Reviewer's report

Title: The clinical overlap between functional dyspepsia and irritable bowel syndrome according to Rome III criteria

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Reviewer: Giorgio Bedogni

Reviewer's report:

I was asked to review this paper as BMC statistical referee. I was blinded to the reviews made by the other referees.

MAJOR COMPULSORY REVISIONS

P5 It is very important that the Chinese versions of the Rome III FD and IBS questionnaires were properly validated. I suppose that this was done in a convenience (possibly consecutive) sample of the study population. Am I right to suppose this? I do not understand however what the ICC refers to (please, give 95% confidence intervals). It is probably a measure of the agreement between the first and the second measure but how did you take into the account the fact that the agreement may differ from one question to another? If this is the first validation of the questionnaire in China, it would be extremely useful to compare the reliability statistics obtained in your population with those obtained in other populations.

P5 You used a 6-point scale to measure the severity of FD symptoms. Was this instrument developed by you? If so, you should give reliability data (see above). If not, you should at least quote other uses in the literature.

P5 By summing the severity of all FD symptoms, you are weighing each symptom equally, e.g. a postprandial fullness=5 would equal an epigastric pain=5. I am not sure that this is clinically correct. The relative weighing of symptom severity made by the subject – especially for functional disorders such as FD and IBS – may differ substantially. Again, are there documented used of a similar 6-point scale in the literature?

P6 The previous considerations apply also to the grading of IBS symptoms.

P6 Please, detail clearly the outcome variable and the confounders (or risk factors if you prefer using this latter term as you do in the paper). You say that the OR of having FD and IBS together is 2.09 but I do not understand what is the reference category. I would understand and odds of FD given IBS or vice versa or is this a multinomial odds? I generally discourage modeling of all interactions as some may be significant just by chance. The choice of interactions to model should be made on the basis of clinical reasoning whenever possible. Whatever the case, the reader can get no picture of the interactions without having a clearly detailed list of confounders/risk factors. An alpha value of 0.2 is generally used to
keep potentially important confounders in the model. If this was your idea in using the 0.2 cut-point, I suggest keeping confounders in the model and not select them using a stepwise procedure. Your aim does not seem indeed to be prediction but control of confounding. Please, give the logistic models with control of confounding in Tables.

P7 You performed two univariate 2-group comparison separately but for your aim is more appropriate to perform a 3-group FD vs. IBS vs. FD+IBS comparison. Is this perhaps because you have not available all the data for all groups? Again, this could be better handled by a logistic model with control of confounding.

MINOR COMMENTS

P4 It seems that also subjects who refused to participate were given the questionnaire. Why?

P4 How were age and sex of non-responders obtained? I suppose from clinical charts. Or from the returned questionnaire?

P4 How did you plan sample size? On the basis of an expected prevalence, e.g. FD+IBS according to previous studies or on the basis or identification of risk factors?

P6 “significant illnesses” is too generic. Please, detail.

P7 Give the total number of patients to whom you administered the questionnaire. 3014 responders/0.89 percent makes about 3386 patients.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

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