

KADAR LAKTAT INISIAL DARAH KAPILER SEBAGAI PREDIKTOR MORTALITAS PADA ASFIKSIA NEONATORUM

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INTISARI

Latar belakang: Kematian neonatus mempresentasikan 45% kematian anak <5 tahun di dunia. Asfiksia menyebabkan 21% kematian neonatus. Kadar laktat banyak diteliti sebagai prediktor luaran asfiksia, namun, kadar laktat darah kapiler menggunakan alat portabel belum pernah diteliti sebagai prediktor mortalitas asfiksia neonatorum

Metode penelitian: Penelitian kohort retrospektif pada 74 neonatus yang lahir di RSUP Dr.Sardjito bulan April 2015-Mei 2016 dengan asfiksia (resusitasi minimal mencapai ventilasi tekanan positif). Kriteria eksklusi: kadar laktat darah kapiler ≤ 1 jam tidak lengkap, berat lahir <1000 gram, usia kehamilan <28 minggu, dan kelainan bawaan. Subjek dibagi berdasarkan kadar laktat inisial tinggi ($\geq 8,5$ mmol/L) dan rendah (<8,5 mmol/L), kemudian diamati mortalitas usia ≤ 24 jam, ≤ 7 hari, dan ≤ 28 hari.

Hasil: Sebanyak 74 subjek dianalisis. Tiga puluh lima (47%) subjek memiliki kadar laktat inisial tinggi. Tidak ada neonatus meninggal ≤ 24 jam, 13,5% meninggal ≤ 7 hari, dan 18,9% ≤ 28 hari. Usia kehamilan, berat lahir, skor apgar menit ke-1, tingkat resusitasi, sepsis awitan dini, dan laktat inisial signifikan berkorelasi dengan kematian pada analisis bivariat. Analisis multivariat menunjukkan berat lahir (HR 0,99; IK95% 0,996-0,999), tingkat resusitasi (HR 11,9; IK95% 2,44-58,78), problem obstetrik (HR 0,11; IK95% 0,26-0,45), dan laktat inisial (HR 4,1; IK95% 1,06-16,00) merupakan prediktor independen mortalitas asfiksia neonatorum. Kesintasan kumulatif laktat inisial tinggi lebih rendah dibanding laktat inisial rendah, 87% dibanding 97% (luaran ≤ 7 hari), <70% dibanding 90% (luaran ≤ 28 hari).

Simpulan: Kadar laktat inisial darah kapiler merupakan prediktor mortalitas independen pada asfiksia. Kadar laktat inisial tinggi ($\geq 8,5$ mmol/L) memiliki risiko kematian tinggi dan kesintasan kumulatif rendah.

Kata kunci: asfiksia, laktat kapiler, prediktor kematian

INITIAL CAPILLARY LACTATE AS A MORTALITY PREDICTOR IN NEONATAL ASPHYXIA

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ABSTRACT

Background: Neonatal death represent 45% of under five deaths, 21% of neonatal death is caused by asphyxia. Lactate concentration has been widely known as a predictor of outcome in neonatal asphyxia. We need to know whether capillary lactate concentration using handheld device could also use as an predictor in neonatal asphyxia.

Methods: We retrospectively reviewed prospective data about 74 neonates born in Sardjito hospital from April 2015-May 2016 with asphyxia (newborn resuscitated minimally with bag-mask ventilation). Exclusion criteria: no capillary lactate data at ≤ 1 hour after birth, birth weight < 1000 g, gestational age < 28 weeks, and congenital malformations. Subjects divided as a high $\geq 8,5$ mmol/L) and low ($< 8,5$ mmol/L) initial lactate groups. Mortality recorded in < 24 hours, ≤ 7 days, and ≤ 28 days.

Results: There were 35 (47%) subject in high initial lactate group. No death in ≤ 24 hour, 13,5% death in ≤ 7 days, and 18,9% in ≤ 28 days. Gestational age, birth weight, apgar score 1-minute, resuscitation level, early onset sepsis, and high initial lactate correlated significantly with mortality in bivariate analysis. Birth weight (HR 0,99; CI 95% 0,996-0,999), resuscitation level (HR 11,9; CI 95% 2,44-58,78), obstetric problems (HR 0,11; CI 95% 0,26-0,45), and initial lactate (HR 4,1; CI 95% 1,06-16,00) were independent predictors. Cumulative survival was lower in high initial lactate group (87% vs 97% in ≤ 7 days, $< 70\%$ vs 90% in ≤ 28 days).

Conclusions: Capillary initial lactate concentration is an independent predictor of neonatal asphyxia mortality. Initial lactate $\geq 8,5$ mmol/L has high risk mortality and low cumulative survival.

Keywords: asphyxia, capillary lactate, mortality predictor