Reviewer's report

Title: Osmotic demyelination syndrome associated with isotonic saline solution infusion for the correction of severe hyponatraemia in hyperemesis gravidarum

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Reviewer: Isabelle Runkle de la Vega

Reviewer's report:

The article has serious deficiencies in its initial focus. ODS following overcorrection of hyponatremia with isotonic saline is not infrequent at all – it is common, particularly in patients at high risk for ODS, such as those who present hypokalemia from the start. Some of the most rapid elevations in serum sodium occur precisely in hypovolemic receiving isotonic saline, (as in this case) and the use of DDAVP to brake the rise is often indicated. The maximum 24-hour increase of Serum sodium that was correct in this patient was 8 mmol, and max of 16 in 48 hours, due to her high risk for development of ODS, given that hypokalemia is one of the most important risk factors for SDO. The authors did not comply with the Verbalis et al guidelines of 2007, and seem to remain unaware of the fact that the risk resides in SNa elevation, NOT in how this rise was reached. ODS has been described to develop following rapid correction of hypokalemia without iv NACL, since increased K levels in serum are accompanied by an increase in SNa. From the start, the patient was high-risk, and the use of DDAVP thought of from the beginning.

This article is a much too frequent example of malpractice. Not only should the patient have received DDAVP on day 1, and held at a 8 mmol max elevation of SNa the first 24 hours. In case of overcorrection, her serum sodium levels should have been relowered immediately with dextrose AND DDAVP.

Therefore, if the article’s focus is not changed to highlight the errors, as opposed to erroneously considering the situation of overcorrection with isotonic saline exceptional, I do not believe that it should be published. We have seen many patients who have developed ODS after 10 mmol rises in 24 hours induced by isotonic saline, when hypokalemia was present.

However, if this initial focus is changed, given that we learn much in Medicine from errors, it could be an interesting contribution to the literature, since it highlights the dangers from blindly giving isotonic saline to patients with severe hypovolemic hyponatremia, as well as the increase rise seen when Hypokalemia is corrected, together with the increased risk of ODS when hypokalemia is present from the start.

ODS HAS been reverted in several cases with reinduction of hyponatremia.

The English/typos should be corrected.