Reviewer's report

Title: A Population-based study on the Association between Acute Renal Failure (ARF) and the Duration of Polypharmacy

Version: 3 Date: 16 May 2012

Reviewer: Alessandro Nobili

Reviewer's report:

This manuscript deals with an interesting and poorly analyzed topic in the field of drug utilization: the correlation between duration of polypharmacy and acute renal failure, but it has some important weaknesses. Furthermore, the manuscript has many grammatical and language errors which make it difficult to read and to correctly understand the meaningful of many parts the text. Therefore, all the manuscript needs a substantial revision by a native English speaking individual.

Major compulsory revisions:
1. The aim of the study is not explicitly defined nowhere in the text.
2. No specific analysis evaluated whether some classes of drugs may influence the correlation between ARF and polypharmacy.
3. The duration of polypharmacy was defined as the number of days that patients took more than five prescription medications on a single day, then it was divided in four categories: <30 days, 31-90 days, 91-180 days, and >181 days. Was the exposure to the drugs during these periods “continuous” or was it calculated as the number of days of exposure during the analyzed year? Could the authors specify?
4. What were the criteria and the rationale used to select the comorbidities and the “site of operation” included in table 1 and table 2? Please specify?

Discretionary Revision:
1. In the “introduction”, the section in which the authors explain the characteristics of the NHI should be rewritten more clearly.
2. Should the authors provide more information on the types of data available in the National Health Insurance Research Database?
3. The tables are too long and should be shortened.
4. The legend at the end of the table 2 is not related to any content: please revise.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Not suitable for publication unless extensively edited

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.