



## PEER-REVIEW REPORT

**Name of journal:** *World Journal of Transplantation*

**Manuscript NO:** 86565

**Title:** Liver volumetric and anatomic assessment in living donor liver transplantation: the role of modern imaging and artificial intelligence

**Provenance and peer review:** Invited Manuscript; Externally peer reviewed

**Peer-review model:** Single blind

**Reviewer's code:** 03841987

**Position:** Peer Reviewer

**Academic degree:** MD

**Professional title:** Doctor

**Reviewer's Country/Territory:** China

**Author's Country/Territory:** Brazil

**Manuscript submission date:** 2023-06-27

**Reviewer chosen by:** Geng-Long Liu

**Reviewer accepted review:** 2023-07-15 06:54

**Reviewer performed review:** 2023-07-15 07:09

**Review time:** 1 Hour

<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
<b>Novelty of this manuscript</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
<b>Creativity or innovation of this manuscript</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation



<b>Scientific significance of the conclusion in this manuscript</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
<b>Language quality</b>	<input checked="" type="checkbox"/> Grade A: Priority publishing <input type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
<b>Re-review</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Peer-reviewer statements</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**SPECIFIC COMMENTS TO AUTHORS**

This study is aimed to provide a comprehensive review of the literature, presenting both traditional and emerging methods of LV, while discussing their respective strengths and weaknesses. By examining the current state of LV techniques. The topic of this review is somehow of importance, but some revisions are still needed. 1. Why did the author focus on the Volumetric calculations in liver donors? It is also important in many patients with liver diseases? Please provide more backgrounds to support your review only focus on this relatively small population. 2. Are the “semi-automated image processing, automated liver volumetry techniques, and machine learning-based approaches” parallel concepts? The semi-automatic and automatic techniques may use the machine learning approaches. Please consider to re-organize the three parts - maybe manual, semi-automatic and automatic; or manual, traditional machine leaning, and deep learning? 3. Why did the author put the deep learning approach separately in the “Future direction”? Deep learning approaches are currently used by many papers. Actually, it is not the future, but the current hotspot. 4. This paper is aimed to discuss the volume measurement of liver. Is radiomics a technique for volume measurement? I



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don't think it is appropriate to put the radiomics in this review.



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**Reviewer's code:** 03021264

**Position:** Editorial Board

**Academic degree:** MD, PhD

**Professional title:** Professor

**Reviewer's Country/Territory:** China

**Author's Country/Territory:** Brazil

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**Reviewer performed review:** 2023-07-22 16:26

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<b>Scientific quality</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
<b>Novelty of this manuscript</b>	<input type="checkbox"/> Grade A: Excellent <input checked="" type="checkbox"/> Grade B: Good <input type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No novelty
<b>Creativity or innovation of this manuscript</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No creativity or innovation



<b>Scientific significance of the conclusion in this manuscript</b>	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Good <input checked="" type="checkbox"/> Grade C: Fair <input type="checkbox"/> Grade D: No scientific significance
<b>Language quality</b>	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
<b>Conclusion</b>	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input type="checkbox"/> Major revision <input checked="" type="checkbox"/> Rejection
<b>Re-review</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<b>Peer-reviewer statements</b>	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous
	Conflicts-of-Interest: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

**SPECIFIC COMMENTS TO AUTHORS**

1. Liver volume measurement is important in both living donor liver transplantation and liver resection for liver cancer, so it is maybe more appropriate to change the title to liver surgery. There is no mention of the research progress of liver anatomy, only liver volume. 2. The volume or weight of the liver in vitro is less than the assessed liver volume due to the supply of liver blood flow to the hepatic arteries. When the graft restores the arterial blood supply, the volume increases appropriately to match the estimated liver volume. 3. FLR of the donor original liver volume graft volume to the standard liver volume (SLV) is the important reference index obtained by imaging before surgery. Graft recipient weight ratio is the important reference index obtained after surgery. Liver volume is related to graft weight, Therefore, the timing of the application of these two parameters is different and should not be confused. 4. Liver volume measurement requires the involvement of an experienced liver surgeon, as only the surgeon can conclusively determine the plane of separation of the liver and remove the effects of the middle hepatic veins and caudate lobes.