

Tranexamic acid for major spinal surgery in children.

A retrospective study.

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Introduction: Paediatric patients who undergo posterior spinal fusion surgery to correct scoliosis often require multiple blood transfusions. Tranexamic acid is a synthetic antifibrinolytic drug that reduces transfusion requirements in scoliosis surgery (1),(2),(3).

Methods: To evaluate the efficacy of prophylactic tranexamic acid (TA) (initial dose of 10mg/kg and infusion of 1mg.kg(-1).h(-1)) in reducing perioperative blood transfusion requirements, we reviewed patients files and compared the amount of blood lost and blood transfused in the perioperative period of 12 patients (54.5%) that received TA and 10 patients (45.5%) who did not received TA. T-Student test was applied.

	N	Min.	Max.	Average	Standart Deviation
Age	22	4	17	10,41	5,105
Weight	22	13	80	34,64	19,942
TBV	22	910	5200	2307,50	1258,923
Blood lost	22	110	1550	677,27	511,340
% TBV lost	22	7,1	61,5	27,373	13,8840
Transfused blood	22	0	850	346,14	267,341

Table nº1: Sample characterization.

Results: The average difference of blood losses (2,67 +/- 6,06ml) and blood transfused (212,9 +/-

101,1ml) between the two groups was not statistically significant (p>0.05). No thrombotic complications were detected in either group.

	Tranex. Acid	N	Average	Strandart Deviation
% TBV lost	Yes	12	28,583	13,7566
	No	10	25,920	14,6353
Transfused blood	Yes	12	442,92	308,607
	No	10	230,00	151,291

Table nº2: T-Student test for independent samples.

	p Value	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
				Lower	Upper
% TBV lost	0,665	2,6633	6,0624	-9,9827	15,3093
Transfused blood	0,051	212,917	101,121	-,847	426,681

Table nº3: T-Student test for equality of means.

Discussion: Results of the current study showed that prophylactic low dose of TA did not have a significant effect in the management of intraoperative blood loss and transfusion requirements in children undergoing scoliosis surgery. It is important to emphasize that our study is retrospective and that the size of the sample is small. Further studies are needed to evaluate the efficacy and safety of TA on paediatric scoliosis surgery.

References: (1) Perioperative blood transfusion requirements in pediatric scoliosis surgery: the efficacy of tranexamic acid. Grant JA, J Pediatr Orthop. 2009 Apr-May;29(3):300-4. (2)Tranexamic acid reduces intraoperative blood loss in pediatric patients undergoing scoliosis surgery. Sethna NF, Anesthesiology. 2005 Apr;102(4):727-32. (3)A randomized trial of tranexamic acid to reduce blood transfusion for scoliosis surgery. Neilipovitz DT, Anesth Analg. 2001 Jul;93(1):82-7.