EVALUATION OF HYPONATREMIC PATIENTS AND THE SHORT-TERM EFFECTS OF TOLVAPTAN IN RESISTANT CASES

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- Hyponatremia is the most common electrolyte abnormality in patients who are admitted to the hospital. And hyponatremia is not a primary diagnosis; it is commonly associated with the syndrome of inappropriate antidiuretic hormone (SIADH), excessive hydration, nephritic syndrome, cirrhosis, heart failure, and the use of certain drugs. In this study, we researched the causes, clinical manifestations, and treatment modalities of hyponatremic patients who were hospitalized with a serum sodium level ≤ 125 meq/L. Additionally, we evaluated the efficacy of tolvaptan (which is from the group of antidiuretic hormone receptor antagonists, also called vaptans) in hyponatremic cases that were resistant to conventional treatments. In recent years, tolvaptan was approved as the first oral agent for use by patients with hypervolemic and euvolemic hyponatremia, including those with heart failure, cirrhosis, and SIADH. However, its efficacy in normalizing serum sodium concentrations in a wide range of those illnesses in the short or long term has not been clearly shown.
- Using our hospital's electronic data recording system, we retrospectively identified the patients who had been hospitalized between January 2013 and June 2014 with a diagnosis of hyponatremia (serum sodium≤ 125 meq/L). The study included 72 men and 78 women, for a total of 150 patients (68.7 ± 12.8 years). The mean serum sodium level of the patients at the time of hospitalization was 117 ± 5.3 meq/L. In the first evaluation of patients by physical examination, 57% were found to be normovolemic, 36% were hypervolemic, and 7% were hypovolemic. The most common clinical manifestations were: nausea and vomiting (38.7%), a wide variety of neurologic disorders (32%), and dyspnea (20.7 %). The causes of hyponatremia were: medications/diuretics (thiazides first) (30.7%), SIADH (28.7%), congestive heart failure (16%), acute kidney failure (12.7%), chronic renal failure (5.3%), cirrhosis (4.6%), and adrenal gland insufficiency (2%). The number of patients who were dialysed for the purpose of ultrafiltration was 7 (9.3%). Tolvaptan was given to 11 patients (7.3 %) because of their resistance to fluid restriction and conventional treatment (congestive heart failure 72.7 %, SIADH 27.3 %). There was a significant increase in serum sodium 24 hours after the first dose of tolvaptan (12 ± 2 meq/L). By the first and third days of treatment, the serum sodium had been corrected in 72.7% of the tolvaptan group. Patients' urine output increased by 1.5-5 L/day with tolvaptan. The tolvaptan treatment was given orally at 15 mg or 30 mg once a day, for only 3 days, at which time it was discontinued. Increased thirst and dry mouth were the most common problems noted with the tolvaptan treatment, but were not severe enough for patients to stop therapy.
- Determination of the volume status of the patients for the management of hyponatremia is essential because a significant proportion of patients may be euvolemic/ hypervolemic and that requires individualization of the treatment. Depending on the reason, most hyponatremia can be corrected with the discontinuation of drugs such as diuretics, or with fluid restriction and/or ultrafiltration techniques. However, some patients who are resistant to conventional treatments may respond to further treatments, such as tolvaptan. Tolvaptan may be promising in treating patients with resistant hyponatremia and it may be helpful in reducing the length of hospital stay with a short-term response to treatment in hospitalized patients. In the coming years, the use of tolvaptan may become a better option before trying other methods.

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