Results Operative incised abdominal wall displayed profound allo-
dynia which was reduced by ropivacaine with low dose ketamine
combination in the 4 hours following incision. Blood samples these
patients showed enhanced levels of 3 cytokines: IL-1β, IL-6, tumor
necrosis factor alpha (TNFα). Ropivacaine with low dose ketamine
administration reduced levels. First group lower cytokines levels
over second group (mean ± SD, IL-1β - 4.4 ± 2.2 vs. 14.2 ± 2.4 pg/mg
protein; IL-6 - 204.8 ± 80.0 vs. 441.2 ± 90.4 pg/mg protein; TNFα -
14.4 ± 4.6 vs. 58.8 ± 7.2 pg/mg) (p<0.001).

Conclusion Ropivacaine with low dose ketamine administration
reduces cytokine expression. These studies suggest that Ropiva-
caine with low dose ketamine combination may alter the inflamma-
tory reaction.

1618 IDENTIFICATION OF NOXIOUS EVENTS FOR NEWBORN INFANTS WITH A NEURAL NETWORK
doi:10.1136/archdischild-2012-302724.1618

Background Recognition of pain experienced by immature and/or
critically ill newborns in the Neonatal Intensive Care Unit remains a
challenge despite the use of objective scoring systems that
depend on physiological and behavioural parameters. We consider
there is a need to identify pain using only physiological data streams.

Methods Data were collected from three preterm male, gestational
age 27.25±0.95 weeks (mean±SD), birth weight 941.25±189.31 grams.
Heart rate (HR), mean arterial pressure (MAP), respiratory rate (RR),
blood oxygen saturation (SpO2) were considered for the NN Input Ve-
ctor. NN’s output were set to ‘1’ for noxious stimuli pattern (NSP)
define as: HR≥160 AND MAP≥55 AND RR>40 AND SpO2<90%. No-
fact events were captured in previous study2 and integrated with real-
time physiological data streams. In this study we correlated the
topic event identified by NN with the artifact nociceptive event.

Results Events ‘veteran access’ and ‘reintubation’ statistically coincide with the NSP defined in 100%. Event ‘routine care’ coincide
in 52.67% with NSP. HR≥160 was evident in 24.6% of the

Abstract 1618 Figure 1

Conclusion This study showed correlation of artifact nociceptive

event with the physiological data streams NN patterns verifying a
positive relation between nociceptive response and non-invasive
physiological response. NN developed previously proved to be an
accurate tool for deployment in a clinical decision support system.

References
2. 1st ACM International Health Informatics Symposium, 647–655.

1619 PAEDIATRIC PAINFUL SICKLE CELL CRISIS: A PROSPECTIVE AUDIT OF ANALGESIC PRACTISE IN A TERTIARY PAEDIATRIC EMERGENCY DEPARTMENT
doi:10.1136/archdischild-2012-302724.1619

Introduction Although children with painful sickle cell crises (PSCC) frequently present to the Emergency Department (ED),
the pain in sickle cell disease is often under-recognised, under-treated and treatment may be delayed. We aimed to evaluate pain assess-
ment and management in children presenting to the ED with PSCC.

Methods A 12-month prospective descriptive study of acute pain management of PSCC at an urban tertiary paediatric ED. Pain was
assessed by the triage nurse or physician using a validated age
appropriate pain scale (Faces, Legs, Activity, Cry, Consolability
(GLACC) Scale; Manchester Pain Ruler).

Results There were 96 presentations in 66 patients with PSCC (Table 1). Nineteen (19.7%) patients received no pre-hospital analgesia.

Abstract 1619 Table 1

<table>
<thead>
<tr>
<th></th>
<th>Entire Cohort (n=96)</th>
<th>Severe pain Cohort* (n=56)</th>
<th>Moderate Cohort* (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triage Pain Score</td>
<td>7/10 (IQR 5–8)</td>
<td>8/10 (IQR 7–10)</td>
<td></td>
</tr>
<tr>
<td>Pain Score at 60 minutes</td>
<td>5/10 (IQR 2.25–5)</td>
<td>7/10 (IQR 5–8)</td>
<td>45% 95%</td>
</tr>
<tr>
<td>Cases in line with PDA guidelines (%)</td>
<td></td>
<td>87 minutes</td>
<td></td>
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<tr>
<td>Median time for opioid breakthrough / analgesia</td>
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</tr>
</tbody>
</table>

*severe pain defined as ≥ 7/10 and moderate pain as 3–6 on age-appropriate pain scale

Conclusion PSCC pain is under-treated, under-monitored, and adequate treatment of pain is delayed in our ED. Patients with
severe pain appear at highest risk for treatment guideline violation.
This is predominantly related to lack of opiate administration.
An educational intervention, with/without the inclusion of an easily administered, fast-onset and short-acting opiate e.g.
intranasal fentanyl, may decrease the time from ED arrival to effective pain relief.

1620 EMERGENCY ANALGESIA ADMINISTRATION IN CHILDREN: RETROSPECTIVE ANALYSIS AND RECOMMENDATIONS
doi:10.1136/archdischild-2012-302724.1620

Introduction Emergency analgesia administration in children
is inadequate and guideline is insufficient. We aimed to analyse our
department’s paediatric pain management to inform and recom-
mand necessary alterations to current practice.

Methods 800 children (0–16 years old) presenting with painful
conditions to Queen Elizabeth Hospital Emergency Department
within a 40-month period (01/01/2006–28/02/2012) were randomly
identified from a prospective audit database and allocated into four
groups according to pain scores (no, mild, moderate and severe pain;
200 children in each group). Analgesia types and differential diagno-
ses were recorded.