

Re: Errors in Zhao *et al* (2015), Impact of enteral nutrition on energy metabolism in patients with Crohn's disease

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Abstract

We report invalidating errors related to the statistical approach in the analysis and data inconsistencies in a

published single cohort study of patients with Crohn's disease. We provide corrected calculations from the available data and request that a corrected analysis be provided by the authors. These errors should be corrected.

Key words: Statistical error; Differences in nominal significance; Data inconsistency

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Core tip: The modern scientific process depends on the collaboration among multiple investigators with complementary expertise. Gone are the days when a single investigator can typically be expected to have all the expertise necessary to produce a high quality article on any complex topic. One area of expertise that may be often taken for granted is that of the statistical design and analysis. The concerns raised about the paper in our letter highlight the value of having extensive and careful statistical input into the production of any empirical research paper.

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TO THE EDITOR

We are writing to address concerns we have with the paper by Zhao *et al*^[1] (Impact of enteral nutrition on energy metabolism in patients with Crohn's disease. *World J Gastroenterol* 2015; 21: 1299-1304). The first comment below appears to be an invalidating error, the correction of which will plausibly alter the

conclusions of the paper.

The authors draw conclusions for between group differences based on differences in nominal significance of within-group, pre-post differences (Tables 2 and 3, Figure 1). This is statistically invalid^[2], and therefore, the paper's conclusions are currently unsubstantiated. Furthermore, even if statistically significant between-group differences were found using an appropriate statistical analysis such as analysis of variance, given that the article describes a non-experimental design, use of the term "Impact" in the title implies causal effects not justified by the design^[3].

In review of this paper, other data-related problems were identified of a more moderate nature that may not impact the conclusions of the paper but require correction: (1) The values given in the study are not internally consistent. For example, age was listed as having a mean of 33.4 at the end of the paragraph sub-titled "Patients" on page 1300, but summarizing the overall sample in Table 1 indicates it is 40.19. This further conflicts with the description of the mean age for men and women, which provides an overall mean age of 38.21 (Results, page 1301); (2) The means for REE from Figures 1 and 2 are also incompatible. The Mean REE/kg in Figure 2 for Panel A, measured REE is approximately 17 [before enteral nutrition (EN) treatment]. The values for each group in Figure 1 average about 27 REE/kg in the before EN bars. Exact data for these figures is not provided; and (3) the means reported in Table 3 for the combined A and B groups are not correct based on the values provided

Table 1 Corrected mean values for combined groups (active A + B, n = 40) based on data reported for the groups separately in Table 3^[1]

	Pre	Post
CRP	27.92	13.19
ESR	28.58	18.09
CDAI	233.02	155.51

CDAI: Crohn's disease activity index; CRP: C-reactive protein; ESR: Erythrocyte sedimentation rate.

for groups A and B separately. Our calculations (Table 1) provide the above mean values different than those reported.

We respectfully request that the authors address these concerns to correct and clarify the scientific record.

REFERENCES

- 1 **Zhao J**, Dong JN, Gong JF, Wang HG, Li Y, Zhang L, Zuo LG, Feng Y, Gu LL, Li N, Li JS, Zhu WM. Impact of enteral nutrition on energy metabolism in patients with Crohn's disease. *World J Gastroenterol* 2015; **21**: 1299-1304 [PMID: 25632205 DOI: 10.3748/wjg.v21.i4.1299]
- 2 **Bland JM**, Altman DG. Comparisons against baseline within randomised groups are often used and can be highly misleading. *Trials* 2011; **12**: 264 [PMID: 22192231 DOI: 10.1186/1745-6215-12-264]
- 3 **Editors of Heart Group Journals**. Statement on matching language to the type of evidence used in describing outcomes data. *Cardiol J* 2013; **20**: 110 [PMID: 23558822 DOI: 10.5603/CJ.2013.0020]

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