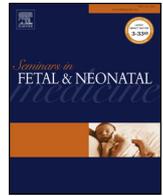




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Editorial

Editorial: Measuring and managing pain in the fetus and neonate - A new era and new challenges



In just over three decades, our understanding of the effects of pain in the fetus and newborn has grown immensely. We have progressed from believing that, because of their anatomical and physiological immaturity, neonates were incapable of experiencing pain and responding to painful stimuli [1], to a point where the importance of pain management in neonates is now universally acknowledged. However, while we seek to minimise painful interventions as much as possible, for the majority of babies receiving life-saving intensive care, potentially painful procedures are an unavoidable daily occurrence highlighting the importance of this aspect of care [2]. We have had, for some time in our repertoire, a number of tools for the assessment and management of acute pain [3], though fewer to assess persistent pain [4]. Still the subjective nature of pain makes it challenging, no tool appears perfect, and many important questions remain unanswered. Recent years have seen greater awareness of the importance of preventing and treating pain in babies, yet even in areas where concerted efforts have been made to try to optimise and standardise management, such as the use of pre-medication for endotracheal intubation, translation of evidence into practice has been limited [5]. In addition, advances in science and technology, whilst welcomed, mean that we have to constantly reconsider and anticipate the potential effects of these changes in management on the comfort of our tiny patients. Clinical practice with respect to identification, assessment and treatment of pain remains extremely varied between and within neonatal units worldwide [6,7]. The search therefore continues for optimum ways of recognising and managing pain in vulnerable and sick preterm and term born neonates.

In this issue, we bring together contributions from leading researchers in the field of neonatal pain, to provide up-to-date reviews of current research, practice and progress in this important area of neonatal care. In an account that will be important for both neonatal and obstetric practitioners, Bellieni first reminds us that the perception of pain begins in utero, and describes the very earliest responses to stimuli even before birth. Measuring pain in early life is challenging because of the lack of self-report in pre-verbal infants. There is a need for accurate means of pain assessment that are not at risk of subjective bias and methods with the potential to provide greater objectivity are currently being explored. Gurzul and colleagues discuss novel methods of measuring pain-associated brain activity using a variety of different modalities, Vento addresses the potential of biochemical markers of pain and stress, while Eriksson and Campbell-Yeo explore pain assessment in the clinical setting. With respect to the management of pain in the newborn infant, Pillai Riddell discusses how the use of drugs to treat pain might be minimised by employing non-pharmacological methods, while Van den Hoogen and colleagues consider how knowledge of neurodevelopmental biology can guide the pharmacological

management of pain, when this is warranted. There has been a sea change in recent years in the respiratory management of preterm babies, and evidence suggests that the use of less invasive methods of respiratory support is desirable [8]. Yet this brings with it new challenges, and demands a different approach to maintaining babies' comfort without compromising respiratory status, as considered by Tauzin and Durrmeyer. Walker reminds us that untreated or poorly managed pain in early life is not benign. She considers how early experiences of pain can influence later experiences and responses and importantly, suggests how, as neonatal clinicians, we can mitigate against these long-term adverse effects. Finally, Garten and Bühler focus on the important issue of palliative care in the neonatal unit and how we can ensure comfort and dignity for the most vulnerable babies under our care at the end of their lives.

We have come a long way in our learning, and in advocating for the rights of our smallest patients for the alleviation of pain in neonatal intensive care. Nevertheless, there is still a distance to go and we should not be complacent. This issue provides some suggestions for the direction of future travel, and certainly food for thought.

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Elaine M. Boyle

University of Leicester, Department of Health Sciences, George Davies Centre, University Road, Leicester LE1 7RH, UK
E-mail address: eb124@leicester.ac.uk.

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