

## Shaken baby syndrome and abusive head trauma are real problems

— Paul G. Fisher, MD

Despite advances preventing and treating many childhood diseases, abuse and neglect continue to be diagnoses that pediatricians confront all too commonly every day. Earlier this year, the final report from the federally established Commission to Eliminate Childhood Abuse and Neglect Fatalities (<http://eliminatechildabusefatalities.sites.usa.gov/files/2016/03/CECANF-final-report.pdf>) noted that maltreatment causes more than 1500 childhood deaths in the US each year. Nonaccidental head trauma is one mechanism of death.

In this volume of *The Journal*, Narang et al question whether the medical community accepts the diagnoses of shaken baby syndrome (SBS) and abusive head trauma (AHT) to explain findings commonly seen in abused children, such as retinal hemorrhages and subdural hematomas. At first, this research question seems odd, but as the authors point out, some news media, judicial cases, and even some physicians testifying in court as experts have questioned the acceptance and validity of SBS and AHT.

Narang et al compiled responses from 682 physicians most commonly involved in the evaluation of children in suspected cases of AHT at 10 leading US children's hospitals. Among these providers, 88%-93% stated that SBS and AHT, respectively, are valid diagnoses. Only a very tiny minority of pediatricians endorsed fringe diagnoses, such as vitamin D deficiency, vaccine exposure, dysphagic choking, or falls less than 3 feet, as highly likely or likely to result in subdural hematomas, retinal hemorrhages, coma, or death in children less than 3 years of age.

This study demonstrates clearly and convincingly that SBS and AHT are indeed "generally accepted" medical diagnoses across a broad spectrum of the physicians who care for very young victims of head trauma. Although clinical judgment is paramount in evaluating every child who presents with head trauma, physicians and the legal system are well served when they respect peer-reviewed evidence and the generally accepted opinions of their peers.

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## Gasping for air

— James F. Padbury, MD

In this volume of *The Journal*, Steinhorn et al report the results of a multicenter randomized placebo-controlled trial of the effects of the endothelium receptor antagonist bosentan in neonates with persistent pulmonary hypertension (PPHN) and incomplete responses to inhaled nitric oxide. The primary outcome was treatment failure, defined as the need for extracorporeal membrane oxygenation or initiation of an alternative pulmonary vasodilator. The trial also evaluated time to complete weaning from mechanical ventilation. There were no significant differences in any of these outcomes. The bosentan was well-tolerated and there were no notable adverse effects. This report highlights some of the important difficulties in conduct of clinical trials in critically-ill neonates with this enigmatic disorder. Enrollment was slow due to several factors. Thankfully, the incidence of moderate to severe PPHN may be decreasing due to improvements in obstetric care. The incidence of incomplete response to inhaled nitric oxide has fallen in recent years due to improvements in management of infants with PPHN. This has been accompanied by a decrease in rates of extracorporeal membrane oxygenation reported by the Extracorporeal Life Support Organization. The study mandated an early enrollment. Failure to recruit adequate patient numbers has been reported in other trials of neonates with PPHN evaluating the use of inhaled prostaglandins (*Trials* 2014;15:486). Thus, we are faced with some good news—improved outcomes for infants with PPHN due to multifactorial contributions. We are, nonetheless, still challenged by infants with incomplete responses to mechanical ventilatory support and pharmacologic therapy, the confounding effects of different etiologies and the difficulty in accumulating enough patients to address the relationship between the clinical phenotype and pharmacodynamic responses.

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