DEVELOPMENTAL AND BEHAVIOURAL ASSOCIATIONS OF BURNS AND SCALDS IN CHILDREN - A PROSPECTIVE POPULATION-BASED STUDY (135)

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Introduction: Using a large UK population-based cohort, we have investigated the correlations of paediatric burns and scalds with the child's developmental and behavioural characteristics measured prior to the injury.

Methods: Data on burns and scalds in children up to the age of 11yrs were collected by questionnaire from 11168 participants in the Avon Longitudinal Study of Parents and Children (ALSPAC) and linked to developmental and behavioural profiles of the children measured before the burn injury.

The background demographics and pre-morbid developmental and behavioural profile of the children were derived from questionnaires completed by the mother in pregnancy, at 6 weeks, 18 months and 3, 7 and 8 years. IQ was measured at 8 years in clinic using WISC III. Injury data were derived from questionnaires completed by the child’s primary carer at 6, 15 and 24 months, and 3½, 4½ 5½ 6½ 8½ and 11½ years of age. All burn and scald incidents reported in parental questionnaires from 6 months to 11 years were included.

Results:

Incidence:0-4yrs 52/1000/yr; 5-8yrs 28/1000/yr; 9-11 yrs 26/1000/yr

Severity:(% seeking medical attention): 0-4yrs 16%; 5-8yrs 10%; 9-11 yrs 6%.

Gender:Boys were more likely to sustain a burn or scald in the preschool period. There was no gender difference between 5 and 8yrs, but girls had more thermal injuries between 9 and 11 yrs.

Motor development:Children with the most advanced gross motor developmental scores at 6 months were more likely to sustain burns in the preschool period. Conversely, the slowest quartile for fine motor development reported at 18 months was associated with increased burns and scalds in the preschool period. Gross and fine motor scores measured at 42 months were not associated with burns risk in school aged children.

School aged children with parent reported coordination problems at 4.5yrs, and assessed developmental co-ordination disorder at 7 years of age, were more likely to sustain burns between 5-8yrs and 9-11yrs respectively.

There was no evidence that left handed children were more likely to sustain burn injury

Cognitive development:No associations were observed between overall developmental score at 18m and injuries in the pre-school period, or with IQ score at 8yr and burns in school aged children.
Emotional development: Frequent temper tantrums at 18m was a predictor of increased rates of burns at all ages up to 11yr. Presence of anxiety and depressive symptoms at age 7 were not associated with increased rates of burns at ages 9-11.

Behavioural profile: The Strengths and Difficulties Questionnaire completed by the parent at 42 months was predictive of subsequent burns and scalds in primary school: hyperactivity scores showed consistent associations with injury up to age 11, and conduct difficulties were associated between 5-8 years.

Models were created using logistic regression, and after adjustment for family and social factors, child factors significantly associated with burns in pre-school period were motor development at 18 and frequent temper tantrums at 18m. In school aged children, tantrums behaviour problems and co-ordination difficulties remained significant after adjustment.

Conclusions: Risk of burns and scalds is associated with motor development in young children, and co-ordination difficulties, emotional regulation, hyperactivity and conduct problems in primary school age. These developmental and behavioural aspects should be considered in designing burn prevention programmes and when assessing children presenting with a burn injury.