Reviewer’s report

Title: Outcomes following liver trauma in equestrian accidents

Version: 1

Reviewer: Jan BF Hulscher

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Major Compulsory Revisions

While this is a nice paper on liver injuries after equestrian accidents, there are a few major drawbacks which need to be assessed. The paper suffers from a few flaws which can not be repaired, such as the limited number of patients and the retrospective nature of the paper. I realize that these drawbacks are rather inevitable given the rarity of the injury described.

First, it seems as if patients who were referred from other centers are also included in the case load. This induces a large bias: patients who have been admitted and stabilized elsewhere (or even had surgery in another hospital one month prior to admission) can hardly be compared to patients admitted primarily to the shock room. This should be elucidated by adding information about the time between the accident and admission, and preferably all referrals should be omitted - when numbers allow.

Also, there is relatively little data on the severity of injuries sustained. All in all it seems most injuries are relatively minor. Providing a table including patient details such as concomitant injuries and ISS would provide more insight. This holds true as well for a more detailed description of the age of the patients: liver injury in children might need a slightly different management when compared to adult patients. How many patients were below 16 years of age?

I find it rather disturbing that in this relatively young and hemodynamically stable population CT scans are performed so often, and ultrasonography is bypassed. This is not according to standard protocols, and certainly not according to the insights in pediatric patients. CT scan does have diagnostic yield, but often does not lead to a change in management, despite the high dose of radiation administered. This seems to be the case in the present series as well. This should be discussed, and the conclusion that CT imaging is advised should be omitted - as it certainly does not hold true for all patients, let alone for hemodynamically stable children with possible liver injury. Based on the authors data set one might also make the case that CT scan in hemodynamically stable does not add anything at all besides radiation risk...

Apparently embolization has not been performed in the present series, despite the suggestion of an arterial blush on CT scan. The indication for embolization might be the most important result from a CT scan in a hemodynamically stable patient, and probably the only result that actually changes management. Why did
the authors not perform embolization in the patients with signs of active bleeding? What are the indications for embolization in their centre? The authors state that three patients were hemodynamically unstable upon admission. Two underwent surgery, but what happened to the third? This might also shed some light on the indication when to perform a CT scan.

An emergency hemihepatectomy is hardly ever necessary, and as the authors rightly state, associated with significant mortality. The authors should elaborate on the indication to perform an acute hemihepatectomy in 10% of their cases.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests