## **PEDIATRIC PATIENT BLOOD MANAGEMENT PROGRAM IN SCOLIOSIS SURGERY: NET CLINICAL BENEFITS 19TH ANNUAL**



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## INTRODUCTION

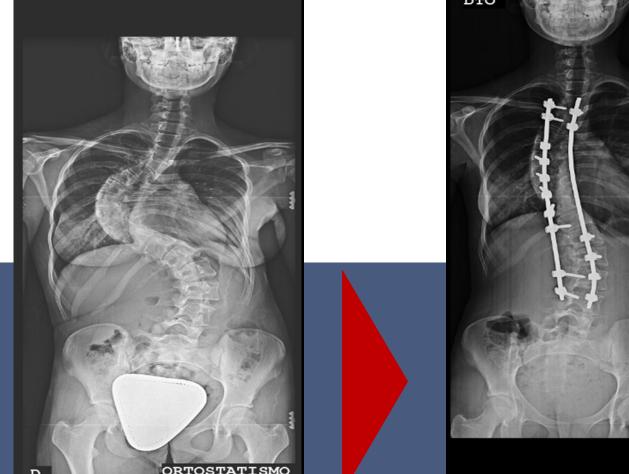
Scoliosis affects 2-4% of children; The aim of Pediatric Scoliosis Surgery (PSS) is to avoid worsening of respiratory and cardiac function; This surgery is associated with high rates of packed red blood cells (RBC) transfusion (bleeding risk is greater in neuromuscular etiology); Patient Blood Management (PBM) programs have been introduced to minimize the use of blood transfusion; In January 2016, at our institution, a Pediatric PBM program was adopted in pediatric patients undergoing PSS.

AIM of our study: Evaluate the efficiency of our PBM program.



	2013-2015	Begini	ng of 2016		2016-2017
	<b>Before implementation</b> of PBM (Control Group) No. of patients 59	Introduction of PBM in PSS (Multidisciplinary team)		<b>After implementation</b> of PBM No. of patients 52	
	Preoperative (≈1 month before surgery)	Intrac	operative		Postoperative
	Restrictive Transfusion Strategy Packed RBC Transfusion if Hb < 7 g/dL				
_	<ul> <li>Immunohemotherapy appointement:</li> <li>Evaluation of Bleeding/ Thrombotic risk;</li> <li>Screening for anemia and/or ferropenia OPTIMIZATION of Hb if: (9 g/dL ≤ Hb ≤ 12 g/dL) OR 12 g/dL &lt; Hb ≤ 15 g/dL + Ferritin (&lt;60) + Transferrin Saturation (TS) (&lt;20%) </li> <li>Screening of Hemostasis: <ul> <li>Platelet Function (Agonists used: ADP; TRAP; Ristocetin) → Multiplate analyzer<sup>®</sup></li> <li>aPTT; PT; Fibrinogen → Coagulometric assays</li> </ul> </li> </ul>	<ul> <li>Intraoperative infusions:</li> <li>Tranexamic Acid : <ul> <li>Bolus 20 mg/Kg bolus (prop</li> <li>Continuous Infusion (IV) 10 surgery.</li> </ul> </li> <li>Prophylaxis or therapy of haemor <ul> <li>Desmopressin (DDAVP) – 0.3 μg/</li> <li>30 min before surgery if plat</li> </ul> </li> <li>At least 2 Agonists Destriction (Fib.) and ROTEM test</li> <li>20-30 mg/Kg if Fib. &lt; 2 g/dL</li> </ul>	mg/Kg per hour during rhagic diatheses: /Kg : elet dysfunction; creased during surgery:	hours);	n: obin – after surgery ( during the first 24 of stay at Pediatric Intensive Care Unit (PICU)
	RESULTSDOLATIONNo. of patients=59 (dian Age ≈ 13.5 year)Image: Diameter of the patient of the pa	<b>2016-2017</b> No. of patients=52 Median Age $\approx$ 12.5 years $\mathcal{J} \cap \mathcal{Q} \cap \mathcal{A}$ $\mathcal{I}$ $\mathcal{I}$ $\mathcal{Q} \cap \mathcal{A}$ $\mathcal{I}$ <td>7%</td> <td>• • • • • • •</br></td> <td><ul> <li>am</li> <li>bn suplementation</li> <li>No. of patients 40 (oral intake or IV);</li> <li>Mean dose (oral intake) = 4 mg/Kg;</li> <li>Mean dose (IV administration - Ferric carboxymaltose and iron sucrose)=20.08 mg/Kg and 9.3 mg/Kg;</li> <li>bpairment of Platelet Function</li> <li>No. of patients: 8 (DDAVP prophylaxis);</li> <li>aministration of Factor Concentrates</li> <li>No. of patients: 1 – Administration of coagulation FVII concentrate.</li> </ul></td>	7%	• • • 	<ul> <li>am</li> <li>bn suplementation</li> <li>No. of patients 40 (oral intake or IV);</li> <li>Mean dose (oral intake) = 4 mg/Kg;</li> <li>Mean dose (IV administration - Ferric carboxymaltose and iron sucrose)=20.08 mg/Kg and 9.3 mg/Kg;</li> <li>bpairment of Platelet Function</li> <li>No. of patients: 8 (DDAVP prophylaxis);</li> <li>aministration of Factor Concentrates</li> <li>No. of patients: 1 – Administration of coagulation FVII concentrate.</li> </ul>
	Preoperative Hb (r		13.4		15/6/2016 12:55:09 16/1/2017 12:51:00
	Postoperative Hb ( Number of packed R (media	BCs transfused 2	10.0		
	Length of Pediatric Unit admission (m CONCLUSIONS	3.06	1.85		

## CONCLUSIONS



The median of packed RBCs consumed in the perioperative period decreased from two (2013-2015) to zero (2016-2017); The length of stay at PICU followed the same pattern, prior to PBM the patients had a median stay of 3 days at PICU, after PBM implementation they only spend 1.85 days at the unit;

The implementation of the PBM program allowed for a substantial decrease of packed RBC transfusion and length of PICU admission. 

**Clinical Case** Female Patient; 18 years old Idiopathic Scoliosis Submitted to SS in 2016

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