



Process for Improving Under-Managed Pain in the Infant Population

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Introduction

Infant pain management is often misunderstood or ignored and can have effects on future patient outcomes.

- Earlier philosophies for addressing pain in infants concluded an infant's immature central nervous system incurred limited response to painful stimuli.
- Further investigation in the last 30 years has revealed the opposite. Evidence shows that infants feel similar pain when compared to adults.
- Increased pain perception and chronic pain in adulthood may result from poor pain management as an infant.
- With new information regarding the effectiveness of assessment tools and intervention protocols, it is our hope to implement these into practice at various hospitals throughout our region.

Clinical Implications

Education on nursing comfort measures:

- Swaddling in blankets, repositioning, tactile soothing with gentle touch, and decreasing environmental stimuli.
- Education provided through visual and written instructions
- Education on frequency of assessment tool and interventions.
- Assessment using tool at least once per shift.
 - For procedures: assess pre-procedure, post procedure, then hourly until stabilized.
 - Assessment tool utilized every 4 hours post procedure for 48 hours.

Recommended Protocol

Modified Pain Assessment Tool to be used for assessment of pain severity and determine interventions necessary to manage pain, (Level V).
Scale from 0-20.

1. A score of 5 or under indicates the need for nursing comfort measures, (Level III).
2. Scores between 6-10 indicate need for pharmacological interventions such as clonidine or other non-opioid analgesics, (Level III).
3. A score over 10 indicates the need for opioids such as morphine along with non-opioid analgesics and nursing comfort measures, (Level III).

* In addition to the above interventions, non-pharmacological measures such as swaddling and gentle touch for all potentially painful procedures.

Current Protocol

- No standardized pain assessment tool is utilized at various regional healthcare facilities we examined.
- Pain management interventions as follows:
 - lidocaine cream pre-procedure
 - pacifier coated in sugar water during procedure
 - Tylenol every 4 hours for 24 hours post procedure.

Grading of Evidence

A grading system was used that assigned levels to proposed interventions based on the strength of evidence that supported it. The levels of interventions used in this project were systematic review of correlational and observational studies (III) and systematic review of qualitative and physiologic studies (V). Levels are measured from strongest to weakest, I to VII, respectively.

Literature Review

Challenges in treatment of pain in infants include proper assessment of a combination of behavioral, physiological and contextual indicators of infant pain. Other barriers include educated judgements to recognize these cues (Stevens et al., 2016). Studies reveal that it would be beneficial to every health care facility caring for neonates to implement a pain-prevention program. The program should include pain assessment tool and management plan. The main goal is to deliver pharmacologic along with non-pharmacologic therapies to prevent and minimize pain associated with surgery and routine medical procedures (Watterberg et al., 2016).

TABLE A1. The Modified Pain Assessment Tool and Covers Scale

Parameters	0	1	2
The modified Pain Assessment Tool (PAT)			
Posture/tone	Relaxed Normal Some flexion	Extended Digits widespread Trunk rigid Limbs abducted Shoulders raised off bed	Flexed and/or tense Fists clenched Trunk guarded Limbs drawn to midline Head/shoulders resist posturing
Cry	No	Yes Consolable Can be settled	Yes When disturbed Does not settle after handling Loud Whimpering Whining
Sleep pattern	Relaxed	Easily woken	Agitated or withdrawn Wakes with startle Restless Squirming No clear sleep/wake pattern Eye aversion or "shut out"
Expression	Relaxed Normal	Frown Shallow furrows Eyes lightly closed	Grimace Deep furrows Eyes tightly closed Pupils dilated
Color	Pink, well perfused	Occasionally mottled or pale	Pale/dusky/flushed Palmar sweating
Respirations	Normal baseline rate	Tachypnea At rest	Apnea At rest/with handling
Heart rate	Normal baseline rate	Tachycardia At rest	Fluctuating Spontaneous/at rest
Oxygen saturation	Normal	Fleeting desaturation	Desaturation with/without handling
Blood pressure	Normal	Fluctuates with handling	Hypo-/hypertension at rest
Nurse perception	No pain perceived by me	I think the baby has pain only with handling	I think the baby is in pain

References

Aby, J., MD. (2018, February). BABY FAQ. Retrieved April 15, 2018, from <http://www.babyfaq.info/crying/swaddle.php>

Stevens, B., Yamada, J., Ohlsson, A., Haliburton, S., & Shorkey, A. (2016). Sucrose for analgesia in newborn infants undergoing painful procedures. Retrieved February 21, 2018, from <https://www.ncbi.nlm.nih.gov/pubmed/27420164>

Neonatal Pain Assessment. (2017, October). Retrieved April 15, 2018, from https://www.rch.org.au/rchcpg/hospital_clinical_guideline_index/Neonatal_Pain_Assessment/

Watterberg, K. L., Cummings, J. J., Benitz, W. E., Eichenwald, E. C., Poindexter, B. B., Stewart, D. L., & Tobias, J. D. (2016). Prevention and management of procedural pain in the neonate: an update. *Pediatrics*, 137(2).

