ABSTRAK

ANALISIS FARMAKOKINETIKA TENTANG ESTIMASI KADAR FENITOIN DALAM DARAH TERHADAP *OUTCOME CLINIC* PADA PASIEN PEDIATRIK KOMUNITAS EPILEPSI DI INDONESIA

Diah Ayu Rohmaningtias, Masita Wulandari Suryoputri, Nialiana Endah Endriastuti

Latar Belakang: Fenitoin memiliki kisaran terapeutik yang sempit (10-20 mg/L), jika kadar plasma di bawah 10 mg/L dapat menghasilkan efek terapi yang tidak optimal dan jika kadar di atas 20 mg/L dapat mengakibatkan toksisitas. Pemantauan kadar fenitoin perlu dilakukan. Tujuan penelitian ini adalah untuk menganalisis estimasi kadar fenitoin dalam darah secara farmakokinetika menggunakan parameter *Michaelis* dan *Menten* terhadap *outcome clinic* pada pasien pediatrik komunitas epilepsi di Indonesia.

Metodologi: Penelitian ini merupakan penelitian deskriptif menggunakan metode *case series*. Pengambilan data dilakukan selama bulan Mei – Juli 2020 dengan metode *total sampling* pada pasien pediatrik komunitas epilepsi di Indonesia. Hasil yang didapatkan sebanyak 11 pasien yang sesuai dengan kriteria inklusi. Sumber data didapatkan melalui wawancara dengan orangtua/wali pasien, data di dokumentasikan dalam *Case Report Form* dan hasil penelitian disajikan secara deskriptif.

Hasil Penelitian: Hasil penelitian yang diperoleh yaitu sebanyak 5 pasien (45,45%) dengan estimasi kadar fenitoin berada dibawah rentang terapi (< 10 mg/L) dan *outcome clinic* yang dicapai termasuk kategori baik berupa durasi bebas kejang ≥ 6 bulan. Sebanyak 5 pasien (45,45%) nilai estimasi kadar fenitoin berada di bawah rentang terapi (< 10 mg/L) dan 1 pasien (9,1%) yang memiliki estimasi kadar sesuai rentang terapi (10-15 mg/L) masing-masing memiliki *outcome clinic* tidak baik berupa durasi bebas kejang < 6 bulan.

Kesimpulan: Estimasi kadar fenitoin dalam darah menggunakan parameter farmakokinetika pada pasien pediatrik komunitas epilepsi di Indonesia sebagian besar berada di bawah rentang terapi (10-20 mg/L). *Outcome clinic* yang dicapai sebagain besar tidak baik karena durasi bebas kejang < 6 bulan.

Kata Kunci: Epilepsi, fenitoin, estimasi kadar, *Outcome clinic*

ABSTRACT

PHARMACOKINETIC ANALYSIS OF ESTIMATED PHENYTOIN LEVELS IN THE BLOOD AND THE CLINICAL OUTCOME IN PEDIATRIC PATIENTS OF EPILEPSY COMMUNITY IN INDONESIA

Diah Ayu Rohmaningtias, Masita Wulandari Suryoputri, Nialiana Endah Endriastuti

Background: Phenytoin has a narrow therapeutic range (10-20 mg/L), if the plasma level is below 10 mg/L it can produce a suboptimal therapeutic effect and if the level is above 20 mg/L it can result in toxicity. It is necessary to monitor phenytoin levels. The purpose of this study was to analyze phenytoin levels in pharmacokinetic analysis using *Michaelis* and *Menten's* parameters on clinical outcomes in pediatric patients in the epilepsy community in Indonesia.

Methodology: This research is observational. The method used in this research used a case series. Data were collected during May - July 2020 with a total sampling method on pediatric patients in the epilepsy community in Indonesia who used phenytoin monotherapy or polytherapy for at least six months. Sources of data were obtained through interviews with the patient's parents/guardians, the data were documented in the Case Report Form, and the research results were presented descriptively.

Result: The results of the research obtained were five patients (45.45%) with estimated phenytoin levels below the therapeutic range (<10 mg / L), and the clinical outcomes achieved were in a suitable category, seizure-free duration ≥ 6 months. For a total of five patients (45.45%) had the estimated value of phenytoin levels was under the therapeutic range (<10 mg / L), and one patient (9.1%) had estimated levels according to the therapeutic range (10-15 mg / L) respectively. Each of the patients had a poor clinical outcome in the form of a seizure-free duration < 6 months

Conclucion: Estimating phenytoin levels in blood using pharmacokinetics in pediatric patients with the epilepsy community in Indonesia was mostly under the therapeutic range (10-20 mg / L). The clinical outcome achieved was unfavorable, mainly because of the seizure-free duration < six months.

Key word: Epilepsy, phenytoin, level estimation, clinic outcome