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Is transfusion an independent predictive risk factor of postoperative outcome in Pediatric Orthopedic surgical patients? A retrospective study

Background: Intraoperative and postoperative Morbi-mortality factors are multiple in pediatric patients. Studies in pediatric cardiac surgery and intensive care patients have identified transfusion as one independent factor among others.

Objectives: To investigate whether transfusion was an independent risk factor of postoperative outcome in pediatric orthopedic surgical patients.

Design: Retrospective observational descriptive pediatric cohort study.

Setting: Monocentric pediatric tertiary center, Necker University Sick Children's Hospital Paris, from 1 January 2014 to 17 Mai 2017.

Patients: 195 patients with a median age of 144 months [106.5-178.5] were included. Inclusion criteria was the presence or the absence of transfusion in the Intraoperative period in orthopedic surgery. Exclusion criterion was transfusion in the postoperative period until discharge from hospital. Main outcome measures: Primary outcome was morbidity in transfused and nontransfused patients. Morbidity was assessed by deaths, complications and repeat surgery occurring intraoperatively or postoperatively during the entire hospitalization. Secondary outcome was assessed by length of stay in the intensive care unit, in the hospitalization ward, total length of stay in hospital and duration of mechanical ventilation.

Statistical analysis: Multiple logistic and log-linear regressions were used to assess for independent predictors of outcome.

Results: ASA score [odds ratio 2.73, p-value <0.01] and transfusion [odds ratio 1.98, p-value <0.01] were independent predictive risk factors for complications. Emergency surgery [odds ratio 7.62, p-value<0.01] was the independent predictive risk factor for repeat surgery. ASA score, transfusion and emergency surgery [p-value<0.01] were independent predictive risk factors for length of stay in the intensive care unit and length of stay in hospital. ASA score, transfusion and age [p-value<0.01] were independent predictive risk factors for length of mechanical ventilation. There was no mortality in this cohort.

Conclusions: Transfusion was an independent predictive risk factor among others for postoperative outcome. Specific measures aiming to reduce exposure to blood products in potential hemorrhagic surgery like scoliosis can improve outcome.

Speaker Biography

Claudine Kumba graduated as a Medical Doctor in 2001 and completed her specialization in Anesthesiology in 2006 at the Free University of Brussels (ULB, Université Libre de Bruxelles). She has a Paediatric Anaesthesia specialisation graduation since 2010 from the University of Aix-Marseille, Marseille, France. She has a Critical Care Medicine specialization graduation since 2014 from the University of Montpellier 1, Montpellier, France. She is a paediatric anaesthesiologist in Necker Sick Children's University Hospital, in Paris, France. She has 12 publications and 17 citations. She is a member of the European Society of Paediatric Anaesthesiology (ESPA), the French Society of Anaesthesia and Critical Care (SFAR, Société Française d'Anesthésie-Réanimation) and the French Association for Paediatric Anaesthesiolgists and Intensivists) (ADARPEF, Association d'Anesthésistes et Réanimateurs Pédiatriques d'Expression Française) and the Belgian Association for Paediatric Anaesthesiology (BAPA).

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