Reviewer’s report

Title: Evaluation of Risk Factors for Perforated Peptic Ulcer

Version: 0 Date: 07 Sep 2017

Reviewer: Hyunghun Kim

Reviewer's report:

I. General view

Dear Authors

First, I would like to cheer up authors' effort for this result. I know how hard it is. However, there are many points that I would like to ask about authors' paper.

In General, please write authors paper in detail especially in method and result section. I read again and again to find out missing word (in my opinion). Please do not make readers suspicious of something during reading authors' paper. The logic should be like water flow from the mountain to the ocean. Please keep in mind that if you find something weird in your paper, it should be investigated deeply and should be explained. Then please check many things that I suggested you. I am looking forward to listening authors' logics and reasoning.

II. Specific points

Abstract

# All data such as past medical histories, physical findings, and laboratory data were collected [though?] chart reviews. I conjecture that though may be through? Please check it

Introduction

# The introduction is somewhat complicated. Please make it more concise, for example, you do not need to narrate all details accompanied with PUD. You need to focus on PPU.
Method

# Please describe method section as delicately as possible. It is very important

# Authors described "In contrast, we considered those patients who were subjected to an abdominal CT scan at dates close to the scans of case subjects but were diagnosed with diseases other than PPU and had the same demographics, including exact age and gender, as potential control subjects."

Have authors ever thought of 1:3 case-control comparison? You used 1:2 (136:272) situation. It is Ok, but 1:3 might increase the statistical power. Did you select 1:2 due to not enough PPU patients? Please let me know.

# Why did you use four models?

# Dear Authors… I would like to listen to authors' opinion about ROC (Fig 1). Would you please describe the accurate title of ROC? I cannot understand what this curve means when I watch this tile. As you know ROC curve needs two responsive variables and one explanatory variable. Is ROC curve about muscular defense or PUD history? The suggested significant factors were muscular defense and PUD history. Do you have any scale about this variables in common clinical practice in authors' hospital? I understand that this is a retrospective study "A retrospective case control study was conducted between August 2004 and March 2016 at St. Luke's International Hospital"

Result

# Please describe result as delicately as possible.

# In table 1 and table 2, I found out that some variables are significant in Multivariate analysis but not significant in Univariate analysis. This phenomenon might be caused by following four reasons; (1) the effect of unbalanced sample size; (2) the influence of missing data; (3) an extremely large within group variation, relative to between group variation; and (4) the presence of interaction. Please describe authors' view on this statistical phenomenon in authors' paper.

# In table 2, many statistical results are missing. I would like to ask authors why?
Discussion

# Authors described "There were some differences in the prediction factors between PUD and PPU. For one, anticoagulants were thought of as a prediction factor for PUD, increasing the OR to 1.98 15, but anticoagulants did not increase the risk of PPU in our study. We hypothesized that the insignificance of anticoagulant drugs was due to their mechanism. Unlike Cox-1 inhibitors, anticoagulants are medications which inhibit the productions of fibrin at the end of the blood coagulation reaction 16; they may promote the bleeding risk, but may not cause damage to the gastric mucous membrane."

In my opinion, authors' explanation seems not so persuasive. I agree that anticoagulant does not cause mucous membrane damage directly, however it can prohibit rapid healing of damaged mucosa and consequently can contribute perforation process because coagulation is also the defense mechanism prohibiting progression of PUD. As you know, out body is homeostatic status; damage & repair, damage & repair, & damage & repair... I do believe the breakdown of homeostasis may substantially contribute from ulcer to perforation. I would like to listen to authors' opinion.

# Authors described "increase in platelet count was statistically significant in PPU, and could be used as a prediction factor. Platelets are component of blood, necessary to arrest bleeding, thus thrombocytopenia is known cause of bleeding. In our PPU study, however, platelet counts were significantly increased. We presumed that peritonitis caused inflammation and perforation stimulated coagulation; therefore, platelet counts were increased especially in the PPU patients."

Do you think this is the logical explanation? You said that thrombocytopenia is known cause of bleeding, AND said stimulated coagulation is the cause of thrombocytopenia. Would you please show logically missed explanation to make me understand?

Conclusion

# I do believe that the conclusion should be concise with gist information, but authors' conclusion is very obscure. I believe that most physicians know that they need APCT when PPU is suspicious. I think the reasonable concise conclusion from authors' paper would be "When a physician find out muscular defense and PUD history APCT would be necessary for diagnosing PPU" if I accept all method and results of this paper. Please keep in mind that the conclusion should not be obscure or too long.

Thank you for reading long comments
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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