Tranexamic acid versus \(\alpha\)-aminocaproic acid: efficacy and safety in paediatric cardiac surgery.

Abstract:

Objective: Tranexamic acid (TXA) and \(\alpha\)-aminocaproic acid (EACA) are used for antifibrinolytic therapy in cardiac surgery, although data directly comparing their blood sparing effect and their side effects, especially in paediatric cardiac surgical patients, are still missing. Methods: We analysed perioperative data of 234 paediatric patients weighing less than 20kg undergoing cardiac surgery. In a 5-month period, all patients (n=114) received TXA (group TXA). During a second 5-month period, all patients (n=120) were treated with EACA (group EACA). Primary outcome was blood loss at 24h postoperatively; secondary outcome criteria were transfusion requirement, rate of revision for bleeding, postoperative complications and in-hospital mortality. Results: All descriptive and intra-operative parameters were well comparable. There was no evidence for a difference in blood loss at 24h postoperatively (TXA 21mlkg\(^{-1}\) (14-38) (median (interquartile range)) vs EACA 29mlkg\(^{-1}\) (14-40), p=0.242), rate of re-operation for bleeding (TXA 9.6% vs EACA 8.3%, p=0.725) and transfusion of blood products. The incidence of postoperative complications such as seizures (TXA 3.5% vs EACA 0.8%, p=0.203) and other neurological complications (TXA 2.6% vs EACA 1.7%, p=0.677), renal injury (TXA 9.6% vs EACA 13.3%, p=0.378), renal failure (TXA 1.8% vs EACA 4.2%, p=0.447), low cardiac output
syndrome (TXA 12.3% vs EACA 10.8%, p=0.729), and vascular thrombosis (TXA 4.4% vs EACA 5.0%, p=0.824), as well as the in-hospital mortality (TXA 2.6% vs EACA 3.3%, p>0.999) did not show any statistically significant difference. Conclusions: TXA and EACA are well comparable in their effect on perioperative blood loss as well as in major clinical outcome criteria. Although the fourfold risk for seizures using TXA was not significant, we currently use EACA in paediatric cardiac surgery.