

PREDIKTOR PEMANJANGAN DURASI PENGGUNAAN VENTILATOR MEKANIK PADA ANAK SAKIT KRITIS NON OPERATIF

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INTISARI

Latar belakang: Pemanjangan durasi ventilator mekanik (VM) telah menjadi tantangan besar di ruang perawatan intensif anak. Pasien yang mengalami pemanjangan durasi VM pada umumnya berada dalam kondisi yang berat. Pasien tersebut diketahui berhubungan dengan risiko morbiditas, mortalitas dan penggunaan sumber daya yang tinggi. Beberapa prediktor kejadian pemanjangan durasi VM telah diteliti sebelumnya, namun menunjukkan hasil inkonsisten.

Tujuan: Menentukan usia <12 bulan, malnutrisi, kelebihan cairan, komorbid, penyakit sistem pernapasan, syok septik, *pediatric acute respiratory distress syndrome* (PARDS), skor PELOD-2, dan gagal organ sebagai prediktor pemanjangan durasi penggunaan VM pada pasien anak sakit kritis non operatif.

Metode: Dilakukan studi kohort retrospektif dengan subyek anak sakit kritis non operatif berusia 1 bulan-18 tahun di ruang perawatan intensif RSUP Dr. Sardjito periode Januari 2019-Desember 2021 yang memenuhi kriteria inklusi dan eksklusi. Sampel diambil secara *total sampling*. Analisis bivariat untuk menghitung nilai p serta analisis multivariat dengan regresi logistik. Hubungan antar variabel dinyatakan dengan *odds ratio* (OR) dan interval kepercayaan 95% dengan tingkat kemaknaan statistik $p < 0,05$.

Hasil: Seratus tiga puluh lima subyek dengan sakit kritis non operatif diikutsertakan, dengan perbandingan laki-laki dan perempuan adalah 1,45:1, dengan kelompok usia paling banyak adalah 1-11 bulan. Median durasi ventilator mekanik adalah 6 (3-10) hari. Angka pemanjangan durasi VM sebesar 50,4%. Pada analisis multivariat didapatkan PARDS (*adjusted* OR=4,69; IK95%=1,68-13,13; $p=0,003$) dan gagal organ (*adjusted* OR=4,29; IK95%=1,81-10,14; $p=0,001$) merupakan prediktor independen kejadian pemanjangan durasi VM pada anak sakit kritis non operatif.

Kesimpulan: PARDS dan gagal organ merupakan prediktor independen kejadian pemanjangan durasi VM pada anak sakit kritis non operatif.

Kata kunci: Rawat intensif, anak, prediktor, pemanjangan durasi ventilator

PREDICTIVE FACTORS OF PROLONGED MECHANICAL VENTILATION IN NON OPERATIVE CRITICALLY ILL CHILDREN

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ABSTRACT

Background: Prolonged mechanical ventilation (PMV) has become an enormous challenge in pediatric intensive care units (PICU) around the world. Patient treated with PMV are generally in poor health. These patients are known as a significant factor that contributes to higher mortality, morbidity and resource utilization. Several predictors of PMV have been investigated previously, but showed inconsistent results.

Objective: To determine age of <12 months, malnutrition, fluid overload, comorbidity, respiratory disease, septic shock, pediatric acute respiratory distress syndrome (PARDS), PELOD-2 score, and organ failure as predictive factors of prolonged MV.

Methods: This was a retrospective cohort study of children aged 1 month–18 years with non operative critically ill children that were admitted for intensive care in Dr. Sardjito Hospital during January 2019 – December 2021. Samples were taken with the total sampling method. Bivariate analysis using chi-square test to calculate p-value and multivariate analysis with logistic regression was conducted. The relationship between variables was presented as odds ratio (OR), 95% confidence intervals (95% CI), and statistical significance levels $p < 0.05$.

Results: One hundred and thirty-five children with non operative critically illness were included. The ratio of female and male was 1.45: 1 and dominated in 1-11 months old. Median length of MV was 6 (3-10) days. The prolonged MV rate was 50,4%. Multivariate analysis showed that PARDS (*adjusted* OR=4,69; 95%CI=1,68-13,13; $p=0,003$) and organ failure (*adjusted* OR=4,29; 95%CI=1,81-10,14; $p=0,001$) were independent predictors of prolonged MV.

Conclusions: PARDS and organ failure were independent predictors of prolonged MV in non operative critically ill children.

Keywords: Critical care, children, predictive factor, prolonged ventilation