Letter to the Editor

Comment on “Comparison of systemic inflammatory responses of proximal femoral nail versus dynamic hip screw after treatment of patients with pertrochanteric fractures: A prospective comparative study”

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Dear editors,

We read the article by Grezda et al1 about systematic inflammatory responses of surgeries in pertrochanteric fractures. It was reported that the application of the proximal femoral nail (PFN) resulted in a significantly smaller increase of interleukin-6 (IL-6) and creatine kinase (CK) from baseline to 24 hours postoperatively compared to dynamic hip screw (DHS), but not in C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR). We applaud their achievement. However, there was no statement on blood loss and perioperative blood management strategies in the article. Excessive blood loss might call for the implementation of blood management strategies, for example, tranexamic acid, which is widely used in orthopedic surgeries and might cause a change in postoperative inflammatory responses. Postoperative CRP, IL-6, and ESR were reported to be significantly lower with an additional dose of tranexamic acid in total knee arthroplasty2, 3 and total hip arthroplasty4. An additional dose of tranexamic acid in total knee arthroplasty might have resulted from its inhibition of plasminogen activation5. An extra anti-inflammatory effect from tranexamic acid might have resulted from its inhibition of plasminogen, which binds to various inflammatory cells including monocytes, macrophages, and neutrophils.

Author’s response

We would like to thank you for your interest in our recent publication in AOTT entitled "Comparison of systemic inflammatory responses of proximal femoral nail versus dynamic hip screw after treatment of patients with pertrochanteric fractures: A prospective comparative study"1 and valuable comments on our study and related studies. The comments bring out an important point such as perioperative blood loss management, which was not explicitly treated in our manuscript and we believe that it brings additional value to our study.

First, we didn’t cover in our manuscript the blood loss as this we believed was not to be strongly related to the main aim of the manuscript. However, the blood loss was counted in the patients by analysing the hemoglobin levels (g/dL) preoperatively and in POD1. We found no statistical difference between patients treated with PFN vs DHS in preoperative period (12.1 ± 1.2 vs 12.1 ± 0.9, respectively P = 0.96) neither postoperatively (9.1 ± 1.4 vs 9.4 ± 1.2, respectively P = 0.46).

Second, as mentioned in the methods of our original manuscript1, the patients that were at risk of perioperative significant blood loss were excluded from the study and this was achieved by excluding the patients with pre-existing coagulatory disorders and the

References

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patients that close reduction was not achieved under image intensifier. Therefore tranexamic acid administration was not in the protocol of our study as it was not anticipated by surgeons a massive blood loss in the patients with specific features as described in our study.

Third, we agree that tranexamic acid is emerging as one of the most important factors in strategies of blood loss management and it might affect the levels of systemic inflammatory response but it should be noted that the studies cited in the letter to editor have suggested the multiple doses of tranexamic acid might achieve that effect and also none of the cited articles were performed in trauma patients.

References

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