

Pain control in infants and young children

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The current issue of *Pain Research & Management* contains an authoritative review of the efficacy of specific nonpharmacological interventions for acute procedural pain in children up to three years of age (1) (pages 321-330), which is an abridged version of a more exhaustive review (2). These publications provide strong justification for health care professionals and parents, as well as others caring for these highly dependent children, to use nonpharmacological approaches to pain control on a continuing basis.

At a time when the prevalence of painful events in infants and young children remains high – and yet the rate of interventions remains low (3) – this very thorough abridged Cochrane review of specific nonpharmacological interventions is timely. Pillai Riddell et al have elected to focus on infants and young children because these populations are most vulnerable to exposure to painful procedures including the inevitable series of painful immunization injections. Excluded from this particular review are certain nonpharmacological intervention strategies, such as sweet taste and breastfeeding, because there are existing reviews covering these topics. Although there are other pending reviews on some of the topics covered, such as kangaroo care (4), at this point in time, the review is thorough. A summary statement of the results of the nonincluded interventions may have served to place those that were reviewed in context; however, these are readily available through the Cochrane Library. The search was exhaustive according to Cochrane protocol and, furthermore, strict criteria were used to include studies that were scientifically sound.

An interesting differentiation made by the authors was to distinguish efficacy of the interventions for reactivity and pain regulation. The authors selected 30 s as the cut-off point between reactivity and regulation. While this cut-off point may appear arbitrary, it was likely selected based on the reports themselves because many studies would report results only within 30 s. However, it would be interesting to know whether there was a theoretical justification for that cut-off point. Conceivably, examining time to recover following the procedure would be another reflection of regulation. Reporting the time to recover is not common, but should be adopted to further assess regulation.

As is common in Cochrane reviews, the authors separated the studies that compared the interventions with no treatment controls versus active treatment controls. There were surprisingly few studies with active control conditions or groups. Given what is known about the impact of pain on infants and young children (5-7), it is disappointing that studies with a no treatment control are still being conducted. This particular review clearly demonstrates that there is sufficient evidence to support specific nonpharmacological interventions, as well as the Cochrane reviews on other strategies, and that there is no longer an ethical rationale for conducting studies with no treatment control conditions (8).

For practicing clinicians who must conduct procedures that will inflict pain on infants and young children, there are several safe nonpharmacological interventions that can be used either alone or in combination with topical anesthetics that have been shown to be effective for some age groups (9). This review provides a rigorous, comprehensive summary of several of the strategies including those that are effective with specific age groups. Furthermore, clinicians can now have confidence in instructing parents and other adults in these strategies. This review, along with the other reviews referred to, will provide an evidence-based compendium from which clinicians can choose appropriate, inexpensive approaches to procedural pain management. Given the breath of their review and the evidence that has been accrued in this and similar Cochrane-based reviews, there is no reason why a young child or infant needs to experience untreated procedural pain.

REFERENCES

1. Pillai Riddell R, Racine N, Turcotte K, et al. Nonpharmacological management of procedural pain in infants and young children: An abridged Cochrane review. *Pain Res Manag* 2011;16:321-30.
2. Pillai Riddell RR, Racine NM, Turcotte K, et al. Nonpharmacological management of infant and young child procedural pain. *Cochrane Database Syst Rev* 2011;CD006275. DOI: 10.1002/14651858.CD006275.pub2.
3. Stevens BJ, Abbott LK, Yamada J, et al. Epidemiology and management of painful procedures in children in Canadian hospitals. *CMAJ* 2011;183:E403-10.
4. Johnston C, Campbell-Yeo M, Fernandes A, Inglis D, Streiner D, Zee R. Skin-to-skin care for procedural pain in neonates (Protocol). *Cochrane Database Syst Rev* 2010(3):CD008435. DOI: 008410.001002/14651858.CD14008435.
5. Grunau R. Early pain in preterm infants. A model of long-term effects. *Clin Perinatol* 2002;29:373-94.
6. Taddio A, Katz J. The effects of early pain experience in neonates on pain responses in infancy and childhood. *Paediatric Drugs* 2005;7:245-57.
7. Taddio A, Shah V, Atenafu E, Katz J. Influence of repeated painful procedures and sucrose analgesia on the development of hyperalgesia in newborn infants. *Pain* 2009;144:43-8.
8. Harrison D, Bueno M, Yamada J, Adams-Webber T, Stevens B. Analgesic effects of sweet-tasting solutions for infants: Current state of equipoise. *Pediatrics* 2010;126:894-902.
9. Taddio A, Soin HK, Schuh S, Koren G, Scolnik D. Liposomal lidocaine to improve procedural success rates and reduce procedural pain among children: A randomized controlled trial. *CMAJ* 2005;172:1691-5.

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