

Dear Editor:

On behalf of my co-authors, we thank you very much for giving us an opportunity to revise our manuscript, we appreciate editor and reviewers very much for their positive and constructive comments and suggestions on our manuscript entitled “The role of gut microbiota on intestinal barrier function in acute pancreatitis”. The manuscript has been improved according to the suggestions of reviewer:

For Reviewer 1: You can detail if today in course of acute pancreatitis is possible to protect a normal intestinal microbiome and to prevent microbes translocation.

Response: Thank you for your valuable suggestions. We have learned that early enteral nutrition is thought to help protect the gut barrier and reduce bacterial translocation, thereby reducing the risk of infected peripancreatic necrosis and other serious AP outcomes. Moreover, we have observed that intestinal flora gradually returns to normal during the recovery of acute pancreatitis in mice and we will publish related results in few days.

For Reviewer 2: The role of intestinal flora on gut permeability and the effects of severe inflammation is of great importance. The authors have produced a review of the role of these topics in acute pancreatitis and have postulated ways in which manipulation might worsen outcome and how this relates to other factors that have been shown to affect severity. The manuscript is well written with only a few grammatical and typographical errors. The main issue is that the manuscript is 'dry' and therefore hard to read and digest. I would suggest that it might benefit from tabulation (of for instance the bacteria) and possibly some schematic diagrams.

Response: Thank you for your suggestions. We have added a picture in the manuscript.

For Reviewer 3: The authors review the role of gut microbiota in acute pancreatitis. They have summarized results of various studies on the topic and have deduced that there is alteration in gut microbiota and it adversely affects intestinal barrier which in turn aggravates pancreatic and systemic inflammation and infection. The review can be made more useful if the following points can be incorporated: What brings about change in microbiota in acute pancreatitis Does etiology of AP matter? The authors could give more details of altered microbiota affecting inflammation, mechanical integrity and immune dysfunction and how these affect the course of the disease. They could elaborate on how dysbiosis affects inflammation and infection, both pancreatic and systemic. They could provide a flow-diagram to knit up all events. Reversing the microbiota alterations by probiotics and fecal transplantation need to be put in the right perspective, both in the text and in the conclusion segment.

Response: Thank you for your valuable suggestions. Firstly ,there have no studies about different etiology of AP can influence the gut microbiota, we can do it next step to verify this correlation. Moreover, we discover that the severity of the disease can influence the gut microbiota in course of AP. The severe AP has more poor microbiota composition. Second, we focus the function of intestinal barrier during AP and we describe how the gut microbiota and its metabolites influence intestinal barrier, then influence the severity of AP. Intestinal inflammation and immunity may play an important role in AP and gut microbiota dysbiosis may influence system inflammation during AP, we have made a short introduction in the manuscript and add some comment in the manuscript with red font. Finally, We have added a picture in the manuscript.

We express our great appreciation to you and the reviewers for your comments regarding our manuscript and look forward to hearing from you.

Thank you and best regards.

Sincerely,

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