Preoperative fibrinogen: a predictor for intraoperative blood transfusion during liver transplantation?

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INTRODUCTION

Fibrinogen is a protein with a key role in the coagulation cascade, and thus a potential biomarker for bleeding. However, its use to predict the risk of bleeding during liver transplantation is still controversial.

We investigated the relationship between preoperative fibrinogen levels and the need of blood transfusion during orthotopic liver transplantation (OLT).

MATERIAL AND METHODS

- 266 patients undergoing OLT between January 2006 and December 2015 were included in a retrospective study.
- We analyzed the difference in red blood cells (RBC) transfusion requirements between two groups: fibrinogen levels < 200 mg/dL vs. Fibrinogen levels $\geq$ 200 mg/dL.
- The primary endpoint was the percentage of patients who received at least one RBC transfusion during surgery.
- We made a raw analysis of the difference between both groups using the chi-square test. After, a binary logistic regression analysis was done to assess the real relationship between preoperative fibrinogen levels and blood transfusion requirements in our sample.
- The criteria for transfusion were: RBC if Hb < 8 g/dL, platelets if platelet count < 50,000/mL, and fresh frozen plasma if INR > 2.

RESULTS

The total final analysis was performed with 251 patients.

In the raw analysis the difference between both groups was statistically significant regarding the primary endpoint.

In the cohort of patients with low fibrinogen levels, 86.7% received at least one RBC transfusion and in the other group 67.1% (OR 3.2; CI 1.7-6.1; $p < 0.001$). In the univariate analysis, there were some imbalances between groups, so we conducted a multivariate analysis adjusting by those confounding factors (gender, preoperative urea level, preoperative INR and length of surgery).

In the logistic regression analysis, preoperative fibrinogen level < 200 mg/dL was not a significant predictor for RBC transfusion during OLT (OR 1.09; CI 0.49-2.62; $p = 0.84$).

CONCLUSION

Our data suggests that low preoperative fibrinogen levels (once adjusted by gender, preoperative urea, preoperative INR and length of surgery) **does not predict** the need for RBC transfusion.

References:

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