

Editorial

Pediatric Pain Management and Sedation

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Received 31 October 2010; Accepted 31 October 2010

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Our ability to provide analgesia and sedation for children has evolved over the past several years. We have progressed from papoose boards to oral sucrose solutions to soothe babies during procedures. Many procedures that were traditionally performed in the operating room are being performed in remote settings: inpatient wards, satellite units, and emergency rooms. The delivery of pediatric sedation is no longer restricted to a limited group of specialists, but instead is delivered by specialists, and physicians as well as non-physicians, in the field of anesthesia, hospital medicine, pediatrics, intensive care medicine, dental medicine, emergency medicine, and radiology. Some sedatives and analgesics have been introduced to market within the past decade whereas others, still in use, have existed for over a century.

The ability of infants to recognize pain was initially underappreciated. Clinical and bench research, however, have sensitized us to the newborn's capacity to feel pain and has, subsequently, laid the groundwork for ongoing research into the pathophysiology of pain and clinical tools for proper assessment [1, 2]. Acute pain management options for children continue to evolve, encompassing all routes of delivery: oral, rectal, topical, subcutaneous, mucosal, intramuscular, parenteral and recently intranasal. Some of the recent introductions of this century include our appreciation of the analgesic and sedative benefits of oral sucrose in newborns and the use of alternative delivery routes, such as intranasal fentanyl for analgesia [3, 4]. There has also been continued interest comparing the benefits of nonsteroidal anti-inflammatory medications to narcotics [5]. Despite the advances in our knowledge and application of analgesics,

patient safety continues to be a concern, particularly as unexpected adverse events, a morphine overdose in breast milk of a mother taking codeine for example, continue to occur [6].

Analgesia and sedation practices are not uniform; guidelines, policies, and protocols differ among professional organizations, provider groups, countries, institutions and among providers within the same institution. The inability to reach a consensus on safe practice and appropriate guidelines threatens our ability to provide safe, consistent care and fuels debate and malcontent amongst and between some specialties.

The magnitude of human and financial cost of jeopardizing patient safety in sedation is large and adverse outcomes should be rare. The numerical value of rare should not be a percentage; for example, a 99.9% probability of having a given outcome or 0.1% (1 in 1000) probability of a serious adverse outcome as a result of sedation is not acceptable. An acceptable aim for pediatric sedation should be "six sigma" which will reduce adverse outcome to 3-4 errors per a million incidents [7].

Ensuring that the practice of pediatric analgesia and sedation follows the same rigorous safety monitoring at all times by all providers, and in any setting across the world is a common responsibility shared by healthcare providers caring for children.

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