



INTISARI

Latar belakang: *Severe critical event* atau kejadian cedera yang tidak diinginkan dan dapat dicegah pada pemberian anestesi yang memiliki angka insidensi lebih tinggi pada anak-anak dibandingkan orang dewasa. Hal ini berkaitan dengan perbedaan anatomi, fisiologi, farmakologi, emosional dan sosial pasien anak yang belum matang. Selain insidensinya yang lebih tinggi, mortalitas terkait *severe critical event* pada pasien anak juga lebih tinggi dibandingkan pasien dewasa. Secara umum, *severe critical event* pada pasien anak dikelompokkan menjadi kejadian sulit jalan napas, kardiovaskular, dan kelalaian tenaga medis. Berdasarkan waktunya, kejadian-kejadian tersebut dapat terjadi sebelum anestesi, selama anestesi, serta pasca anestesi dengan persentase insidensi yang berbeda satu sama lain.

Tujuan: Untuk mengetahui pengaruh antara *severe critical event* perianestesi yang meliputi bronkospasme, laringospasme, aspirasi pulmonar, stridor, croup, desaturasi, hipotensi, aritmia, perdarahan, henti jantung, anafilaksis, kerusakan saraf, *delayed emergence* dan *medication errors* terhadap mortalitas pada pasien pediatri.

Metode: Penelitian ini menggunakan desain *prospective cohort*. Subjek penelitian adalah pasien pediatri yang menerima tindakan anestesi baik untuk tindakan bedah maupun non bedah di RSUP Dr. Sardjito dengan teknik *consecutive sampling*. Kriteria inklusi penelitian ini yaitu pasien anak <18 tahun yang dilakukan pembiusan atau sedasi di RSUP Dr. Sardjito Yogyakarta dan kriteria eksklusi yaitu pasien yang tidak memiliki data lengkap. Adapun variabel yang diteliti yaitu *severe critical event* perianestesi yang meliputi bronkospasme, laringospasme, aspirasi pulmonar, stridor, croup, desaturasi, hipotensi, aritmia, perdarahan, henti jantung, anafilaksis, kerusakan saraf, *delayed emergence* dan *medication errors* terhadap mortalitas pasien pediatri. Dilakukan analisis statistik untuk mengetahui pengaruh *severe critical event* terhadap mortalitas melalui analisis bivariat *chi square test* dan *mann whitney test* kemudian dilanjutkan analisis multivariat menggunakan regresi logistik pada variabel-variabel yang memiliki nilai $p < 0,25$ pada uji bivariat. Nilai $p < 0,05$ dianggap signifikan secara statistik

Hasil: Dari 425 subjek penelitian didapatkan 70 kejadian *severe critical event* yang terjadi pada 39 pasien, dan tercatat 14 kasus berakhir dengan mortalitas. Analisis multivariat *severe critical event* menunjukkan bahwa laringospasme ($p=0,009$; OR= 14,018; 95% CI= 1,920 – 102,323), henti jantung ($p=0,009$; OR= 43,165; 95% CI= 2,542 – 732,977), dan desaturasi ($p=0,027$; OR= 6,634; 95% CI= 1,228 – 35,550) merupakan *severe critical event* yang memiliki pengaruh signifikan terhadap kejadian mortalitas. Adapun hasil analisis multivariat dengan mempertimbangkan data demografi pasien didapatkan bahwa status ASA >2 ($p=0,016$; OR= 6,056; 95% CI= 1,403-26,139) dan riwayat prematuritas ($p=0,011$; OR= 7,730; 95% CI= 1,607-37,193) secara signifikan berpengaruh terhadap luaran mortalitas pasien.

Kesimpulan: kejadian *severe critical event* laringospasme, henti jantung dan desaturasi berpengaruh terhadap terjadinya mortalitas pada pasien pediatrik yang menjalani pembiusan di RSUP Dr. Sardjito.

Kata kunci: *severe critical event*, anestesi, mortalitas, pediatri

ABSTRACT

Background: *severe critical events or unwanted and preventable incidents associated with anesthesia in pediatrics have a higher incidence rate compared with adults. It could be due to the immature anatomy, physiology, pharmacology, emotional, and social aspects of pediatric patients. In addition to the higher incidence, the mortality rate of severe critical events in pediatric patients is also higher than in adults. In general, severe critical events in pediatric patients include difficult airway, cardiovascular events, and medical negligence. Based on the time of occurrence, those events can happen pre-anesthesia, during anesthesia, or post-anesthesia with different incidence numbers.*

Purpose: *To assess the impact of critical events during peri-anesthesia on the mortality rate of pediatric patients. Such events include bronchospasm, laryngospasm, pulmonary aspiration, stridor, croup, desaturation, hypotension, arrhythmia, hemorrhage, cardiac arrest, anaphylaxis, neuro injury, delayed emergence, and medication errors.*

Methods: *This is a prospective cohort study. All pediatric patients who underwent anesthesia for surgical and non-surgical procedures at RSUP Dr. Sardjito hospital are consecutively included in this study. The inclusion criteria for this study are pediatric patients less than 18 years of age who underwent anesthesia procedures at RSUP Dr. Sardjito hospital. The exclusion criteria are patients who have no complete medical records. The severe critical events included in this study are bronchospasm, laryngospasm, pulmonary aspiration, stridor, croup, desaturation, hypotension, arrhythmia, hemorrhage, cardiac arrest, anaphylaxis, neuro injury, delayed emergence, and medication errors. To statistically assess the relationship between severe critical events and mortality outcomes, bivariate analysis using chi-square and mann whitney test were used. Multivariate analysis was then conducted using logistic regression on the variables that had a p-value of less than 0.25 on the bivariate analysis. A p-value of less than 0.05 indicates statistical significance.*

Result: *From the 425 research participants, 70 severe critical events happened in 39 patients, in which 14 cases resulted in mortality were recorded. The multivariate analysis of severe critical events showed that laryngospasm ($p=0,009$; $OR= 14,018$; $95\%CI= 1,920 - 102,323$), cardiac arrest ($p=0,009$; $OR= 43,165$; $95\%CI= 2,542 - 732,977$) and desaturation ($p=0,027$; $OR= 6,634$; $95\%CI= 1,228 - 35,550$) significantly associated with patient mortality. The multivariate analysis taking into patient's demographic showed that ASA status >2 ($p=0,016$; $OR= 6,056$; $95\%CI= 1,403-26,139$) and prematurity history ($p=0,011$; $OR= 7,730$; $95\%CI= 1,607-37,193$) are shown to be significantly associated with patient mortality.*

Conclusion: *There is a statistically significant relationship between severe critical events of laryngospasm, cardiac arrest and desaturation with the mortality of pediatric patients who undergo anesthesia in RSUP Dr. Sardjito hospital.*

Keyword: *severe critical event, mortality, anesthesia, pediatric*