Reviewer’s report

Title: Impact of diuretic therapy-associated electrolyte disorders present on admission to the emergency department: a cross-sectional analysis

Version: 1 Date: 17 August 2012

Reviewer: Nicola Di Daniele

Reviewer’s report:

In this paper Linder and Coworkers aimed to investigate the associations between diuretic therapy, the prevalence of electrolyte disorders and the impact of electrolyte disorders on admission in Emergency and on patient outcome.

The question posed by the Authors is well defined. The methods are appropriate and well described, and details provided are sufficient to replicate the work. Data are well controlled. The manuscript adheres to the relevant standards for reporting and data deposition. Discussion and conclusions are well balanced but only partially supported by data. Title and abstract accurately convey what has been found. Finally, writing is acceptable.

Minor Essential Revisions
1. Abstract, line 4: “...on admission and patient outcome”.
3. Baseline laboratory values other than sodium (100%) and potassium (99%) are reported for only a small percentage of the over 22,000 patients included into the study.

Major Compulsory Revisions
1. Serum creatinine was dosed in 17,813 (80%) out of the over 22,000 patients investigated. As serum creatinine is one of the covariates in multivariate analysis only those patients should be included into the study.
2. Glomerular filtration rate obtained by the MDRD or the CKD-EPI equation should replace crude serum creatinine in the multivariate analysis.
3. The degree of the electrolytic disturbances should be considered in the data analysis, at least in terms of mild/moderate/severe dysionemia. A linear regression model with “quartile” grouping may be used.
4. Together with age, gender and GFR, multivariate analysis of outcomes should consider also the main comorbidities requiring specific diuretic therapy, such as hypertension, nephrotic syndrome, liver cyrosis and cardiac failure.

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.
Declaration of competing interests:

I declare that I have no competing interests