index cases with siblings including index cases with CP concerns.

Conclusion There is very little consensus on performing CP medicals on siblings of index cases in our region and local Trust. Siblings of index cases referred as individuals did not have a medical even when there were significant CP concerns. Following the 2 surveys, a CP sibling medical protocol to guide local decision making is being produced.