ABSTRACT

TITLE OF THE ABSTRACT: Stability of hemostatic potential of thawed plasma on storage at 2-6°C for 5 days.

DEPARTMENT: TRANSFUSION MEDICINE AND IMMUNOHAEMATOLOGY

NAME OF THE CANDIDATE: A. Srivalli

DEGREE AND SUBJECT: M.D. TRANSFUSION MEDICINE AND IMMUNOHAEMATOLOGY

NAME OF THE GUIDE: Dr. Sukesh C. Nair, MBBS, DCP, MD, FRCPA (HAEM)

Background:

Transfusion of fresh frozen plasma is still an important measure in emergency medicine to prevent disseminated intravascular coagulation after severe blood loss, but thawing procedures can delay its availability. On the other hand, the wastage of plasma, once thawed and not transfused within defined period, represents an inefficient handling of economic resources. To reduce wastage, we investigated the stability of hemostatic potential of thawed plasma when stored at 2-6°C.

Aim:

To assess the stability of hemostatic potential of thawed plasma when stored at 2-6°C for 5 days using APTT, Factors V, VII and VIII and thrombin generation testing.
Materials and methods:

19 plasma units included in this study were separated from blood collected from donor and frozen overnight and thawed at 35.8°C using plasma thawer. One set of plasma aliquots were stored at -70°C and the other set of aliquots from each bag were stored as thawed plasma at 2-6°C for 5 days. Factor V, VII, VIII levels, activated partial thromboplastin time and thrombin generation testing were done on first, third and fifth day of storage.

Results:

The mean levels of Factor V, VII and VIII of frozen plasma on day 5 of storage were 73.31%, 52.12% and 62.23% respectively. The mean levels of Factor V, VII and VIII of thawed plasma on day 5 of storage were 67.2%, 50.69% and 56.97% respectively. The mean change in values of TGT variables were calculated and was comparable between both the groups on day 5 of storage.

Conclusion:

This study highlights that thawed plasma can be stored at 2-6°C for 5 days which could be used to restore haemostasis in bleeding patients as it has adequate thrombin generation capacity.

KEY WORDS:
Fresh frozen plasma, thawed plasma, trauma induced coagulopathy, Extended life plasma, Massive transfusion.