

The 5th International Road Safety and Pediatric Trauma Congress



Shefa Neuroscience Research Center, Tehran, Iran, 20-22 January, 2016

The Neuroscience Journal of Shefaye Khatam

Volume 3, No. 4, Suppl 3

Oral Presentation

In Hospital Management of Child with Road Trauma

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Published: 20 January, 2016

Abstract

Trauma is the most common cause of mortality and morbidity in pediatric population. Caring for the injured child requires special knowledge, precise management, and scrupulous attention to details. All clinicians who are responsible for the care of a pediatric trauma patient, including pediatricians, pediatric emergency room clinicians, and trauma surgeons, must be familiar with every tenet of modern trauma care. The special considerations, characteristics, and unique needs of injured children must also be recognized. The primary survey or initial phase of resuscitation should address life-threatening injuries that compromise oxygenation and circulation. Airway control is the first priority. Unlike adults, the cause of childhood cardiac arrest is an initial respiratory arrest. A child's airway is anatomically different from an adult's. All pediatric trauma patients must be assumed to have cervical spine injury until proven otherwise. Once a patent airway is established, carefully assess the child's breathing. If respiration is inadequate, provide ventilatory assistance. Infants and small children are primarily diaphragmatic breathers; their ribs lack the rigidity and configuration present in adults. As a result, any compromise of diaphragmatic excursion significantly limits the child's ability to ventilate. Direct injury to the diaphragm, disruption and herniation of intra-abdominal contents, or gastric distension (aerophagia) can severely compromise the infant or small child's ability to breathe. The mediastinum of a child is very mobile; therefore, mediastinal structures can shift into the contralateral hemithorax as a result of a simple pneumothorax, hemothorax, or tension pneumothorax. The clinician must recognize these emergencies and intervene as needed. Recognizing hypovolemic shock in pediatric trauma patients is essential to ensure a positive outcome. Tachycardia is usually the earliest measurable response to hypovolemia. In addition, mental status change, respiratory compromise, absence of peripheral pulses, delayed capillary refill, skin pallor, and hypothermia are all possible early signs of shock that must be immediately recognized. Children are known to have an amazing cardiovascular reserve, so the initial normal vital signs should not impart any sense of security with regard to the status of the child's circulating volume. Initial fluid resuscitation should consist of warm isotonic crystalloid solution (Ringer lactate or isotonic sodium chloride solution) at a bolus of 20 ml/kg. Children with evidence of hemorrhagic shock who fail to respond to fluid resuscitation should also receive blood (10 ml/kg) and be evaluated by a pediatric surgeon for possible operative intervention. Avoid accidental hypothermia during the initial phase of resuscitation. Hypothermia results in vasoconstriction, low-flow state, acidosis, and consumptive coagulopathy. Once the primary survey has been completed, address the issue of pain control. Manage pain on a case-by-case basis. Early surgical evaluation is important for high risk patients. As with adults, radiographic evaluation of the cervical spine, chest, and pelvis has become an integral part of assessment of injured children. Blunt trauma is responsible for most intra-abdominal injuries. Injuries of solid organs predominate, particularly injuries of the spleen, followed by the liver and kidney. However, the mortality rate for children from severe blunt trauma is higher than the rate from penetrating injuries because of concurrent CNS, chest, and skeletal injuries. Fortunately, nonoperative management has a 90% success rate and has become the standard of care. In children who are hemodynamically stable with possible thoracoabdominal injury, CT scan is the preferred imaging technique.

Keywords: Trauma, Pediatric, Scrupulous, Tenet, Hypovolemic Shock.

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