

Reviewer #1:

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

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

**Conclusion:** Major revision

**Specific Comments to Authors:** Peer review: Authors present safety and efficacy data of COVID-19 vaccination in patients with cirrhosis

Major comments: Abstract conclusion "Revaccination should be carried out within the sixth month after the injection of the first dose of the vaccine" how did the authors reach that conclusion. There is no mention of this in the entire abstract and suddenly "6 months revaccination" ?

**Authors' response:**

This has been removed.

The overall design of the study is not clear. Are the authors describing "case-control" design?

**Authors' response:**

This is not a case control study, but it is a cohort study. In a case-control study, researchers compare patients with COVID-19 (case) and those without COVID-19 (control) to assess the difference between these groups in the vaccination rate (for example <https://pubmed.ncbi.nlm.nih.gov/34174190/>). We are comparing 2 cohorts (vaccinated and unvaccinated) in the incidence of COVID-19, mortality, and so on (for example <https://pubmed.ncbi.nlm.nih.gov/33901423/>).

If so, then under methods there no place for "intervention" and "control". This is not a clinical trial. Entire section needs to be re-written. Describe this as "exposure" instead.

**Authors' response:**

The intervention and control sections are merged into the exposure section.

How were the patients selected? There is no information about the case and control selection. One of the biggest concern is the "selection bias" and "volunteer bias". More often than not, the healthier subjects tend to be agreeable to take part in the research. Authors need to explain this clearly in the methods section.

**Authors' response:**

It was added in the method section:

"There were no special criteria for the selection of patients in the vaccination group. Vaccination was carried out at the will of the patients themselves."

It was added in the limitation section:

"Another limitation is the fact that patients themselves decided whether they would be vaccinated or not, which can lead to selection bias. However, as shown in Table 1, the vaccinated and unvaccinated groups did not differ significantly in the main indicators."

Outcomes: "primary outcome was the development of symptomatic COVID-19 case during the observation period" and this is tested by "positive PCR test of oropharyngeal or nasopharyngeal swab for SARS-CoV-2". Did the authors check the swab before including these patients in the study? Was there a confirmed negative swab before inclusion in the cases or controls group?

**Authors' response:**

No. The presence of a negative swab was not a prerequisite for vaccination. However, vaccination was carried out in the absence of fever and a symptom of a cold. PCR tests were only performed on patients with fever or other cold symptoms. None of the patients had these symptoms at the time of inclusion in the study.

"When evaluating the efficacy of revaccination, the vaccinated patients were considered unvaccinated 6 months after the administration of the first dose of Sputnik V." what is the rationale for this assumption? Were the antibody titers carried out? Spike protein levels? Nucleocapsid levels?

**Authors' response:**

We relied on the results of the Argentine researchers (<https://pubmed.ncbi.nlm.nih.gov/34841388/>), who found that the level of anti-SARS-CoV-2-spike-RBD IgG in the blood was significantly reduced 6 months after vaccination with Sputnik V. This was added in the Method section:

" When evaluating the efficacy of revaccination, the vaccinated patients were considered unvaccinated 6 months after the administration of the first dose of Sputnik V. We chose this period because it has been shown that the serum level of anti-SARS-CoV-2-spike-RBD IgG was significantly reduced 6 months after vaccination against COVID-19 with Sputnik V compared with the results in the first 3 months after this vaccination[8]. Moreover, these antibodies were not detected in almost 70% of person 6 months after this vaccination, although they were detected in 94% of persons 3 months after this vaccination[8]."

Vaccine efficacy was estimated by  $100 \times (1 - IRR)$ , where IRR (Incidence Rate Ratio) is the calculated ratio of cases of COVID-19 per 1 person-year of the observation in the vaccinated group to the corresponding illness rate in the unvaccinated group; 95% confidence interval (95% CI) for vaccine efficacy were obtained by the Baptista-Pike

method (on-line calculator "<https://rdrr.io/cran/ORCI/man/BPexact.CI.html>" was used). Has this method been validated?

**Authors' response:**

Yes. The referenced was added:

15 Baptista J., Pike M. Exact two-sided confidence limits for the odds ratio in a 2x2 table. Journal of the Royal Statistical Society. 1977;26:214-220 [DOI: 10.2307/2347041]

Why did authors choose this instead of titers/nucleocapsid/spike proteins?

**Authors' response:**

The aim of our study was to evaluate the clinical efficacy of vaccination rather than immunological one, which is much more important for practical health care. It is much more important for a doctor to know how much vaccination prevents the development of the disease, its severe form and death from it, than how many antibodies are formed in the patient after vaccination.

Did the study include outpatients? Inpatients? Or both?

**Authors' response:**

It was added in the Method section:

"Both inpatients and outpatients were assessed in the study."

There is no information explicitly discussing this component COVID-19 was detected significantly more often in unvaccinated individuals than in vaccinated ones: this is not new information? What is surprising about it? What makes these results worth publishing?

**Authors' response:**

That it also works in patients with cirrhosis who have a compromised immune system and are more susceptible to severe COVID-19.

"Severe COVID-19 was detected in 50.0% of unvaccinated patients infected with the coronavirus and in none of vaccinated patient" This is also expected, nothing new here either

**Authors' response:**

That it also works in patients with cirrhosis who have a compromised immune system and are more susceptible to severe COVID-19.

Results: Table 2 and 3 presents only the unadjusted analysis. Results need to be adjusted for comorbidities that are known to increase the risk of mortality in these patients (Age, DM, CKD, VTE, etc). Unadjusted analysis is not performed and it would not be wise to draw any conclusions without adjusted analysis (adj odds ratio).

**Authors' response:**

The adjusted analysis was shown in Table 3.

Reviewer #2:

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

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

**Conclusion:** Accept (General priority)

**Specific Comments to Authors:** Good work

**Authors' response:** Thank you for your appreciation of our manuscript.

Reviewer #3:

**Scientific Quality:** Grade D (Fair)

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

**Conclusion:** Accept (General priority)

**Specific Comments to Authors:** Nil

**Authors' response:** Thank you for your appreciation of our manuscript.