

# Tranexamic acid and postoperative cell-trans autotransfusion system in patients underwent total Knee replacement – analysis of one year

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## Background and Goal of Study

Tranexamic acid (TA) and postoperative cell-trans autotransfusion system (CTS) are blood-saving strategies widely used in total knee arthroplasty (TKA). (1)

This study aims to analyse the impact of these two strategies in reducing the haemoglobin (Hb) drop in patients underwent TKA.

## Materials and Methods

An observational retrospective study was carried out by analysing the clinical data of all patients who underwent TKA in our hospital during the year 2015.

Demographic, transfusion and complication data were collected. In our analysis patients were divided in four groups: 1- received CTS; 2 - TA IV was administered before turning up the tourniquet and before lowering it; 3- received both the techniques; 4- none of the techniques were used. We compared the haemoglobin (Hb) drop in the four groups by analysing the Hb values before and 24h after surgery.

Statistical analysis was performed using SPSSv20.0. The tests used were ANOVA, Chi-square with Monte Carlo correction, Kruskal-Wallis and Bonferroni.

Overall, 103 patients were included, 34 males (33%) and 69 females (67%) with an average age of 70,4±6,4 years.

There were no significant differences in gender, age, ASA physical status classification, surgery duration or preoperative Hb, platelet count or INR in the four groups (data not shown).

## Results and Discussion

Group (G)	Mean Hb drop (g/dL)
G1 - CTS (n= 31)	2,15±0,85
G2 - TA (n=51)	2,15±0,77
G3 - CTS+TA (n=7)	2,23±0,59
G4 - No CTS/ TA (n=14)	2,96 ±1,09

Table 1: Mean Hb drop (g/dL) in each group

There was a statistically significant difference ( $p=0,014$ ) in Hb drop between patients who received TA (group 2) or CTS (group 1) and those who did not (group 4).

When compared to patients who received CTS (group 1) or TA (group 2), patients who received both techniques (group 3) showed no significant difference in Hb drop.

There was no statistically significant difference ( $p > 0.05$ ) in Hb drop between using CTS (group 1) versus using TA (group 2).

Our series showed an overall complications rate of 17,5% and no thromboembolic events.

## Conclusions

In our population both TA and CTS lowered the Hg drop when compared to the lack of use of those strategies, but we did not find a statistically significant difference between them.

There was no evidence of thrombotic complications with TA during hospitalization.