

# Karakteristik Hiponatremia Dan Hubungannya Dengan Keluaran Klinis Pada Pasien Infeksi Intrakranial Di RSUPN Dr. Cipto Mangunkusumo = Characteristics of Hyponatremia and Its Relationship to Clinical Outcome in Patients with Intracranial Infection at Dr. Cipto Mangunkusumo National General Hospital

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## Abstrak

**Latar Belakang:** Insidensi hiponatremia pada infeksi intrakranial sebesar 30-66%. Hiponatremia dapat memperburuk manifestasi neurologis infeksi intrakranial itu sendiri serta dikaitkan dengan peningkatan morbiditas dan mortalitas.

**Metode:** Penelitian dengan studi potong lintang retrospektif untuk mengetahui karakteristik hiponatremia dan hubungannya dengan keluaran klinis pasien infeksi intrakranial di RSUPN Dr. Cipto Mangunkusumo (RSCM) pada April 2019 s/d Oktober 2021. Data dasar diambil dari Indonesian Brain Infection Study (IBIS) kemudian dilengkapi dari rekam medis. Subjek 18 tahun dengan diagnosis akhir infeksi intrakranial masuk kriteria inklusi, sedangkan data tidak lengkap dan tidak rawat inap masuk kriteria eksklusi.

**Hasil:** Terdapat 296 subjek dengan mayoritas meningoensefalitis tuberkulosis (51,4%). Hiponatremia pada 66,6% subjek, terbagi menjadi derajat ringan (54%), sedang (24%) dan berat (22%). Hiponatremia banyak terjadi pada HIV positif (59,1%), komorbid penyakit paru (44,9%) dengan keluhan terbanyak sakit kepala (58,1%). Kematian terjadi pada (24,2%) subjek hiponatremia, dimana usia >60 tahun, komorbid, penyakit paru atau ginjal, hiponatremia berat dan status hiponatremia tidak terkoreksi berhubungan dengan kematian ( $p < 0,05$ ).

**Kesimpulan:** Pada infeksi intrakranial, koinfeksi HIV berhubungan dengan kejadian hiponatremia. Tidak ditemukan perbedaan bermakna karakteristik hiponatremia terhadap mortalitas, status fungsional maupun durasi perawatan. Faktor yang berhubungan dengan mortalitas adalah usia, derajat hiponatremia, komorbiditas, dan status koreksi hiponatremia.

.....ackground: The incidence of hyponatremia in intracranial infection is 30-66%. Hyponatremia can exacerbate the neurological manifestations of the intracranial infection itself and is associated with increased morbidity and mortality.

**Methods:** This study was a retrospective cross-sectional study to determine the characteristics of hyponatremia and its relationship to the clinical outcome of patients with intracranial infections in Dr. Cipto Mangunkusumo (RSCM) from April 2019 to October 2021. Base data were taken from the Indonesian Brain Infection Study (IBIS) and completed from medical records. Subjects 18 years with a final diagnosis of intracranial infection were included in the inclusion criteria, while incomplete data and no hospitalization were included in the exclusion criteria.

**Results:** There were 296 subjects with the majority of meningoencephalitis tuberculous (51.4%). Hyponatremia in 66.6% of subjects was divided into mild (54%), moderate (24%), and severe (22%). Hyponatremia was common in HIV positive (59.1%), comorbid lung disease (44.9%) with headache as a common complaint (58.1%). Mortality occurred in (24.2%) hyponatremic subjects, where age >60 years, comorbidities, pulmonary or renal disease, severe hyponatremia, and uncorrected hyponatremic status were

associated with mortality ( $p < 0.05$ ).

Conclusion: In intracranial infection, HIV coinfection is associated with the incidence of hyponatremia. There were no significant differences in the characteristics of hyponatremia on mortality, functional status, and duration of treatment. Factors associated with mortality were age, degree of hyponatremia, comorbidities, and hyponatremia correction status.