Dear Editor

Thank you very much for the opportunity to submit our manuscript "Overweight and abdominal fat are associated with normal bone mineral density in patients with ulcerative colitis". All the review´s suggestions were evaluated and they are described here and it also highlight in yellow on the text. We hope to have taken care at the issues.

Reviewer 1:

1. In introduction, please add a sentence or two describing the abdominal fat in association with UC.

   A: The change in the introduction was made. Pg 5

2. What was the rationale for not using a control group in the study? (Major concern).

   A: Data from the control group of this population were collected and published in another study of ours (DOI: 10.1590/1414-431X20176374). We did not initially consider the control group in the present study, however, we accepted the reviewer's observation. Pg 5,6

3. How was the UC activity determined? Authors no mention of which symptoms were representative of active disease. Also, there are validated clinical scores to determine activity, and authors should mention their reason for not using them. - UC is a disease that requires clinical, endoscopic, and histological criteria to be fulfilled. What was the rationale for not using a validated Histological score?

   A: We used the Lichtiger index, as described in the methodology, because it is a validated method, widely used in clinical practice, is non-invasive and low-cost. Histological evaluation was not the objective of our study.

4. In Materials and Methods, lines 32 to 35, the sentence should be corrected." For statistical analysis, they were separated into two groups, with excess weight (BMI ≥ 25.0 kg/m2)".

   A: The change was made. Pg 7

5. Please determine the reference for normal range of Calcium and albumin concentration.

   A: The normality reference value is irrelevant, considering that the objective of the study was to compare whether there is a difference between the values of these variables between specific groups. The text has been revised.

6. In Materials and Methods, Please provide the full name of the manufacturer's instructions or companies.

   A: The changes were made. Pg 7

7. The conclusion is very brief. This section requires a more accurate comparison as well as the comparison of collected data.

   A: The changes were made.

Reviewer 2:

1. The authors performed a very basic analysis of socio-ethnic, disease related factors on the prediction of the prevalence and risk factors for low bone mineral density.

   A: We do not evaluate other data. The characteristics of the control group were similar to the case group, both predominantly of mixed ethnicity.

2. The topic is not novel at all, the paper does not add to the current literature.

   A: The topic, risk factors for low BMD in patients with IBD, is not new when considering the IBD population. Data on body fat and BMD are

scarce and to date we have not found studies on abdominal fat and BMD in UC patients. Pg 5

3. The authors did not give details on how T/Z-scores were calculated, the reviewer assumes that this reflects data relative to the available Brasilian control population (different for males and females?), please give details on this.

   A: The T/Z-scores were based on the World Health Organization (reference in the paper). As the control group was included in the study, information were added in the "assessment of bone mineral density" of Materials and Methods. Pg 8

4. In addition, it would be important to know how osteopenia and/or osteoporosis was defined, based on T -scores reflecting femoral neck-spine or total body?

   A: The lumbar spine and femoral neck were the bone sites used for this classification. This information was added in the paper. Pg 8

5. The associations should be unfortunately separately studied in males and females and preferentially pre- and post-menopausal populations for obvious reasons, otherwise the conclusions might be biased by gender and/or premenopausal state.

   A: Menopausal, postmenopausal, or estrogen therapy women were not included in the study (described in "study design and patients" in Materials and Methods). In addition, 75% of UC patients were younger than 45 years (age range: 20 to 56 years). Around 71.4% (20/28) of UC patients with low BMD were younger than 45 years of age.

   Regarding gender, in preliminary analyses, no significant differences were found in nutritional characteristics (anthropometric and body composition) between those with UC with low and normal BMD when stratified by gender. In addition, this stratification of the UC group considerably reduced the sample, making possible inferences unfeasible.

6. Student t-test is not appropriate for studying this small patient cohort, at least a T-test with separate variance estimates would be needed.

A: The variables were reviewed for normality behavior. The Mann-Whitney test was adopted.

7. The English is unfortunately poor with basic grammatic errors, on top authors did not pay attention to careful proofreading, multiple Brasilian expressions remained in the manuscript/Tables.

   A: All article was reviewed.