Child protection

G94 DOES CARDIOPULMONARY RESUSCITATION CAUSE RIB FRACTURES IN CHILDREN? A SYSTEMATIC REVIEW

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Aim: To determine whether cardiopulmonary resuscitation (CPR) causes rib fractures in children in the context of child protection.

Methods: An all language literature search of original articles, references, textbooks, and conference abstracts 1966–2004: ASSIA, Caredata, Medline, Child Data, CINAHL, Embase, PsychINFO, SIGLE, Social Science Citation Index, and TRIP databases. We included all studies of rib fracture and CPR in children <17 years and excluded review articles and expert opinion and studies where it was not possible to establish if rib fractures pre-dated resuscitation. We used two independent reviews (a third if disputed), standardised criteria for study definition, data extraction, and critical appraisal.

Results: Of the 392 studies reviewed, five were included: four cross sectional studies and one case series. These represent data on 599 children who had CPR. Three children (0.5%) sustained rib fractures as a result of resuscitation. All three children had fractures that were anterior (two mid-clavicular and one costo-chondral). We did not find any child in the literature that had a posterior rib fracture due to CPR. Medical and non-medical personnel performed resuscitation for variable length of time. The technique used to identify rib fractures varied between studies.

Conclusion: The vast majority of children (99.5%) who undergo CPR do not develop rib fractures. When they do occur they are anterior, in contrast to posterior rib fractures, which are found in abuse. Further prospective studies of children with chest *x* rays prior to CPR and delayed or oblique films post resuscitation would be valuable to further clarify this question.

G95 SHOULD INFANTS AGED <1 YEAR PRESENTING WITH A HEAD INJURY HAVE A ROUTINE SKULL *x* RAY?

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Aims: To evaluate the role of routine skull *x* ray in the assessment of infants with a head injury attending the accident and emergency (A&E) department at a district general hospital.

Methods: A policy of routine skull *x* ray in infant head injuries was introduced within our A&E department in November 2002. Subsequently aprospective audit was undertaken for a 12 month period. All infants wereseen by a paediatric middle grade doctor who documented the circumstances of the injury, evidence of any child protection concerns, the examination findings, and the outcome of skull *x* ray.

Results: 112 infants attended A&E with a head injury during the period of the audit: 96 (86%) had a skull *x* ray; 6 of the infants who had a skull *x* ray were found to have a skull fracture. 32 infants (29%) were estimated to have fallen >1 metre based on the history given by the caregivers; 80 infants were reported to have fallen <1 metre (this group included all 6 infants with a skull fracture, two of whom had reportedly fallen <30 cm). Loss of consciousness was reported in 2 infants, neither of whom had a skull fracture; 3 infants had a CT brain scan (no intracranial injuries were detected in these infants). All infants made a full recovery. Significant child protection concerns were identified in 4 of the 6 infants with a skull fracture, 2 of these had additional fractures on a subsequent skeletal survey.

Conclusions: The use of skull *x* ray in infant head injury resulted in the identification of 6 infants with skull fractures. In 4 of these, serious child protection concerns were identified. It was not possible to identify the infants with a fracture from the caregiver's history. The presence of external injuries and neurological signs did not discriminate sufficiently to allow selection of infants for skull *x* ray based on clinical parameters. Criteria for imaging based on reported height of fall were unhelpful in identifying infants who had sustained a skull fracture. We therefore believe that there is a role for routine skull *x* ray in infants aged <1 year who present with a head injury. In our study this led to the identification of non-accidental injury and child protection concerns that would not otherwise have been detected.

G96 PATTERNS OF GENITAL INJURY IN CHILDREN WITH SUSPECTED SEXUAL ABUSE: A 1 YEAR TERTIARY CENTRE EXPERIENCE

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Background: Sexual abuse presents a significant public health problem affecting 5–20% of all children. There are limited UK data addressing this issue. We aim to describe the victim, assailant, assault, evidentiary examination, and outcomes in children presenting with acute and chronic sexual abuse.

Methods: Data were collected prospectively over 12 months for all children presenting with suspected sexual abuse to the child protection team in a teaching hospital. This team provides an on-call service and examinations are conducted jointly by a forensic medical examiner and community paediatrician using video colposcope where appropriate.

Results: The mean age (SD) of the children examined (n = 117) was 11(5) years, of which 43% were prepubertal; 86% (n = 101) were females. Time before disclosure varied from under 24 hours to 5 years with 49 (41%) reporting within 72 hours. Postpubertal children were more likely to present within 72 hours compared with prepubertal children ($p<0.001$). The commonest mode of presentation was an allegation of abuse (64%) and other presentations included symptoms of vulovaginitis, sexualised behaviour, and changes in behavioural pattern. Six children reported anal abuse and seven reported oral intercourse. 14 (12%) children had special needs, 10 (8.5%) were under the care of the local authority, and 10 (9%) had previous child and adolescent mental health services involvement. The alleged perpetrator was previously known to the victim in 70% of cases and the abuse occurred within the child's own home in 32 (27%). Two of the perpetrators were known schedule 1 offenders. Weapons were used to threaten on four occasions. In girls who consented to examination (95), genital examination was normal in 43 (46%). The common abnormalities included posterior fourchette erythema, bruising or tear (24%); acute posterior hymenal tear (12%), notches, and attentution of hymen (8%); and erythema of the labia minora and periurethral region. In our cohort, the prepubertal girls had significantly less incidence of genital signs of injury compared with postpubertal girls ($p<0.05$). General bruising related to the abuse was noted in 31 (26.5%) and predominantly involved the head and neck region. Children who presented within 72 hours with a history of attempted or successful penile penetration were more likely to have abnormal genital findings. The results of criminal proceedings are awaited.

