

Reviewer #1:

**Scientific Quality:** Grade A (Excellent)

**Language Quality:** Grade A (Priority publishing)

**Conclusion:** Accept (High priority)

**Specific Comments to Authors:** Gut microbiota plays a crucial role in the pathogenesis of liver diseases and in the past decade microbiome research in liver disease has evolved significantly. Accumulating evidence suggests that progression of dysbiosis can be associated with worsening of liver disease. New therapeutic strategies are expected to be established and there remains a need for more studies in this interesting area. In this manuscript the authors tried to evaluate the relationship between gut dysbiosis and SIBO in patients with cirrhosis. The methods used in this manuscript are the gold standard in these area to evaluate the gut microbiome analysis and SIBO assessment. Through the chosen methods, the authors demonstrated the differences between microbiota in patients with and without SIBO, and the difference in the levels of Firmicutes and Bacteroidetes between the group with and without SIBO was as expected. As the authors explained the limitation of this study is its small size, which could be a major limitation at the statistical level, however from the results obtained we can see that many are statistically significant, with p values within the required parameters. A new door to science is thus opened allowing new studies and breakthrough discoveries to start focussing on new approaches aimed at directing the gut microbiota as a potential therapeutical target.

**Authors' response:** Thank you very much for reviewing our manuscript.

Reviewer #2:

**Scientific Quality:** Grade C (Good)

**Language Quality:** Grade B (Minor language polishing)

**Conclusion:** Minor revision

**Specific Comments to Authors:** This submission is about the gut dysbiosis and small intestinal bacterial overgrowth as independent forms of gut microbiota disorders in cirrhosis, The author combines gut dysbiosis and SIBO together to analyze, the results showed SIBO was found in 24/47 (51.1%) patients. Patients with SIBO had a higher abundance of Firmicutes ( $p=0.017$ ) and Fusobacteria ( $p=0.011$ ), and a lower abundance of Bacteroidetes ( $p=0.013$ ) than patients without SIBO, The design and technique route is scientific and valuable, Thus, for the conclusion, the author should illustrate the clinical value for the difference in gut dysbiosis.

**Authors' response:** Thank you very much for reviewing our manuscript.

Unfortunately, we were unable to show significant differences between patients with mild and severe dysbiosis for most indicators despite the obvious trends. We plan to devote a separate article to this, which will include a larger number of patients.

Reviewer #3:

**Scientific Quality:** Grade B (Very good)

**Language Quality:** Grade A (Priority publishing)

**Conclusion:** Accept (General priority)

**Specific Comments to Authors:** This is a complete and well done analysis of the gut dysbiosis and the small intestine bacterial overgrowth that occur in cirrhotic patients. The study is complete. The hypothesis of bile metabolism change is new and interesting and merit to be confirmed in further studies

**Authors' response:** Thank you very much for reviewing our manuscript.

(1) Science editor.: 5. Issues raised: (1) The “Author Contributions” section is missing. Please provide the author contributions; (2) The format of references needed to be revised according to journal’s demands. (3) PMID and DOI numbers are missing in the reference list. Please provide the PubMed numbers and DOI citation numbers to the reference list and list all authors of the references. Please revise throughout.

**Authors' response:** Done.