**Reviewer’s report**

**Title:** Liver function changes after transarterial chemoembolization in US hepatocellular carcinoma patients: The LiverT study

**Version:** 0 **Date:** 22 Feb 2019

**Reviewer:** Nicholas Fidelman

**Reviewer's report:**

The authors present the results of a retrospective observational study that was based on data obtained through a commercial organization, Optum. The analysis focused on the reported laboratory parameters. Thresholds for laboratory abnormalities that were used for the definition of liver function deterioration were selected by the authors without justification from literature. Liver function deterioration as a result of liver-directed therapy is well recognized.

Specific comments are included below.

**Title.**
1. The title only mentions chemoembolization, yet data for radioembolization (TARE) is also included.

**Patients and Methods**
2. How does Optum obtain their data? How complete and accurate are the data collected by Optum? Did the individual patients have the same laboratory parameter available at multiple time points?
3. Why does a single laboratory parameter accurately describe the degree of liver dysfunction? For instance, a patient may have a mild elevation of AST and a severe elevation of serum bilirubin. If only AST is recorded in the database, severe liver toxicity may be under-reported.

**Table 1.**
4. Was there any justification in the published literature for the deterioration threshold parameters outlined in Table 1? One might argue that the thresholds defined by the authors do not translate into clinically meaningful liver function deterioration.

**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.
No

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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Please indicate the quality of language in the manuscript:
Acceptable

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