WHEN DO WE USE BLOOD PRODUCTS FOR COAGULATION MANAGEMENT AFTER LIVER TRANSPLANTATION

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INTRODUCTION.

End stage liver disease is associated with severe coagulation impairment, and optimal coagulation management remains one of the greatest challenges in liver transplantation. Recently restricted transfusion strategy become common in many transplant centers, this allowed to avoid many unnecessary transfusions (1). But some patients after liver transplantation still need active replacement of coagulation factors due number of reasons (2).

AIM OF STUDY.

To specify conditions when fresh frozen plasma (FFP) or cryoprecipitate transfusion are used in patients after liver transplantation.

METHODS.

After local Ethic Committee approval we studied retrospectively 87 adult patients with liver cirrhosis, aged 38.2 ± 17.3 (24-65) yo, weight 65.8 ± 7.9 (48-78) kg, MELD score 21.4 ± 4.3 underwent liver transplantation. We studied activated partial prothrombine time (APPT), prothrombine time (PT), international normalized ratio (INR), level of serum fibrinogen A (FGA), platelets count (PLT), thromboelastography (K; R; α angle; MA; LY30), volume of FFP and cryoprecipitate transfused postoperatively.

RESULTS AND DISCUSSION.

12 (13.8%) of patients with MELD score 24.8 ± 2.7 had severe coagulopathy and 8 (66.6%) of them had active bleeding, all of these patients were transfused FFP and/or cryoprecipitate. Other 75 patients (86.2%) with MELD score 18.8 ± 7.1 presented mild coagulopathy and no need of FFP and/or cryoprecipitate transfusion after liver transplantation.

The coagulation tests in both groups of patients showed significant prolongation of APPT and PT, decreased of FGA level, increased of INR and thromboelastography showed significant hypocoagulability.

Mean volume of transfused FFP postoperatively was 3222.5 ± 3274.8 (690-8650) ml.

Transfused cryoprecipitate volume was 80 ± 193.7 (0-600) ml.

FFP and cryoprecipitate was transfused within 72h after surgery.

Table 1. Coagulation data in transfused and non-transfused patients.

	Transfused group	Non-transfused group
APPT (sec)	102.5 ± 57.2	$62.8 \pm 20.7^*$
PI (%)	19.6 ± 10.8	$32.2 \pm 16.4^*$
INR	5.7 ± 4.2	$2.7 \pm 0.8^*$
FGA (g/l)	0.7 ± 1.0	0.8 ± 1.1
R (min)	9.2 ± 1.8	8.7 ± 2.5
K (min)	12.1 ± 4.6	$5.8 \pm 3.6^*$
Alpha angle	31.5 ± 13.0	$48.2 \pm 16.9^*$
MA (mm)	30.9 ± 8.0	36.3 ± 15.9

* - $p < 0.05$ between groups

Figure 1-4. Coagulation status in transfused and non-transfused patients

CONCLUSION.

13.8% of patients after liver transplantation presented severe coagulopathy and 66.6% of them had active bleeding.

In case of active bleeding and severe coagulopathy (APPT 102 sec, PT 19.6%, INR 5.7, R 9.2 min, K 12.1 min, α angle 31.5 degree) FFP and/or cryoprecipitate might be transfused.

REFERENCES.

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