

Risk Factors for Blood Loss Following Total Knee Arthroplasty: How Far is Left to Go?

Mansour Abolghasemian^{1,*}

¹Bone and Joint Reconstruction Research Center, Shafa Orthopedic Hospital, Iran University Of Medical Sciences, Tehran, IR Iran

*Corresponding author: Mansour Abolghasemian, Bone and Joint Reconstruction Research Center, Shafa Orthopedic Hospital, Iran University Of Medical Sciences, Tehran, IR Iran. Tel: +98-2133542007, Fax: +98-2133542020, E-mail: mabolghasemian@gmail.com

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1. Introduction

Summary of "Risk Factors for Blood Loss Following Total Knee Arthroplasty" by Moghtadaei and Shahoseini (1).

2. Summary

The authors have reported on the prospective measurements of intra- and post-operative blood loss of 96 total knee arthroplasty cases and have analyzed the relationship between these values and demographical factors of the series. Mean intraoperative blood loss and postoperative drainage were determined to be 147.1 ± 97.4 mL and 494.4 ± 188.1 mL, respectively. Male and obese patients had significantly higher intraoperative blood loss, whereas male sex and older age were associated with a greater drop in hemoglobin (Hb), on the first postoperative day. No predictors of the need for transfusion were found.

3. Discussion

Although there are numerous studies of the role of patient and surgical factors on the amount of bone loss in TKA, they are not uniform in their conclusions (2, 3). This has been commented by the authors. The prospective nature of this study makes it more reliable. However, there are several limitations. The probable perioperative use of antifibrinolytic agents (i.e. tranexamic acid) has not been commented. This would have important implications on the findings. The Hb measurements have not been used in the blood loss calculations and have been reported as separate values. The amount of transfusion has not been considered for each individual. This has partly caused the inability to interpret the changes in Hb after the first day and has confounded the statistical evaluation of factors correlated with Hb changes.

The reported average amount of whole blood loss, intra- and post-operative, in this study is of 642 mL ($147.1 + 494.4$). This is a considerably lesser amount than reported in literature. It is now evident that the amount

of blood loss during a surgery is not confined to intra-operative estimations and postoperative drainage, as the most significant part of bleeding is hidden blood that distributes to local tissues (4, 5). Park et al. (6) reported a mean total blood loss of 2181.4 mL for primary total knee arthroplasty. Measurements had been performed using a previously validated formula that is now being used as standard practice for measuring blood loss, due to surgical procedures (7). This was also mentioned by the authors of the present study and its usage for calculations would be quite beneficial.

In summary, this study was valuable as it has added evidence to our perception of the risk factors of blood loss during total knee arthroplasty. However, it is necessary to further investigate to reach a perfect understanding of the process.

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