CEREBRAL SALT WASTING SYNDROME IN A PATIENT WITH PRIMARY CNS LYMPHOMA

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Background: In patients with severe central nervous system (CNS) diseases, life-threatening hyponatremia results from two main causes: the syndromes of inappropriate secretion of antidiuretic hormone (SIADH) and cerebral salt wasting (CSW). Clinical manifestations of the two conditions may be similar but their pathogeneses are fundamentally diverse. Distinguishing SIADH from CSW is based on the differential diagnoses of dilutional hyponatremia due to an excessive amount of water in the body (SIADH) and depletional hyponatremia caused by extensive natriuresis (CSW).

Methods and Results: We report the case of a 48-year-old, previously healthy male with a diffuse large B-cell lymphoma affecting the area of the basal ganglia and the right part of the thalamus and oppressing the third brain ventricle. After admission to the Department of Hemato-oncology, the patient was soporous and laboratory tests revealed severe serum hyponatremia, hypochloremia, hypoosmolality and marked polyuria with normal serum levels of urea, creatinine, glucose and calcium. Urinalysis showed high specific gravity of the urine and extreme wasting of sodium, chloride and potassium ions. Overall fluid balance was negative. After the first chemotherapy cycle, the CT scan confirmed regression of the tumour site. This was accompanied by patient’s improved cognition as well as decreased polyuria and urine electrolyte excretion. Eventually, it was concluded that the diagnosis was cerebral salt wasting syndrome.

Conclusion: We noted a so far unpublished case of a 48-year-old male with the diagnosis of primary CNS lymphoma (DLBCL) affecting deep structures of the brain and associated with CSW.
120–240 mmol/day), Cl⁻ (1215 mmol/day, normal 174–260 mmol/day) and K⁺ (99 mmol/day, normal 35–80 mmol/day) ions. Plasma renin values were low (<0.1, normal range 0.26-2.41 pmol/l) but aldosterone levels were within the normal range. Overall fluid balance was negative. The values of brain natriuretic peptide (NT-proBNP) were increased (631 µg/l, normal 1-93 µg/l), with no apparent previous history of cardiac disease. The patient was intensively hydrated in an effort to achieve balanced volumes and ions. Chemotherapy was initiated with high-dose methotrexate according to DeAngelis protocol.

After the first chemotherapy cycle, the CT scan confirmed regression of the tumour site to about one third of its original size. This was also accompanied by patient’s improved cognition (Glasgow coma scale 14) as well as decreased polyuria and urine electrolyte excretion. Eventually, it was concluded that the diagnosis was cerebral salt wasting syndrome.

In patients with severe CNS disorders, disturbances of sodium metabolism are frequent. Distinction made between SIADH and CSW is of crucial importance for selecting adequate treatment strategy. The association between lymphomas involving deep structures of the brain and CSW that has not been described to date. The prevalence of the syndrome in hematological patients may be higher than commonly believed. Thus, it is necessary to investigate the causes of hyponatremia in patients with CNS lymphomas since early diagnosis and adjustment of the internal environment are a condition for subsequent intensive chemotherapy.

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**REFERENCES**