

FAKTOR PREDIKTOR KEGAGALAN NASAL *CONTINUOUS POSITIVE AIRWAY PRESSURE* PADA BAYI KURANG BULAN DENGAN DISTRES RESPIRASI

Winda Intan Permatahati, Ekawaty Lutfia Haksari, Amalia Setyati

Departemen Ilmu Kesehatan Anak, Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan, Universitas Gadjah Mada, Yogyakarta Indonesia

INTISARI

Latar belakang: Distres respirasi merupakan penyebab mortalitas dan morbiditas utama pada bayi yang lahir kurang bulan. Insidensi kegagalan nasal CPAP cukup tinggi. Penelitian terkait penggunaan nasal CPAP masih sedikit di Indonesia, dan penelitian ini diharapkan dapat menjadi acuan dalam melakukan tindakan preventif untuk menurunkan angka mortalitas dan morbiditas pada bayi kurang bulan.

Tujuan: Mengkaji faktor prediktor kegagalan nasal CPAP pada bayi kurang bulan dengan distres respirasi.

Metode: Penelitian observasional kohort retrospektif menggunakan data rekam medis bayi kurang bulan dengan distres respirasi di bangsal neonatologi RSUP Dr. Sardjito Yogyakarta selama kurun waktu Januari 2017 hingga Juli 2019. Analisis bivariat *Chi-square test* atau *Fisher's exact test* digunakan untuk mengetahui hubungan antara variabel bebas dengan variabel tergantung dilanjutkan analisis multivariat regresi logistik metode *backward*.

Hasil: Sebanyak 150 bayi disertakan dalam penelitian ini. Lima puluh tiga (37,8%) bayi mengalami kegagalan nasal CPAP. Analisis bivariat menunjukkan jumlah kehamilan, berat lahir, skor APGAR, ketuban pecah dini, skor Downes awal dan kebutuhan inisiasi FiO_2 berisiko mengalami kegagalan nasal CPAP. Namun hanya kehamilan tunggal ($p=0,026$; OR 4,47; IK 95% 1,19-16,7), berat lahir <1000 gram ($p=0,022$; OR 11,55; IK 95% 1,18-112,45), skor Downes awal ($p=0,035$; OR 2,68; IK 95% 3,10-24,11), dan $FiO_2 \geq 30\%$ ($p=0,0001$; OR 8,65; IK 95% 3,10-24,11) yang terbukti secara signifikan sebagai faktor prediktor kegagalan nasal CPAP. **Kesimpulan:** Berat lahir <1000 gram, kehamilan tunggal, skor Downes awal dan kebutuhan inisiasi $FiO_2 \geq 30\%$ merupakan prediktor kegagalan nasal CPAP pada bayi kurang bulan dengan distres respirasi.

Keywords: bayi kurang bulan, distres respirasi, *continuous positive airway pressure*.

PREDICTOR FACTORS OF CONTINUOUS POSITIVE AIRWAY PRESSURE FAILURE IN PRETERM INFANTS WITH RESPIRATORY DISTRESS

Winda Intan Permatahati, Ekawaty Lutfia Haksari, Amalia Setyati

Department of Child Health, Faculty of Medicine, Public Health and Nursing,
Universitas Gadjah Mada, Yogyakarta, Indonesia

ABSTRACT

Background: Respiratory distress contributes significantly to mortality and morbidity in preterm infants. The incidence of nasal continuous positive airway pressure (CPAP) failure is remarkably high. There are limited data available regarding nasal CPAP failure in Indonesia, and this study is expected to be a reference in taking preventive measures to reduce mortality and morbidity in preterm infants.

Objective: To determine predictive factors of nasal CPAP failure in preterm infants with respiratory distress.

Methods: A retrospective cohort study was conducted in preterm infants with respiratory distress at the neonatology ward of Dr. Sardjito Hospital during January 2017- July 2019. Chi-square or Fisher's exact tests, variable with $p < 0,25$, and followed by multivariate logistic regression analysis with backward method were used to identify factors contributing to nasal CPAP failure.

Results: A total of 150 infants were included in this study. Fifty-three (37.8%) infants had nasal CPAP failure. Bivariate analysis showed birth weight < 1000 grams, single birth, APGAR score, premature rupture of membrane (PROM), Downes score and initiation of FiO_2 requirement were all risk factors of nasal CPAP failure. However, only singleton ($p = 0,026$; OR 4,47; IK 95% 1,19-16,7), birth weight < 1000 grams ($p = 0,022$; OR 2,69; CI 95%: 1,34-5,44), initial Downes score ($p = 0,035$; OR 2,68; CI 95% 3,10-24,11), and initiation of fractional concentration of inspired (FiO_2) requirement $\geq 30\%$ ($p = 0,0001$; OR 3,03; CI 95%: 2,04-4,50) were significant predictors for nasal CPAP failure by multivariate analysis.

Conclusions: Birth weight < 1000 grams, singleton, initial Downes score and initiation of FiO_2 requirement $\geq 30\%$ were significant predictors of nasal CPAP failure in preterm infants with respiratory distress.

Keywords: preterm infants, continuous positive airway pressure, respiratory distress.