

Reviewer #1:

1) How was parametric distribution evaluated? By Kolmogorov-Smirnov test?

Yes, parametric distribution was evaluated by Kolmogorov-Smirnov test. We have added this point in the statistical analysis part.

2) Bonferroni after chi-square? Maybe it was meant after ANOVA.

(Bonferroni, not Bonferonni).

Yes, thank you so much for your kind remind. We have revised this point in the statistical analysis part.

3) A figure reporting the process of patients selection and exclusion would be useful. For example, pain was frequently reported in left lower abdominal quadrant, therefore it is important to rule out diverticulosis.

Yes, we have detailed explanation about patient selection and exclusion in the "subjects" part. Consecutive patients with IBS aged 18-65 years from PUMCH gastroenterology clinics were enrolled in this study from June 2009 to February 2016. All patients met Rome III diagnostic and subtype criteria, including IBS with diarrhea (IBS-D), IBS with constipation (IBS-C), and mixed IBS (IBS-M). Patients with organic gastrointestinal diseases and metabolic diseases were excluded based on the results of routine tests for blood, urine, stool; liver, kidney, and thyroid function; measurements of carcinoembryonic antigen, erythrocyte sedimentation rate, and C-reactive protein; and abdominal ultrasound and colonoscopy/barium enema in the past year.

Actually, all IBS patient we enrolled have performed colonoscopies before enrollment to rule out organic diseases including diverticulosis.

4) I do not understand the utility of multivariate analysis in table 6. Indeed, some independent variables (pain) are inherent in the dependant variable, therefore it is obvious to find it significant. Moreover, it is unclear which is the measure of risk in logistic regression (it should be odds ration).

Since the Rome IV criteria have deleted the abdominal discomfort as the diagnostic criteria for IBS. We found a lot of IBS patients reporting abdominal discomfort or abdominal pain and discomfort in China. We wanted to find

what kind of patients would report abdominal pain and what kind of patients would report abdominal discomfort. So we used multiple logistic regression analysis as in table 6 to find the characteristics of patients reporting abdominal pain alone, abdominal pain & discomfort, and abdominal discomfort alone. Yes, we used odds ratio (OR) as the measure of risk in the logistic regression as mentioned in the "Risk factors for IBS patients describing pre-defecatory symptoms as abdominal pain alone, discomfort alone, and pain & discomfort" part.

5) Is this a single center study? If so, this should be acknowledged as an additional limitation in the Discussion.

Yes, this is a single center study. We have added this as a limitation in the discussion.