The perioperative course of factor XIII and associated chest tube drainage in newborn and infants undergoing cardiac surgery.

Perioperative acquired factor XIII deficiency has been looked upon as a potential cause of postoperative bleeding in adult cardiac surgery. Forty-four infants were prospectively studied for the time course of factor XIII in plasma and the effect on chest tube drainage (CTD) and transfusion requirements in the first 24 h after surgery. A reconstituted blood prime (RBP) with fresh-frozen plasma (FFP) and packed red blood cells (PRBC) was used. Samples were taken at baseline, after cardiopulmonary bypass and upon arrival in the ICU. Differences in blood loss and transfusion requirements based on a cutoff value of 70% factor XIII activity at the time of ICU admission were also calculated. Baseline factor XIII activity was 79%, decreased to 71% after CPB (P = 0.102) and increased back up to 77% at ICU arrival (P = 0.708). There was no significant correlation between factor XIII, CTD, age, cyanosis, platelet count, and transfusion requirements at any time point. Only preoperative fibrinogen levels correlated significantly with factor XIII activity. Perioperative blood transfusions (PRBC P = 0.712, FFP P = 0.909, platelets P = 0.807) and chest tube losses (P = 0.424 at 6 h and P = 0.215 at 24 h) were not significantly different above or below a 70% factor XIII activity at ICU arrival. Factor XIII activity in infants
with congenital heart defects is within the lower range of normal adults, independent of patient's age and the presence of cyanosis. Reconstituted blood prime maintains factor XIII activity at sufficient levels during pediatric cardiac surgery. We could not detect a correlation between FXIII and CTD.