

Mannitol vs. Hypertonic Saline for the Management of Elevated Intracranial Pressure in Traumatic Brain Injuries

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Abstract

Traumatic brain injuries (TBI) affect anyone who has sustained a physical blow or force to the head. Popular contact sports and summer activities can cause TBIs. Elevated intracranial pressure (ICP) can result from the swelling the brain develops after sustaining a TBI. Medications such as hypertonic saline (HTS) and mannitol can be administered to decrease ICP and preserve neural tissue. This research paper synthesizes primary literature on the use of both HTS and mannitol in the treatment of TBI. It was determined that the overall best choice for treating TBI patients with elevated ICP is HTS. The key factors were the administration of the drug, patient's metabolic stress response, analysis of ICP and cerebral perfusion pressure (CPP) as well as neurological outcomes. HTS was found to provide better benefits while decreasing ICP in TBI patients. Mannitol was determined to be a great second option as evidence suggests that it too can provide therapeutic benefits in lowering ICP. TBIs occur so often that understanding how medications help patients recover is important. This analysis can provide some insight for healthcare providers who may want additional understanding of these two medications. Having a deeper understanding of ICP, CPP and the neurological outcomes in TBI patients should be a top priority to help patients return to their baseline neurological status.