FACTORS ASSOCIATED WITH BLOOD PRODUCT USE IN LIVER TRANSPLANTATION USING PIGGYBACK HEPATECTOMY

MM Nobari, RS Mangus, S Kinsella, JA Fridell, RM Vianna, RJ Nobari, A Tector, Indiana University, School of Medicine, Indianapolis, IN.

Background: Orthotopic liver transplantation (OLT) may be associated with massive blood loss related to the coexistence of varices, thrombocytopenia or other coagulopathies, or portal hypertension. Piggyback hepatectomy (PGB) is a surgical technique increasingly utilized in OLT to avoid veno-venous bypass and vena cava clamping. This study evaluates the factors associated with blood product requirement with the use of this surgical approach. Methods: We retrospectively reviewed the anesthesia pre-operative and operative notes, and laboratory values, for all adult, cadaveric OLTs over a 42 month period (n=527). Ninety-eight percent of the transplants were performed using a PGB approach with no use of veno-venous bypass. A direct entry multivariate regression analyses was performed. Results: Overall median blood loss was 1000cc with median transfusion rate being: PRBCs 3 units, FFP 7 units, and platelets 6 units. Multivariate regression found significant predictors of PRBC transfusion to be male gender, starting Hgb, MELD, age, starting platelets, and history of major surgery. These results correspond with a mean 1.0 additional unit for males, an additional 0.7 unit for each g/dL Hgb below 11.8, an additional 1.0 unit for each 5 MELD points above 18.1, an additional 0.5 unit for each 10 years age above 52, an additional 0.5 units for each 50,000 platelets below 100,000, and an additional 2.2 units for major surgery versus no surgery. Conclusions: These results demonstrate that, similar to previous reports using venovenous bypass or clamping of the vena cava, certain factors predictably increase the likelihood that blood products will be administered during OLT. Our data also indicate that overall, PGB technique, typically requiring less warm ischemia time, may represent a safe and cheaper alternative to the conventional approach.