



# Current aspects of severe trauma in children

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Accidents are the main cause of death in children older than 1 year of life. Polytrauma management in children is a matter of ongoing debate and a guideline is actually developed under the guidance of the pediatric section of the German Society for Traumatology. Training systems like pediatric advanced life support (PALS) are introduced. Special aspects of care for severely injured (including polytraumatized) children is still in the scientific focus. This issue of the *European Journal of Trauma and Emergency Surgery* (EJTES) collects interesting aspects from different injured areas from head and cervical spine through abdominal cavity to skeleton and soft tissue.

The prevention of the secondary hit by hypotension and hypoxemia is important for the outcome in severe head trauma. Therefore, intubation on trauma side is often demanded. Emami et al. [1] analyze whether prehospital intubation influences the mortality in children with Glasgow Coma Scale < 9. They find a higher mortality than expected in the age group 1–6 years presuming that GSC score is not the only reliable criterion for intubation, but the total trauma burden also have to be kept in mind.

Cervical spine trauma is a rare entity in children and therefore comprehensive data are lacking. Copley et al. [2] review all steps of diagnostics and treatment of this seldom problem including SCIWORA and vascular injuries. They conclude that paucity of evidence has to be substituted by expert opinion what means that in such injuries specialists have to be involved in every case.

Blunt organ injuries in children are managed conservatively in growing amounts including not only liver and spleen, but just so pancreas and kidney. Ardley et al. [3] review the efficacy of non-operative management (NOM) and the use of hemodynamic stability as a guide to plan treatment strategy in 30 children over a 5-year period in

a major trauma center. A 20% splenectomy rate is much higher than in reference centers like Toronto, but even in grade V injuries NOM could be realized in some cases. Haemodynamic stability is a significant predictor for surgical intervention.

Fracture management is not in the foreground in the management algorithm for severely injured children. Damage control with external fixation is widely accepted in adults, but rarely evaluated in children. Horst and colleagues [4] mention that in every second child early definitive fracture care is possible even in similar injury severity. Conservative fracture care was chosen for 11.6% only, but external fixation plays a minor role in the very young age group and damage control surgery increases with age, injury severity and the number of concerned regions.

Severe soft tissue injuries including compartment syndromes are rare in childhood, but not impossible. If fasciotomy is necessary the technique of wound closure is still discussed. Bussell et al. [5] compare temporary skin replacement and vacuum-assisted closure in their patients. In temporary skin replacement the number of procedures, time to definitive wound closure and stay in hospital is shorter showing a clear advantage for one of the protocols.

Children survive more often than adults even following most severe trauma. Therefore in the initial management and all meanwhile steps rehabilitation has to be kept in mind. This includes “less important” areas because finally soft tissue problems or limitations of motion influence the subjective outcome. Some of the papers in this issue of EJTES focus on “central”, some on “peripheric” aspects. For the readers of EJTES a relevant mixture on important points of view for the optimal treatment of injured children is given and should find them interested in these topics.

## Compliance with ethical standards

**Conflict of interest** The author declare that there is no conflict of interest.

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