Conclusions: In our cohort, girls in the age group of 13–16 years were at the highest risk of acute assault. Vulnerable children formed a significant number of children being sexually abused. Early joint examination, as suggested by the guidance from the RCPCH, is important to document injuries but many victims may still not have signs of genital injuries.

G97 TORN LABIAL FRENUM—EVIDENCE OF CHILD ABUSE? A SYSTEMATIC REVIEW

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Aims: A torn labial frenum in young children has long been regarded as ''pathognomonic'' of child abuse. We aimed to investigate the evidence for this conclusion.

Methods: We performed an all language literature search of original articles, references, textbooks, and conference abstracts 1966–2004: Assia, Caredata, Medline, CINAHL, SIGLE, Embase, ISI Proceedings, Child data, Sciences Citation Index, and TRIP databases. We included all studies of intra-oral injury caused by abuse in children <17 years. Two independent reviews were conducted (a third if disputed); standardised criteria for study definition, data extraction, and critical appraisal were used.

Results: Of 142 studies reviewed, 15 were included. All studies were case series or studies. Fifteen studies addressed intra-oral injuries in abuse, only seven reporting torn labial frenum. There are no case control data in the literature to define the probability of abuse for a torn frenum. Approximately 22 abused children had torn frenum. The age was given for 20, all <5 years. Two thirds of these were fatally abused, all had associated injuries. Eighteen children with non-abusive torn frenum were referred to in one study but no details were given nor was the basis on which abuse was excluded defined. Other intra-oral injuries were recorded in up to 64 children. These included forced dental extraction, lacerations to mucosa and palate, bruising, dental fractures, and foreign body insertion in hypopharynx (safety pin embedded).

Conclusion: There is no controlled study in the literature to support the widely held view that torn labial frenum is diagnostic of abuse. Those children with abusive torn frenum in the literature have been severely injured, two thirds fatally. A case controlled study of torn labial frenum in young children is urgently required.

G98 RANDOMISED CONTROLLED TRIAL OF THE EFFECTIVENESS OF AN INTENSIVE HOME VISITING PROGRAMME

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Background: There is currently much interest in how best to meet the needs of children from families where social and environmental risk factors for poor health are high and there is a significant risk of abuse. These children have a high incidence of emotional and behavioural problems, school failure, and delinquency in childhood and adolescence, and of health and socioeconomic problems as adults. This paper summarises the findings of a study evaluating the effectiveness of a new intensive home visiting service for vulnerable families, which was established at 40 GP practices across two counties in the UK.

Methods: Participants were randomly allocated to an intervention (n = 68) or control group (n = 63). The intervention group received 18 months of structured, weekly visits from a health visitor trained in the Family Partnership Model, in addition to methods of promoting mother–infant interaction, beginning during the second trimester of pregnancy. The control group received the standard health visitor and social work support available. The evaluation used both quantitative and qualitative methods.

Results: The preliminary results show that at 12 months postnatal there were no significant differences between the two groups in any of the primary parent report measures. Two out of three independent assessments of outcome (Home Inventory; Bayley Scales) showed no significant difference between the two arms. The third independent measure (CARE Index) showed a significant difference in maternal sensitivity ($p>0.04$) and infant cooperativeness ($p<0.02$) after adjusting for number of risk factors at baseline. As regards the identification of abuse, preliminary findings indicate that while there were similar numbers of child protection concerns identified in both arms, there was an increase in the likelihood of infants in the intervention group being placed on a child protection register or being the subject of care proceedings and a significant difference in the proportion of children removed from the home (6% compared with 0%). The results of the economic analysis show that, to date, while the total costs of the intervention arm are greater than those of the control arm due to the extra home visits and the greater use of services such as family centres and home start, there was a significant reduction in expenditure by home visiting women on health visitor (baby) clinics, in addition to a non-significant reduction in expenditure on A&E for both mothers and infants, and alcohol and drug counselling services. The process data show that home visitors perceive the intervention to have made significant difference in terms of important aspects of maternal and child functioning including maternal mental health, domestic violence, and interactions with children. In-depth interviews with women who have received the service show a high level of satisfaction across the board, and provide moving testimony concerning the impact of this intervention on the lives of vulnerable women and children.

Conclusion: The implications of the above findings for policy and practice will be discussed.

G99 HOW GREAT IS THE RISK OF ABUSE IN INFANTS BORN TO DRUG USING MOTHERS?

