

**Results** 56.9% children were males and mean age was 7.4 years. Of the ten main differential diagnoses, burn and long bone fractures frequently caused severe pain (80.8% and 50.9% respectively). 152 (25%) children with pain did not receive analgesia (39% of children with mild pain, 22% moderate pain and 15% severe pain;  $P=0.0001$ ). For children with severe pain, 66.0% received simple analgesia ( $P=0.001$ ) and only 38.5% received opioids ( $P=0.0001$ ) with younger children (0–5 years old) receiving less intravenous diamorphine and more oral morphine than older children (13–18) (14% vs 52% and 46.0% vs 30.0% respectively; both  $P=0.0001$ ). None was given intranasal diamorphine.

**Conclusions** Children with pain were not adequately analgesed, especially those with severe pain and those that were younger. Children coming with conditions known to be severely painful (i.e. burn and long-bone fractures) should be considered for opioids regardless of their pain scores and opioid of choice is intranasal diamorphine, requiring no intravenous access with similar efficacy as the more common intravenous morphine.

### 1621 HEART RATES AND RESPIRATORY RATES ARE ASSOCIATED WITH MANCHESTER PAIN SCORES IN CHILDREN PRESENTED AT THE EMERGENCY DEPARTMENT

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**Background and Aims** Acute pain increases vital signs and is measured by the Manchester pain scale during triage. This multi-centre observational study aims to determine associations between respiratory rates or heart rates and Manchester pain scores and to derive age and pain appropriate centiles for children presenting at emergency departments (EDs).

**Methods** Triage children (< 16 years) presented at EDs in Rotterdam between 2006 and 2010, in The Hague between 2006 and 2007, and in London in 2010, were included. Pain scores were obtained by the Manchester pain scale (range 0–10). This pain scale combines a visual analogue scale, a verbal descriptor scale, and a pain behaviour tool. Univariate and multivariable regression analyses were performed. Secondly, pain and age appropriate heart rate and respiratory rate centile charts were created.

**Results** We included 45344 children. In multivariable analysis, the average heart rate of children with mild or moderate pain decreased significantly with 6.1 (95%CI5.2–6.9) and 5.0 (95%CI3.9–6.1) beats per minute respectively, while children with severe pain had increased heart rates (6.5.95%CI4.5–8.6) when compared with children without pain. Centile charts for children younger than twelve years showed increased heart rates for children with severe pain. This effect disappeared in older children. The association between respiratory rates and pain scores showed similar trends as heart rate centiles, but the change in respiratory rates was small.

**Conclusion** New derived centile charts for children are available to interpret heart rates and respiratory rates in relation to pain. In younger children, heart rates increased due to severe pain.

### 1622 THE EVALUATION OF ANXIETY AND PAIN RELATED TO DENTAL TREATMENT IN CHILDREN UNDER THE AGE OF FIVE YEARS (BRAZIL)

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**The Aim** of this study was to evaluate anxiety and pain related to dental treatment in children under the age of five years. This cross sectional study was carried out with 350 children of both sexes. Socioeconomic data, dental anxiety and dental pain experience, as well as the assessment of the child's oral health status, were obtained through a questionnaire answered by the child's parent or guardian. Dental anxiety was measured using the Dental Anxiety Question (DAQ). The prevalence of dental anxiety was 22.9% and that of dental pain was 6.8%. There was an association between these two variables ( $p<0.0001$ ). There was also an association between dental pain, age, family income and assessment of oral health status. The poorest rating of the child's oral health and the lowest family income were correlated with the highest percentages of a history of dental pain. Dental anxiety was related to a history of dental pain in children under the age of five years.

### 1623 PAIN AFTER CIRCUMCISION: COMPARISON OF CONVENTIONAL AND PLASTIC CLAMP CIRCUMCISIONS

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**Background and Aims** In the current study we compared the intensity of post-circumcision pain among the male children circumcised by plastic Ali Klamp and conventional dissection technique.

**Method** Study included 126 children with a mean age of  $9.2\pm 2.8$  years circumcised by plastic Alis klamp technique, and 114 children with a mean age of  $9.5\pm 2.4$  years circumcised by conventional dissection technique under local anesthesia. A visual pain scale chart was utilized to assess the intensity of post-circumcision pain.

**Results** The initial pain scores were similar among both group of males which initiated  $4.2\pm 1.4$  hours following circumcision. The mean pain scores at 8 (4.34 vs. 5.8;  $p<0.002$ ), 12 (3.12 vs. 5.02;  $p<0.001$ ), and 18 (2.4 vs. 4.01;  $p<0.001$ ) hours were significantly lower among the males circumcised by plastic clamp technique compared to those circumcised by conventional technique. Intensity of pain was similar in both groups after 24 hours following circumcisions.

**Conclusion** Circumcision performed by plastic Alis klamp technique in male children is associated with a lower intensity of pain compared to circumcisions performed by conventional dissection technique. We suggest the utilization of this technique as it provides a better post-circumcision period compared to conventional technique particularly in children who are afraid of circumcision as a matter of fact.

### 1624 THE COMPARISON OF THE EFFECTS OF MASSAGING AND ROCKING ON INFANTILE COLIC

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**Background and Aims** The aim of this study was to compare the effects of massaging and rocking on the treatment of infantile colic.

**Methods** This randomized clinical trial involved 100 infants < 13 weeks of age who were considered colic were randomly assigned to either infant massage ( $n=50$ ) or rocking groups ( $n=50$ ), in Arak, Iran, in 2010. In the massage group, trained individuals taught the infant massage technique to the parents and gave them a brochure. Daily interventions were recommended in both groups 3 times daily for one week. Parents recorded infant crying times, duration, and severity over a week. After one week, data were analyzed by SPSS and statistical significance tests ( $P<0.05$ ).