

"Evaluasi capaian kadar kafein pada bayi prematur dengan apnoe of prematurity yang mendapatkan caffeine base oral di unit neonatal PKIAN RSAB Harapan Kita" = "Evaluation of caffeine levels in premature infants with apnoe of prematurity who receive oral caffeine base in neonatal unit of Harapan Kita National Women and Children Health Center"

Yuko Ade Wahyuni, author

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Abstrak

Pendahuluan: Penggunaan kafein lebih direkomendasikan dalam tatalaksana apnoe of prematurity (AOP) karena selain memberikan efektivitas yang tidak berbeda, namun juga memiliki keuntungan terapeutik lain dibandingkan teofilin atau aminofilin. Dalam kondisi ketersediaan kafein yang masih terbatas di Indonesia, RSAB Harapan Kita mengupayakan penggunaan sediaan kafein oral terhadap pasien bayi prematur yang dirawat di unit perawatan intensif neonatologi. Penelitian ini bertujuan untuk mengetahui capaian kadar kafein dalam plasma neonatus prematur yang mendapatkan kafein oral tersebut.

Metode: Penelitian potong lintang ini mengumpulkan data rekam medis serta mengambil sampel darah untuk mengukur kadar kafein dalam darah neonatus prematur selama periode Maret – Agustus 2022 di RSAB Harapan Kita Jakarta dengan kriteria inklusi neonatus dengan usia gestasi 35 minggu atau kurang yang mendapat terapi kafein. Jenis kafein yang digunakan adalah caffeine base oral dengan dosis inisial 10mg/kgBB dan dilanjutkan dengan dosis rumatan 2,5 mg/kgBB/hari. Pengukuran kadar kafein dalam darah dilakukan setelah hari terapi kelima dengan menggunakan metode GCMS/MS.

Hasil: Terdapat 33 subjek neonatus prematur yang diobservasi secara klinis serta dilakukan pemeriksaan kadar kafein dalam darah, dengan median usia gestasi 32 minggu (kisaran 25 – 34 minggu) dan rerata berat badan lahir 1296,8 ( $\pm$ 307,8) gram. Sebanyak 97% subjek mencapai kisaran kadar terapeutik kafein pada keadaan steady state (4,49 – 20,63 mg/L). Subjek yang mengalami gejala AOP di hari terapi kafein ketujuh sebanyak 30,3%, mayoritas (27,2%) merupakan apnea tipe campuran. Efek samping yang paling banyak ditemui pada subjek penelitian ini adalah peningkatan diuresis.

Kesimpulan: Mayoritas neonatus prematur yang mendapat caffeine base oral mencapai target kadar kafein darah 5 – 25 mg/L disertai penurunan kejadian AOP. Efek samping yang tersering adalah peningkatan diuresis namun tidak disertai kemaknaan klinis.

.....Introduction: The use of caffeine is more recommended for the management of apnea of prematurity (AOP) because, in addition to providing no difference in effectiveness, it also has other therapeutic advantages over theophylline or aminophylline. Because of the limited availability of caffeine in Indonesia, Harapan Kita National Women and Children Health Center seeks to use oral caffeine preparations for premature infants treated in the neonatology intensive care unit. This study aims to determine the achievement of caffeine levels in the plasma of premature neonates who received oral caffeine.

Methods: This cross sectional study collected medical records and took blood samples to measure blood caffeine levels of preterm infants born in the period March – August 2022 at RSAB Harapan Kita Jakarta who fulfilled the inclusion criteria of neonates with a gestational age of 35 weeks or less and received caffeine therapy. The type of caffeine used was an oral caffeine base with an initial dose of 10mg/kg and

continued with a maintenance dose of 2.5 mg/kg/day. Measurement of caffeine levels in the blood was carried out after the fifth day of therapy using the GCMS/MS method.

Results: There were 33 preterm infants who were clinically observed and tested for caffeine levels in the blood, with a median gestational age of 32 weeks (range 25-34 weeks) and a mean birth weight of 1296.8 ( $\pm 307.8$ ) grams. A total of 97% of subjects reached the therapeutic range of caffeine levels at a steady state (4.49 – 20.63 mg/L). Subjects who experienced AOP symptoms on the seventh day of caffeine therapy were 30,3%, the majority (27,2%) were mixed type apnoe. The most common side effect found in the subjects of this study was an increase in diuresis.

Conclusion: Most of the preterm infants who received oral caffeine base achieved targeted blood caffeine levels of 5 – 25 mg/L with reduced incidence of AOP. The most common side effect was increased diuresis but there was no clinical significance.