Aims Imperial neonatal service has implemented delivery room (DR) cuddles along the strong culture of Family Integrated Care. Bonding is challenging for parents with a baby born extremely prematurely. Visual and physical contact in the delivery room as a first cuddle potentially can help the bonding process but so far there is limited evidence about the safety of this intervention. The aim our project is to study the feasibility and the safety of delivery room cuddles for babies born extremely preterm.

Methods Our aim in this observational study was to assess safety of the delivery room cuddles for babies born < 32 weeks’ gestation. As part of the stabilisation for babies born < 32 weeks, if certain safety criteria met during resuscitation, parents were offered a short 5-15-minute delivery room cuddle while covered in plastic bag and on respiratory support supervised by a consultant neonatologist. We collected data about the safety of the cuddles such as admission temperature, accidental extubations, changes in respiratory support, admission time to the unit, and availability of colostrum within 24 hours.

Results Between Oct 2018 and Feb 2021, 99 families experienced delivery room cuddles after stabilisation. Retrospective control group of 130 infants was selected from admissions between Jan 2017 and Dec 2018. GA age range: Cuddle group 22+5 to 31+6, Control group 23+1 to 31+5 weeks. Birthweight range: Cuddle group 430-2044g, Control 500-1800g. No accidental extubation or respiratory complications were noted in the DR cuddle group. There was no increased risk of hypothermia: 13/99 (13%) had admission temperature < 36.5°C in the DR cuddle group vs 13/130 (10%) in the control group. 95/99 (96%) neonates were admitted within 1 hour of life in the DR cuddle group and 128/130 (98%) in the control group. 59/99(60%) neonate received colostrum within 24 hours from the cuddle cohort.

Conclusion On this observational study we present a large cohort of preterm infants showing that delivery room cuddles in babies born < 32 weeks’ gestation are feasible and can be safely implemented as standard of care for stabilizing extremely preterm babies in the first hour of life.

Aims Historically it was thought that babies were incapable of experiencing pain.

- We now know this is not true.
- Every healthcare professional working in neonatal care has an ethical responsibility to manage neonatal pain.
- There is a wealth of information that reports poor short and long term neurodevelopmental outcomes from unmanaged neonatal pain.
- In addition, unmanaged neonatal pain has a profoundly negative impact on parental wellbeing
- The primary objective of the first phase of this project is to raise awareness about neonatal pain management by ensuring that health care professionals understand when a baby is in pain.

Method The subsequent phases of this QI project will be taking the appropriate measures to prevent or minimize neonatal pain.

Methods

- Knowledge and skills: A survey was sent to all members of staff to record their knowledge of behavioral cues, non-pharmacological strategies (i.e. skin to skin, non-nutritive sucking, breast feeding, use of breast milk or sucrose, etc.) and parental role in pain management.
- Practice: The QI focused on observing the implementation of non-pharmacological approaches to minimize pain during immunizations, lumbar punctures, blood tests, nasogastric tube insertion, cannulation and eye testing etc.
- A five-point rating scale was used about the knowledge of NICU healthcare workers on neurobehavioral cues and the impact of parental involvement during painful procedures, ranging from [strongly agree] to [strongly disagree], an audit that focused on the use of non-pharmacologic strategies in practice.

Results

- A total of 54 staff completed a survey (see figure 1)
  - 88% [strongly agreed] that neonates could experience pain.
  - 82% [strongly agreed] that even minor procedures could cause pain.
  - 75% [strongly agreed] that infants were able to communicate non-verbally.
  - 60% [strongly agreed] that non-pharmacological interventions were effective in managing neonatal pain (see figure 1).
  - 32% [strongly agreed] that skin to skin was an effective non-pharmacological strategy in contrast with 41% who [strongly agreed] that sucrose was more effective.
  - 64% [strongly agreed] that parents should be involved in infant pain management procedures.

Conclusion

- There is a gap between the knowledge and understanding of health professionals regarding neonatal pain perception and its management compared to what is happening in practice.
- The ongoing QI project is looking at the implementation of the Pain Assessment Tool (Stage II), and reduction in the number of painful procedures (Stage III).
PROCALCITONIN IS NOT VERY RELIABLE IN THE DIAGNOSIS OF NEONATAL SEPSIS

Aims To determine the usefulness of procalcitonin (PCT) as an early marker in the diagnosis of neonatal sepsis in a tertiary teaching hospital.

Methods A prospective case-control hospital-based study among 60 neonates with suspected sepsis admitted into the newborn unit and healthy 60 age and sex-matched controls. At presentation, samples for PCT test were collected along with samples for routine sepsis workup and blood smear for malaria parasite. Samples for PCT were pooled and analysed using quantitative ELISA test. Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were determined at a PCT level of 0.5 ng/ml. P value was at <0.05 with 95% confidence interval.

Results Nineteen (31.7%) of 60 had blood culture positive sepsis, 36 (60.0%) had blood culture negative sepsis and 5 (8.3%) had neonatal malaria. The commonest organism identified was Staphylococcus aureus. The median PCT levels in the subjects and controls were 0.98 ng/ml and 0.40 ng/ml respectively but 1.28 ng/ml in blood culture negative sepsis and 0.93 ng/ml in blood culture positive sepsis. Based on the receiver operating characteristics curve, PCT levels ≥0.5 ng/ml was suggestive of bacterial infection. Sensitivity, specificity, PPV, NPV and area under the curve at PCT level of 0.5 ng/ml were 68.4%, 29.3%, 30.0%, 66.7% and 0.51 respectively.

Conclusion PCT levels were higher in blood culture negative sepsis than blood culture positive sepsis though both were higher than healthy babies. Thus, PCT was insignificant as an acute phase reactant because of its low specificity and PPV.