

In Reply to: Meta-analysis on obesity and risk of inflammatory bowel disease: re-analysis is needed

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In Reply to (Meta-analysis on obesity and risk of inflammatory bowel disease: re-analysis is Needed)

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To the Editor:

We thank Dr. Alireza Milajerdi, Dr. Bagher Larijani, and Dr. Ahmad Esmailzadeh for their interest in our manuscript¹. They mention several critical issues in their letter to editor, which we have duly examined, and herewith provide a point-by-point rebuttal.

With respect to the first issue raised, regarding our literature search, they cited five papers²⁻⁶ and suggested that they were missing in our systematic literature search; however, respectfully, these papers were investigated in our literature search. According to the inclusion criteria (page 2, section 2.2, line 2) of our paper, studies with a prospective cohort design were included in our analysis, however, four of five papers mentioned in the letter to editor had a retrospective design²⁻⁵. Furthermore, the additional mentioned paper, Harpsøe et al. 2014, used Danish National Birth Cohort (DNBC) data⁶; we included the work of Mendall et al. 2018, whom used the same data⁷, and according to our inclusion criteria (page 2, section 2.2, line 10-13), for multiple reports consisting of the same data, we used the longest follow-up period results. Accordingly, the follow-up period was 11 years in the Harpsøe et al. study and 13.9 years in Mendall et al. study, so we used the latter paper for analysis.

The second issue raised by the authors is with regard to combined data from children and adults. We sought (page 2, paragraph 3, line 19-21 of our study) to assess the association between BMI and risk of incident UC and CD, indeed, the aim of our paper was to investigate the risk of UC and CD incidence in highest or lowest category of BMI compared to normal category. These categorical cut points may vary by country and age; however, the aim of our paper was not to compare the effects of different cut points or duration.

The third issue raised refers to the association between BMI, as a continuous variable, and IBD in a dose-response analysis according to two mentioned studies^{6, 8}. Indeed, we used the data of these studies in our meta-analysis. With regard to the dose-response analysis and continuous variable, we did not

perform a linear dose-response analysis in our paper, instead, and respectfully, we conducted non-linear dose-response analyses.

The fourth issue was regarding the reporting of RR for total IBD, in addition to CD and UC, according to incumbent data from Christian et al ⁵. The mentioned study was conducted using a retrospective design, and thus, we could not include it because it did not meet our inclusion criteria. Furthermore, the results of a single study do not constitute sufficient for inclusion in a meta-analysis.

In summation, we appreciate the comments of Dr's Milajerdi, Larijani, and Esmailzadeh; however, we respectfully disagree with the suggestion of re-analysis, where our inclusion criteria and statistical analyses were justified, robust and clearly stated. We do, however, concede that further work considering the author's points is warranted.

REFERENCES

- 1 Rahmani J, Kord-Varkaneh H, Hekmatdoost A, *et al*. Body mass index and risk of inflammatory bowel disease: A systematic review and dose-response meta-analysis of cohort studies of over a million participants. *Obesity Reviews*. 2019.
- 2 Flores A, Burstein E, Cipher DJ, Feagins LA. Obesity in inflammatory bowel disease: a marker of less severe disease. *Digestive diseases and sciences*. 2015; 60: 2436-2445.
- 3 Kim JY, Park DI, Han DS, *et al*. Comparing the clinical outcomes of young-onset and adult-onset ulcerative colitis: a multi-center Korean Association for the Study for Intestinal Diseases study. *The Korean journal of internal medicine*. 2017; 32: 69.
- 4 Kuwahara E, Murakami Y, Nakamura T, *et al*. Factors associated with exacerbation of newly diagnosed mild ulcerative colitis based on a nationwide registry in Japan. *Journal of gastroenterology*. 2017; 52: 185-193.
- 5 Christian KE, Jambaulikar GD, Hagan MN, *et al*. Predictors of early readmission in hospitalized patients with inflammatory bowel disease. *Inflammatory bowel diseases*. 2017; 23: 1891-1897.
- 6 Harpsøe MC, Basit S, Andersson M, *et al*. Body mass index and risk of autoimmune diseases: a study within the Danish National Birth Cohort. *International journal of epidemiology*. 2014; 43: 843-855.
- 7 Mendall M, Harpsøe MC, Kumar D, Andersson M, Jess T. Relation of body mass index to risk of developing inflammatory bowel disease amongst women in the Danish National Birth Cohort. *PloS one*. 2018; 13: e0190600.
- 8 Chan SS, Luben R, Olsen A, *et al*. Body mass index and the risk for Crohn's disease and ulcerative colitis: data from a European Prospective Cohort Study (The IBD in EPIC Study). *The American journal of gastroenterology*. 2013; 108: 575.

