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Predisposing factors for serum sodium disturbance in patients with severe traumatic brain injury (SBI)

Saeid ABRISHAMKAR¹, Mohammadreza SAFAVI², Pouria TAVAKOLI¹, Daruosh MORADI², Azim HONARMAND²

¹Department of Neurosurgery and Intensive Care unit, Isfahan University of Medical Sciences, Isfahan - IRAN

²Department of Anesthesiology and Intensive Care Unit, Isfahan University of Medical Sciences, Isfahan - IRAN

 [Keywords](#)
 [Authors](#)



medsci@tubitak.gov.tr

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Abstract: Disturbances in the plasma sodium level in patients with severe brain injury (SBI) is not a rare phenomenon and may cause adverse effects on prognosis and treatment outcomes. The knowledge of the prevalence of risk factors helps in early detection and good management of the serum sodium level disturbance. **Materials and methods:** This is a prospective clinical trial double blind study. The target population included patients with SBI who had disturbances in their plasma sodium level and were admitted at the ICU of Kashani Hospital, Isfahan, Iran, between January and October 2006. The patients with renal insufficiency, diuretic therapy, massive transfusion, brain death, and spinal cord injury were excluded. Gender, age, the prevalence of hypo- and hypernatremia, having tracheal tube or tracheostomy, requiring mechanical ventilation support, craniotomy, type of intracranial pathology, positive history of cardiopulmonary disease, the mean time after which the disturbance occurs, and the mean time needed for the recovery from the disturbance were studied. **Results:** The prevalence of hypo- and hypernatremia were 60% and 40%, respectively. Most of the patients were 21-50-year-old males with craniotomy. The mean time after which the disturbance occurs was 23 days after head trauma and the mean time needed for the recovery from sodium level disturbances was 11.5 days. **Conclusion:** Hypo- and hypernatremia are common complications of intracranial lesions. Early detection of serum sodium level disturbance is important in these patients and appropriate treatment may actually improve prognosis.

Key words: Hyponatremia, hypernatremia, severe brain injury, intensive care unit

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