

Auriculotherapy: Alleviating Pain and Distress in Neonates in the Intensive Care Unit

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Dear Editor:

Neonates undergo a considerable amount of physical and psychologic distress in every neonatal intensive care unit (NICU). Often, these infants endure many painful procedures. Examples are endotracheal intubation, airway and oral suctioning, heel pricks, and venipunctures. In addition, there are conditions, such as neonatal abstinence syndrome, which require aggressive medical intervention, while others may need surgical procedures to rescue and sustain the neonates' fragile lives.

In a group of NICUs in France, infants may have up to 16 procedures per day of hospitalization.¹ More than 79% of these procedures have been carried out without analgesia. As a result of pain inflicted during the first 21 days of life, hypersensitivity to subsequent stress and painful procedures develops.²

Pain in the neonate has a negative impact on the infant's rapidly developing neuronal structures, affecting functional connectivity or dynamic interconnectivity of the small neurobiologic networks in the brain. Thinning of the frontal and parietal cortex has been described.³ Dysfunctions at the parietal cortex can result in somatization effects and behavioral changes.⁴ This may account for the high risk of behavioral and attention problems seen in children with normal intellectual function who were formerly critically ill infants.⁵

However, repeated utilization of analgesia and psychotropic medication in the NICU may also have major repercussions. Morphine used to mitigate pain causes cell apoptosis and impairs normal dendritic development, including dendritic length.⁶ Furthermore, the longer-term effect of morphine usage in the neonatal period may impair cognitive function at 5 years of age and older.⁷

The safety and efficacy of laser acupuncture for pain relief in neonates has been studied, and the current recommendation is that further research is necessary to determine if acupuncture can be used in conjunction with the standard care for pain in neonates.⁸

Neonatologist Ju Lee Oei, MBBS, FRACP, MD, with her team at the NICU of Royal Women's Hospital, in Randwick, Australia, plans to investigate the efficacy of auriculotherapy for reducing stress, pain, and analgesic medication dosing in neonates.

Ear magnets may be the modality of choice, as they have been effective for auriculotherapy in other settings without producing untoward effects. In addition, use of the physiologic phenomena, the vasculo-autonomic signal, may optimize the point location of the appropriate auricular sites with greater accuracy.⁹

It is time for neonatologists to explore other alternative modalities to minimize trauma from the pain and stress experienced by neonates in the NICU.

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