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Methodology and Statistical Analysis Questioned

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We read with interest the article by Schnettler et al. It is always encouraging to probe and review routine practices.

The result from this paper is interesting, but we would not compare these findings with the results from the meta-analysis and systematic review by Smith and Hing (1), as Schnettler et al. do at the end of the first paragraph. The latter study only showed that the use of a tourniquet can decrease intra-operative blood loss but does not influence transfusion rates. The “paradoxical” results of the Schnettler et al. study may be a reflection of the methodology and statistical analysis.

In this retrospective study, the Gross formula was used to calculate the blood loss estimate. This may have affected the accuracy of the estimate, as the Gross formula uses the patient’s minimum allowable haematocrit as the final value. A more appropriate choice would have been Mercuriali’s formula. (2)

Also, the means of estimated blood loss from the groups were compared using a 1-way Analysis of Variance (ANOVA). If these computed means were not controlled prior to comparison of the group with ANOVA, they may have resulted in error, and carrying out a post-hoc comparison using them could give misleading results.

Our conclusion is that the outcome of this study may be due to a combination of the choice of formula for estimating blood loss and possible statistical error.

References

1. Smith TO, Hing CB. Is a tourniquet beneficial in total knee replacement surgery? a meta-analysis and systematic review. *The Knee*. 2010 Mar 31;17(2):141-7.
2. Gibon E, Courpied JP, Hamadouche M. Total joint replacement and blood loss: what is the best equation? *International orthopaedics*. 2013 Apr 1;37(4):735-9.

Conflict of Interest: None Declared