



Oklahoma Blood Institute
TRANSFUSION TRIBUNE

January, 2008

Jean E. Forsberg, M.D. James Smith, M.D., Ph.D.

Sylvan N. Goldman Center
A Not-for-Profit Regional Blood Center
www.obi.org

24-Hour Plasma

On December 28, 2007, OBI began manufacturing a new component—24-Hour Plasma—which will essentially replace whole blood derived fresh frozen plasma (FFP.) Limited amounts of apheresis fresh frozen plasma (AFFF) will be available for use in therapeutic plasma exchanges and special circumstances when FFP is needed.

How is 24-Hour Plasma Different from FFP?

24-Hour Plasma is prepared from whole blood and frozen within 24 hours of collection. Whole blood FFP is separated and frozen within eight hours of collection. The freezer life of both components is one year stored at -18°C . The volume of both components is approximately 250 ml. Several studies have evaluated the activity and amount of clotting factors in 24-Hour Plasma vs. FFP. There are slight differences, mainly in Factor VIII. However, FFP is not the product of choice for treating hemophiliac A patients. For nearly all clinical indications, 24-Hour Plasma has been found to be an adequate source of clotting factors and plasma proteins and can be substituted for FFP and/or AFFF.

Why is OBI Introducing This New Product?

OBI is making this change (along with the majority of blood suppliers in the United States) in order to implement preventative measures for a type of transfusion reaction called Transfusion Related Acute Lung Injury (TRALI). OBI is switching to predominantly male donors for our transfusable plasma products. The switch was needed to allow enough male plasma to be available since OBI collects all over the state and get-

ting blood back and frozen within 8 hrs was difficult. Plasma collected from female donors will be sent for fractionation and further manufacture into IVIG, Albumin, or factor concentrates. In order for OBI to have enough male plasma to meet our hospital usage, the decision to switch to 24-Hour Plasma was made after medical evaluation determined it was comparable to FFP.

How Can 24-Hour Plasma be Used?

It can be used essentially the same as FFP. Common indications would include patients with a coagulopathy secondary to liver disease, or dilutional change due to massive blood loss. Another use would be for the immediate reversal of warfarin when emergency surgery is needed. It can also be used when a patient has a factor deficiency and there is not a factor concentrate available (II, V, X, XI).

Dosage

10-20 ml/Kg would be a typical dose and would increase the level of coagulation factors by 20%.

References

Smith, JF, Ness PM, et al. *Retention of Coagulation Factors in Plasma Frozen after Extended Holding at $1-6^{\circ}\text{C}$* . Vox Sang 200;78:28-30.

O'Neill EM, Rowley J, Hansson-Wicher M et al. *Effect of 24-hour whole-blood storage on plasma clotting factors*. Transfusion 1999;39:488-491.

AABB, *Blood Transfusion Therapy A Physician's Handbook* 8th Edition. 2005.