

Permissive hypotension in a head-injured multi-trauma patient: Controversies and contradictions

Sir,

The report by Kohli *et al.*, is indeed interesting.^[1] Currently, permissive hypotension remains controversial among trauma care professionals. In the last millennium, the prehospital care for polytrauma included two large-bore intravenous lines with fluids running wide open. In sharp contrast to this historic practice, the current trend is to limit fluid resuscitation to prevent coagulopathy, anemia, thrombocytopenia and electrolyte disturbances. Here we would like to recall controversies related to fluid therapy in trauma victims with or without traumatic brain injury (TBI), and stress on the need for clinical audit of cases managed and proper documentation. Recent data indicate that prehospital fluid resuscitation with crystalloids may have a survival advantage in those with arterial hypotension, in contrast to normotensive patients getting benefit from a fluid restrictive approach.^[2] Metaphorically, the tide of fluid resuscitation is ebbing, and many of our bleeding patients are managed drier than previously.

Human studies involving blunt trauma has failed to demonstrate any mortality benefit based on resuscitation strategies including permissive hypotension. In these situations, trauma physicians dealing with severely injured blunt trauma victims with TBI and active bleeding faces tremendous challenges with regard to fluids for resuscitation. It is observed that even single episode of hypotension in brain-injured patient is associated with a doubling of mortality.^[3] Furthermore, patients with

head injuries treated with hypotensive resuscitation developed progressive intracerebral swelling and increased intracranial pressure, as well as higher lactate/pyruvate ratios as a result of delayed restoration of cerebral blood flow. Hence, the Brain Trauma Foundation recommends avoidance of systolic blood pressure of <90 mmHg in TBI^[4] and the European Brain Injury Consortium and the Association of Anesthetists recommend much higher targets with mean arterial blood pressures of >90 mmHg.^[5]

To summarize, the use of hypotensive resuscitation in polytrauma victims has to be decided based on the status of the cases and associated TBI, and monitored meticulously as done in this case. Current trends of permissive hypotension may please be avoided if TBI is suspected, as maintenance of cerebral perfusion pressure is essential to limit secondary brain injury and further neuronal cells death. Until further research spells out the risks and benefits of permissive hypotension in blunt trauma with TBI, it should be practiced with caution by those involved in trauma care. Emergency physicians, therefore, have to initiate clinical audit of their cases as expected in the Clinical Establishment Act 2010 of India and look into their own data and come out with guidelines. The attitude of documentation has to be inculcated in medical education and training, as these records are subjected to research and legal purposes. Last but not the least, saving life is important, but adding quality is also equally important.

**Subramanian Senthilkumar,
Suresh S. David¹, Rishya Manikam²,
Ponniah Thirumalaikolundusubramanian³**

Department of Emergency and Critical Care, Sri Gokulam Hospitals and Research Institute, Salem, ³Department of Internal Medicine, Chennai Medical College Hospital and Research Center, Trichy, Tamil Nadu, ¹Department of Emergency Medicine, Pushpagiri Medical College Hospital, Tiruvalla, Kerala, India, ²Department of Emergency Medicine, University of Malaya, Kuala Lumpur, Malaysia

Address for correspondence: Dr. Subramanian Senthilkumar,
Department of Emergency and Critical Care Medicine, Sri Gokulam Hospital and Research Institute, Salem - 636 004, Tamil Nadu, India.
E-mail: maniansenthil@yahoo.co.in

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