Reviewer's report

Title: Dialysis disequilibrium syndrome induced by neoplastic meningitis in a patient receiving maintenance hemodialysis

Version: 1 Date: 13 October 2013

Reviewer: Santo Morabito

Reviewer's report:

General comments

The care report submitted by the authors is interesting and well written. Indeed, it is not uncommon to dialyze neoplastic patients in which the condition described in the case report (neoplastic meningitis) could be unsuspected or underdiagnosed, also in the presence of intradialytic neurological manifestations suggestive for dialysis disequilibrium syndrome (DDS). In this case report, the presence of neoplastic meningitis is documented by the presence of poorly differentiated adenocarcinoma cells in cerebrospinal fluid and confirmed by postmortem pathological examinations showing cancer cells covering the surface of the brain and spinal cord.

Minor Essential Revisions

Discussion: Page 11, lines 14 to 16:

The sentence: “However, magnetic resonance imaging with gadolinium enhancement is no longer applicable for hemodialysis patients because hemodialysis is a significant risk factor for nephrogenic systemic fibrosis [14, 15]” is a correct recommendation for patients on regular hemodialysis. Indeed, it is well known that NSF is a rare but extremely severe complication mainly described in patients with ESRD. However, in my opinion, this issue is worthy to be more deeply discussed. Indeed, considering the short life expectancy of patients with metastatic cancer and considering that new generation gadolinium contrast media are probably at much lower risk for nephrogenic systemic fibrosis, this part of the discussion should be enriched by speculating on the basis of recent guidelines, which recommend caution but at the same time non completely exclude the use of contrast enhanced MRI in patients with ESRD. In this regard, some citations could be cited in the discussion and added to the references.

For example, the recent guidelines of the Contrast Media Safety Committee (CMSC) of the European Society of Urogenital Radiology (ESUR) on nephrogenic systemic fibrosis and gadolinium-based contrast media state as follows: “Contrast agents with intermediate risk of NSF (Gadobenate dimeglumine, Gadofosvest trisodium, Gadoxetate disodium) and contrast agents with lowest risk of NSF (Gadobutrol, Gadoterate meglumine and Gadoteridol):
(a) Should be used with caution in patients with CKD4 and 5 (GFR less than 30 ml/min/1.73 m2) including patients on dialysis, with at least 7 days between 2 injections. Level of evidence C, Class of recommendation 2B.” (Thomsen HS et al. Nephrogenic systemic fibrosis and gadolinium-based contrast media: updated ESUR Contrast Medium Safety Committee guidelines. Eur Radiol. 2013; 23(2):307-18)

Finally, although not demonstrated, the potential benefit of prompt removal of gadolinium with dialysis could be shortly discussed (Rodby RA. Dialytic therapies to prevent NSF following gadolinium exposure in high-risk patients. Semin Dial. 2008 Mar-Apr;21(2):145-9).

Discretionary Revisions

In some sentences English could be improved (page 6, lines 15 to 16; page 10, lines 1 to 2).

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.