ANSWERING REVIEWERS

April 7, 2013

Dear Editor,

Please find enclosed the edited manuscript in Word format (file name: 2742-review.doc).

Title: Desmopression is an Effective Adjunct Treatment for Reversing Excessive Hyponatremia Overcorrection.

A case report and review of the literature

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Name of Journal: *World Journal of Clinical Cases*

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The manuscript has been improved according to the suggestions of reviewers:
1 Format has been updated

2 Revision has been made according to the suggestions of the reviewer:

1- How hypokalemia was treated in ED and if there were ECG alterations?

EKG findings included nonspecific ST-T abnormalities and prolonged QT interval (616 ms). The patient was placed on continuous telemetry. No arrhythmias were observed.
During the initial care in the Emergency Department (ED), the patient received 40 mEq of potassium chloride in the first liter of normal saline. After ICU transfer commenced, he received 80 mEq of potassium chloride in 1 liter normal saline at 250 ml/hour rate. Two hours later we noticed that sodium overcorrection had taken place and the infusion was immediately discontinued. Subsequently, under the direction of renal consult service, we replaced the calculated free water deficit with 5% dextrose without potassium, since rapid potassium correction can increase risk of osmotic demyelination syndrome.

2- The volume of dextrose administrated and how the authors evaluated the correction rate of hyponatremia (by a specific formula?)

The patient's serum sodium concentration rapidly rose from 107 mM/L to 126 mM/L within 12 hours, instead of the recommended 10% correction over 24 hours. The patient maintained a sodium balance of 107 mM/L for several days, therefore rapid correction to 126 mM/L was effectively making the patient "hypernatremic". We set the goal to re-lower the patient's serum sodium concentration to 117 mM/L and we calculated the amount of free water needed to achieve this goal. We used water deficit calculation formula {water deficit = (total body water)*(1 - (measured Na/140))} and modified this formula as {(total body water)*(1 - (126/117)) to calculate the amount of free water needed.

3- Finally, I'd like to notice that chlorpromazine and thorazine are the same drug

We appreciated the astuteness of our reviewer and we corrected it in the revised version of the manuscript..

4- Discussion I think that this section lacks of a complete discussion on the pathogenetic mechanisms underlying the clinical picture. In fact, the authors focused their attention on osmotic demyelination syndrome and its prevention, but it could be equally useful to discuss the causes of hyponatremia in this patient, which, in turn, may explain the subsequent clinical evolution. In particular, it is important to underline that at admission the patient presented a clinical picture suggestive of SIAD (i.e. inappropriate anti-diuresis syndrome), which, in the author hypothesis, should have been triggered by vomiting, a known cause of SIAD (see also Ellison DH, N Engl J Med. 2007 May 17;356(20):2064-72. Esposito P, Nephron Clin Pract. 2011;119(1):c62-73). As SIAD seems a possible diagnosis of the initial clinical presentation, the following evolution is suggestive of central diabetes insipidus, a disorder caused by suppression in ADH secretion. This eventuality was further proved by the quickly effect of desmopressin, which, indeed is a part of the therapy of diabetes insipidus. Therefore, the authors should take into consideration the role of ADH as a main pathogenic mechanism. I think that such discussion could make the paper more complete.

Thank you for the valuable comments. Indeed, many, but not all features of this patient were identical to syndrome of inappropriate antidiuresis (SIAD). We updated our discussion to better describe the details of our case, including the fact that once nausea was resolved, the patient did not appear to have alternative stimuli to maintain ADH secretion and he was diuresing the accumulated free water rapidly.

On the other hand, we did not think that our patient had central diabetes insipidus. In the end of in-patient stay, the patient was still mildly hyponatremic, but no longer polyuric, even without desmopressin (DDAVP) administration. We suspect that, if left untreated, the patient's serum sodium levels would have stabilized around 140 mM/L, once all the excess water left his body. However, such spontaneous correction would have been life-threatening.

We also further expanded our literature with the suggested papers.

3 References and typesetting were corrected

Thank you again for publishing our manuscript in the *World Journal of Clinical Cases*

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