Reviewer's report

Title: Volume, distribution and acidity of gastric secretion on and off proton pump inhibitor treatment: A randomized double-blind controlled study in patients with gastro-esophageal reflux disease (GERD) and healthy subjects

Version: 1 Date: 10 July 2015

Reviewer: michele cicala

Reviewer's report:

In this interesting investigation, the Authors aimed at assessing MRI technique to visualize and quantify volume and distribution of the acid pocket in healthy volunteers and in patients with GERD, before and following high dose PPI therapy given for one week. The design of the study is correct, the main findings were a significant reduction of secretion volumes and secretion layers and a reduced contact time between secretions and EGJ following PPI, both in patients and healthy subjects. MRI technique appears to be accurate in the quantitative assessment of acid pocket and a promising tool for future trials on novel drugs.

Some minor comments are:

GERD Patients were either affected by erosive esophagitis or uncomplicated, although confirmed by pH test, disease. How many of them belonged to the erosive population?

Similarly, findings of the symptom scores are not reported following placebo.

Besides the position - right decubitus - in which patients were investigated, another limitation of this study is the test meal (pure liquid), both are unphysiologic conditions.

Finally, the different distribution of gastric secretions within the proximal stomach in GERD patients vs healthy subjects may be due, apart from different morphology, to different motility of the proximal stomach in the two groups.

Level of interest: An article of importance in its field

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