PERFORMANCE OF CRYOSEAL®FS IN LIVER SURGERY.

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Introduction: Fibrin sealants are used in surgery as a means of controlling microvascular bleeding. The sealants are usually fractionated from a large pool of plasma and contain fibrinogen, thrombin and bovine aprotinin. The CryoSeal FS System (THERMOGENESIS CORP.) is an automated method using a single unit of plasma to prepare both cryoprecipitate (concentrate of fibrinogen, fibronectin, FXIII and FVIII) and thrombin, which when mixed together will form a fibrin sealant (FS). The purpose of this study was to determine the hemostatic property of the FS prepared by the CryoSeal FS System in patients undergoing liver surgery.

Materials and Methods: Patients (n=8) undergoing major hepatic resections were studied. All patients underwent plasmapheresis pre-surgery and donated 600 ml plasma. An autologous FS was manufactured using the CryoSeal FS System. The FS was frozen at -18°C until use. Once thawed, the FS was sprayed onto the liver surface. The primary endpoint was time to hemostasis from the moment the sealant was applied. Secondary endpoints were overall blood loss and blood loss during parenchymal transection. The weight of the resected liver and surface area of incision were also recorded.

Results: Hemostasis of the liver surface was achieved in 3.6±0.8 minutes (mean±sd). The overall blood loss was 567±225 ml and 104±98ml during parenchymal transection. No additional transfusions were required. The amount of FS used during surgery was 12.3±3.2 ml. The weight of the resected livers was 676±474g and the incision surface area 195.4±50cm^2.

Conclusion: Fibrin Sealant manufactured using the CryoSeal FS System controlled microvascular bleeding in eight patients undergoing liver resection in 3.6 minutes. A prospective randomized study is underway.