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Background: A strong association is reported between maternal drug use and child abuse in North American studies but there are no systematic data describing the strength of this association in UK populations. This prospective, controlled, cohort study reports child protection process markers at 18 months and 5 years for children born to self proclaimed drug using mothers.

Methods: The study group consisted of all women referred to a hospital based antenatal clinic for pregnant drug users 1997–98. Controls were matched for social class and gestational age. At 18 months and 5 years the Bristol and surrounding area child protection registers were searched. Infants were coded as to whether they were the subject of an enquiry, case conference, registration, registration with subsequent deregistration, or taken into temporary or permanent care.

Results: There were 68 cases and 127 controls. Most (81%) were heroin and/or methadone users, half were using/had used intravenously. The overall risk of any child protection proceedings was significantly higher in cases than in controls at both 18 months (22 cases and 9 controls) and 5 years (26 cases and 18 controls), $p<0.001$, continuity corrected χ^2 test. Closer inspection of the 18 month data shows most of the excess risk is explained by the small group taken into care and the much larger group for whom the concerns were relatively shortlived as shown by their subsequent deregistration before 18 months. Closer inspection of the 5 year data shows that half of the cases represent progression through the system and half are new involvement. The extent of child protection involvement in cases is significantly greater than controls where 66% at 5 years were enquiry only.

Conclusions: Drug use does not necessarily lead to unacceptable standards of parenting but it is more likely than in non-drug using matched controls. We need to understand the risk factors in this group better in order to protect these children adequately.

G100 AUDIT OF CASE RECORDS TO DETERMINE COMPLIANCE WITH LAMING RECOMMENDATIONS

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Background: The report by Lord Laming into the tragic death of Victoria Climbie identified areas where services need to ensure that their child protection arrangements are appropriate, in place, and effective.

Aim: To assess whether we are meeting the relevant recommendations.

Methods: We identified all the children who had been admitted to the children's wards with child protection concerns over the past year from referrals to the child protection team. Case notes were assessed and pro formas based on the Laming recommendations were completed and analysed.

Results: A total of 24 patients were identified. Recommendation 12—identifying details were available in 100%. GP details were available for all, except one non-registered patient. Primary carer's name was available in 78%. Recommendation 65—most children were too young to be interviewed. Of the three who were eligible, two were spoken to directly. Recommendation 64, 66—a documented care/action plan was available for 72%. Recommendation 68—child protection concerns clearly documented in 78%. Recommendation 70—consultant/registrar authorised discharge in 72%. Recommendation 71—clearly documented discharge plan present in 61%. Recommendation 74—a full examination was performed in 89% of patients. The body diagram was only used in 11%. Recommendation 75—registrar/consultant sought permission for investigation and treatment in 88%. Recommendation 76—consultant responsible for patient's care was identified in 67%. Recommendation 77—24% of staff involved in child's care provided statements. Recommendation 80—face to face discussions were documented in 50%, telephone conversations documented in 72%, and record of person responsible for carrying out action plans in 66%.

Conclusions: We are concerned about the poor record keeping and inadequate documentation, particularly the history of concerns, care, action, and discharge plans, clear identification of responsible consultant, and documentation of injuries. Combined records are not in use in our trust (Recommendation 78), therefore in a number of cases there was important information that was not shared. The Laming recommendations are absolute. Anything less that than 100% in children identified as vulnerable is unacceptable.

G101 ARE FUTURE PAEDIATRICIANS TRAINED FOR HANDLING CHILD PROTECTION ISSUES?

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Background: Child protection is currently under intense scrutiny by the public, media, and decision makers. This has undermined the public trust in paediatricians and resulted in health carers feeling uncomfortable when dealing with such issues.

Aims: We aimed to assess the level of involvement, training, and supervision of paediatric trainees in child protection matters, their awareness of local and national guidelines, and gauge their confidence in dealing with it.

Methods: A structured questionnaire was circulated to all 70 paediatric specialist registrars working in one deanery.

Results: Return rate was 77% (54/70 questionnaires). The majority of respondents were in their third year of training. In the previous 6 months, 78% had dealt with a child protection case. At some point in their training, 41% had dealt with allegations of sexual abuse. However, only 76% had attended formal child protection courses with the average length of time spent in training being 3.2 days. About 73% had written medical reports; however, no consultant supervision was provided in 25% of instances. Only 20% had an opportunity to attend case conferences. A quarter wrote legal reports or attended courts. Court proceedings were stressful to 56%. About 2% had received complaints in respect of their involvement. Only two thirds were aware of local interagency procedures or national key documents on child protection. On a scale of 1 to 5, 29% reported low level of confidence (1–2) in dealing with child protection matters. Also, 62% of trainees would prefer not to be involved in child protection cases. Only 6% would choose to be the named doctor for child protection.

Conclusions: Child protection issues are complex and an integral part of paediatric practice. In spite of formal training, some trainees did not feel confident to deal with child protection. Considering the child protection workload and sensitive issues surrounding it, a structured training is needed for future paediatricians. This would improve the confidence of trainees and enable them to safeguard vulnerable children.