Author's response to reviews

Title: Impact of comorbidities on postoperative complications in patients undergoing laparoscopy-assisted gastrectomy for gastric cancer

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Author's response to reviews: see over
Dear Editor-in-Chief, *BMC Surgery*

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We have revised our manuscript (MS: 1147015709121430) entitled “Impact of comorbidities on postoperative complications in patients undergoing laparoscopy-assisted gastrectomy for gastric cancer” on the basis of the reviewer’s comments.

To reviewer 1:

1. As you mentioned, the patients in this study mainly received D1+ lymphadenectomy (LND) and distal gastrectomy, because LAG is recommended for the treatment of early gastric cancer in Japan. This finding is clearly written in the Results section (page 9, line 9-13). Our results would probably differ from the results of similar studies done in Western countries owing to the differences in the most common sites of GC or the disease stage at diagnosis as compared with Japan (in the Discussion section, page 13, lines 10-15).

2. Diabetes mellitus is a known risk factor for PCs after pancreaticoduodenectomy and hepatectomy, while Jeong et al. (Reference No. 2) found no relation between diabetes mellitus and PCs after gastrectomy. Preoperative strict diabetic control by diabetologists for about 2 weeks in patients with severe diabetes mellitus in our hospital might have resulted in the favorable postoperative course. COPD is a risk factor for postoperative pulmonary complications after non-thoracic surgery. COPD was not associated with postoperative pulmonary complications in our study or in a previous study including patients who received open
gastrectomy. Preoperative smoking cessation for about 3 to 4 weeks in all patients and breathing exercises in patients with severe COPD might have contributed to the low incidence of pulmonary complications (10 patients, 1.8%), and 8 (1.5%) patients with 3 or more severe COPDs had no pulmonary complications in this study (in the Discussion section, page 15, line 2-13). We have added 4 references (No. 22-25).

3. We have revised the portion of the manuscript on postoperative survival. Our secondary aim was changed to evaluating the impact of insufficient LND on PCs and survival in patients with high-risk conditions (heart, CNS, liver, renal, and pulmonary comorbidities or dysfunctions, all of which were associated with PCs). We therefore also revised the Background section (page 4, line 11 to page 5, line 11), the Methods section (page 8, lines 4-9), and the Results section (page 11, line 17, to page 12, line 16).

The indications for insufficient LND in risky patients were decided by consensus among a team of gastrointestinal surgeons in our hospital and were primarily based on the general condition of risky patients; we had no predefined criteria for such indications. We performed at least D1+ LND in risky patients who had a preoperative diagnosis of advanced GC. Insufficient LND did not reduce PCs in patients with risky comorbidities. In contrast, cardiac or pulmonary PCs increased in this study. However, if all patients had undergone sufficient LND, more PCs might have occurred. In addition, insufficient LND did not significantly shorten GC-specific survival in patients with any risky comorbidity. Insufficient LND, such as D1+ LND for advanced cancer, may thus be permissible in high-risk patients (in the Discussion section, page 16, lines 7 to
4. The term was corrected to “harmonic scissors” (page 6, lines 6-7).

To reviewer 2

1. In accordance with your advice, we deleted the portion on patients’ survival and revised the contents in part of the manuscript.

The primary objective of study was to clarify comorbidities associated with PCs after LAG. Jeong et al. showed that heart disease and liver disease were independent risk factors for PCs after D2 gastrectomy, including many open approaches (Reference No. 2). Our results were entirely consistent with the results of Jeong’s study. Heart disease and liver disease might be common risk factors after gastrectomy (in the Discussion section, page 13, line 2-5).

The secondary objective was revised to evaluating the impact of insufficient LND on PCs and survival in the subgroup of patients with any risky comorbidity. Patients with no risk patients should undergo standard LND and were therefore excluded. We have revised the Background section (page 4, line 10 to page 5, line 11), the Methods section (page 8, lines 4-9), the Results section (page 11, line 17 to page 12, line 16), and the Discussion section (page 16, lines 7 to page 17, line 3). We have also mentioned this issue in our response to reviewer 1 (#3) in this letter.

2. This study had several limitations. Most important, it was a single-center study performed by experts in LAG. Our results thus might not be applicable to general hospitals. A pooled analysis or a multicenter study involving surgeons
with various degrees of experience is necessary to identify common risk factors for gastrectomy (in the Discussion section, page 14, line 5-9).

3. This study was retrospective, but we used a prospective database of GC patients.

4. The aims of study were revised somewhat as mentioned above, and one clinical question was the impact of insufficient LND in risky patients on clinical outcomes. Insufficient LND did not reduce PCs in patients with one or more risky comorbidity; on the other hand, cardiac or pulmonary PCs increased. Insufficient LND did not significantly shorten GC-specific survival in patients with any risky comorbidity. Insufficient LND, such as D1+ LND for advanced stage, may thus be permissible in this subgroup of patients (in the Conclusion section).

5. The Discussion and Conclusion sections were revised, as stated above.

6. This main limitation of this study was that it was a single-center study performed by experts in LAG (in the Discussion section, page 14, line 5-9). This study included patients who mainly underwent distal gastrectomy and D1+ LND (in the Discussion section, page 13, lines 10-15).

7. We have added references from Western countries (No. 23 and 24). However, most reports on risk factors after gastrectomy were published by investigators in Korea and Japan.

8. The Abstract was shortened, and the conclusion was revised.

# Major revisions:

A pooled analysis would be a better method; however, few studies have shown a relation between the degree of preoperative comorbidities and postoperative
comorbidities.

#Minor revisions

We have revised the contents in parts of the manuscript. The relevance of the context was reconsidered.

#Discretionary Revisions

In Jeong’s report (Reference No. 2), hypertension and heart disease were separately analyzed. We also did so.

Only 5 patients (0.9%) received transfusion, and transfusion was not assessed in this study (in the Results section, page 10, lines 2-3).

Sincerely yours,

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