

The prevalence of sodium abnormalities in moderate to severe head injury patients at a Level I Trauma Centre in Durban South Africa

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Introduction

The prevalence of sodium abnormalities in the moderate to severe traumatic brain injury patient (TBI) patient is unknown in our patient population. It is important to ascertain the underlying cause to direct appropriate management.

The onset, duration, peak and correlation with CT scan findings and patient outcome will help in the management of these patients.

The aim of the study is to find the prevalence of sodium abnormalities in the moderate to severe TBI patient as well as the most common underlying causes. A further aim is to investigate if these patients with sodium abnormalities are associated with a common CT scan finding on admission.

Methods

A retrospective descriptive chart review of consecutive patients with moderate to severe TBI admitted to the Level I regional trauma unit at the Inkosi Albert Luthuli Central Hospital, Durban from January 2013 to June 2015 was performed. The sample size was determined using the formula (Daniel, 1999) for both hypernatremia and hyponatremia. The larger sample size was then selected. Associations between factors of interest were assessed using a Pearson chi-square test. If any cell in the cross-tabulation had an expected frequency of 5 or less, the Fisher's exact test was used instead. A Kruskal-Wallis test was used to determine if a difference between the cases exists in terms of onset, peak and duration of sodium abnormality. A p-value of less than 0.05 was considered statistically significant. The data was analysed for sodium levels, underlying cause of sodium abnormality, CT findings on admission and patient outcome as well as the peak, onset and duration of sodium abnormality.

Results

Will be discussed at the congress in more detail.

Hypernatremia 35%; Hyponatremia 33%; Normal sodium 32%.

Diabetes insipidus:4%; SIADH 6%; Cerebral salt wasting 2%

Conclusions

Sodium abnormalities are common in our critical care setting and a protocol should be established to screen patients so that diagnosis may be early and treatment may begin as soon as possible.

Learning Objectives

Prevalence of sodium abnormalities in our unit

Relevance of sodium on patient outcome at discharge

Relationship if present between CT findings and sodium abnormalities

References

Literature review references:

1. Wellingson Silva et al. 2011. Serum sodium disorders in patients with traumatic brain injury. Therapeutics and clinical risk management. 7: 345-349
2. Saeid abrishamkar et al. 2010. Predisposing factors for serum sodium disturbance in patients with severe traumatic brain injury. Turk J Med Sci.40(6): 851-855
3. Kate Bradshaw. 2008. Disorders of sodium balance after brain injury. Continuing education in anaesthesia, Critical Care and Pain. 8(4):129 - 133
4. Usha S Adiga. 2012. Electrolyte derangement in traumatic head injury patients. Basic Research Journal of Medicine and Clinical Sciences. 1(2) 15 -18
5. Cynthia A John. 2012. Central neurogenic diabetes insipidus, Syndrome of Inappropriate Secretion of Antidiuretic Hormone, and Cerebral Salt-Wasting Syndrome in Traumatic Brain Injury. American association of critical care. 32(2) 1-8

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