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Dear Reviewers

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Re: Age-related Impairment of Esophagogastric Junction Relaxation and Bolus Flow Time

I would like to thank you for your thoughtful consideration of our paper with the above title.

Reviewer 02446368 did not request any specific changes.

Reviewer 02546581 requested that the clinical significance and outlook components in the discussion be strengthened. I have made the following changes to the manuscript with this purpose:

At the end of the first paragraph in the discussion I have added:

A low threshold should be maintained for further clinical assessment (e.g. via endoscopy) of upper gastrointestinal symptoms in older subjects and a recognition that they do not always present with typical symptoms.

At the end of the second paragraph in reference to the findings during manometry, I have added:

While resting EGJ-CI is congruent with "total" EGJ-CI in young subjects, this is not the case in subjects aged greater than eighty years. This is because decreased swallow-induced LES relaxation in these older subjects would increase the measured EGJ-CI during swallowing ("total" EGJ-CI). "Total" EGJ-CI would *not* be a reliable measurement of EGJ barrier function in older subjects and should not be clinically used to determine such function.

At the start of the next paragraph I added a qualifier to the statement "Our findings, of a similar EGJ-CI in older subjects and controls, are in keeping with that of Bardan, etc." This sentence is added to aid clarity.

At the end of the third paragraph I removed the section in part explaining the concept relating to resting versus swallow related EGJ-CI (as the description now occurs earlier in the second paragraph, as per the above change) and again added for clarity: "In this context, care needs to be taken of exactly how EGJ-CI is calculated, *i.e. whether at rest or during swallowing, with only values at rest being clinically relevant in subjects over eighty, as discussed above.*"

At the end of the next paragraph I added: "*The clinical implications of these findings are the potential for prolonged retention of refluxed contents, leading to the observed increase in erosive reflux disease in this population, but also longer esophageal retention of swallowed contents leading to a higher prevalence of "pill" esophagitis; and increased prevalence of esophageal dysphagia symptoms (or asymptomatic swallowing dysfunction) in the aging population. Esophageal bolus transport is reduced in this population and thus an additional factor of decreased swallow-induced LES relaxation may change borderline bolus transport into clinically relevant dysphagia.*"

At the end the next paragraph, a description of the bolus presence and bolus flow matrix, I added the sentence" ...revealing that both these factors play a role in reduced esophageal bolus clearance in older individuals *and as described above may lead to clinically relevant dysphagia*".

Further minor clarifying remarks are added in the last paragraph: "Our study showed evidence of similar EGJ barrier function *at rest, but not during swallowing*; reduced swallow induced relaxation and markedly reduced bolus flow time..." and a final sentence: "*Our study also implies the EGJ, in addition to the oropharynx and distal esophagus, should be a focus during investigation and may be a potential therapeutic target (e.g. for dilatation) in aged patients with dysphagia.*"

Further very minor grammatical and structural changes are indicated in the manuscript (in red) and are intended to aid clarity when reading the manuscript.

I hope you find these changes in order

Yours Faithfully

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