Author's response to reviews

Title: Knee Injuries in Multiple Traumatized Patients: a Trauma Registry Study in 3,458 patients

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Author's response to reviews: see over
Dear Ladies and Gentleman,

We thank the referees for the kind comments regarding our manuscript.

Referee 1:
“Minor Essential Revisions - aside from the minor grammatical errors that can easily be corrected by the reviewers, I would suggest that the authors change the term "outcomes" (i.e., omit it, or simply state the two key points of the paper), since the term "outcomes" implies functional or clinical outcomes in the setting of polytrauma patients with knee injuries (which was not investigated in this study).”

According to the aforementioned recommendation, we omitted the term outcome and changed the question sentence as follows: Therefore, the purpose of the presented study is to answer the following questions: (1) Do significant associations exist between knee injuries and trauma mechanisms or concomitant injuries? (2) Do injuries of the knee region aggravate treatment costs or prolong hospital stay in multiple trauma patients?

Referee 2
“Major issues:
A p-value < 0.01 is considered as statistically significant. Table 1 therefore shows that both groups significantly differ in injury severity and age. Throughout the manuscript this statistical difference is not mentioned (not even in the results part). In the abstract it is even written that „Injury severity and sex distribution were comparable between the groups“. This is also stated in the discussion „...despite similar injury severity scores to the Non-knee group“. If the standard p-value of <0.05 would be used also the sex distribution would have been statistically different. A significantly higher ISS in the Knee Group however would explain the increased length of ICU and hospital stay and the higher treatment costs, etc. Therefore, parts of the discussion are confusing because the ISS appears to be significantly higher in the Knee Group (assuming that table 1 is correct). Maybe the authors could also comment on the short-comings of the ISS in terms of underestimating the overall injury severity of patients with more isolated musculoskeletal injuries.
Overall this in an interesting approach to this clinically relevant issue; however, this manuscript needs thorough corrections.”
We agree with the referee’s major issue and corrected the results as follows:

Patients with knee injuries were slightly younger and had a significantly increased ISS (table 1).

In addition, the discussion has been enlarged in order to field the major criticisms:

Referring to the main aspects of treatment duration as well as primary outcome, it has to be stated that patients with knee injuries were slightly younger, less often male gender and had suffered a higher injury severity in the present study. However, analyzing the extent of differences focusing age and gender distribution, this aspect seems actually negligibly. Nevertheless, one might argue that increased treatment durations as well as costs might result solely from the increased injury severity without impact of “knee” influences. But as the differences of injury distribution seem descriptively minor (31.0 vs. 29.7), these differences might be argued as minor clinical relevance. This argument is supported by the presented mortality demonstrating an approximately 10% higher mortality in the Non Knee group despite the decreased injury severity. In addition, a statistical difference of three points ISS has already been accepted as less clinically relevant [18]. Another aspect mentioned is found in the injury severity score itself. In patients with multiple injuries confined to a single body region, the ISS considers only one of the injuries within that region [19]. In effect, the ISS ignores all but the worst injury per body region, which could result in a considerable underestimation in case of isolated extremity injuries [19]. However, treatment durations are influenced by many factors which are certainly not elucidated entirely by the presented study, although the presented register data enables vast data analyses. Nevertheless, we feel safe to argue the knee injury as one aspect to impact treatment durations and costs beside the injury severity and demographic parameters.

Again, we want to thank the referees for the kind comments looking forward for the manuscript’s decision.

Hagen Andruszkow