ABSTRACT

Background: *Cytomegalovirus (CMV) infection in children is an important clinical problem and is commonly treated with valganciclovir. This drug has proven efficacy but may cause hematologic adverse effects. Data from Indonesia remains limited, particularly regarding laboratory monitoring patterns and the incidence of adverse effects in pediatric patients.*

Methods: *This retrospective cohort study analysed 145 pediatric patients with CMV infection who received valganciclovir therapy at Sardjito General Hospital. Patients were divided into two groups: those who underwent serial laboratory monitoring (pre, 2 weeks, 4 weeks, post) and those assessed only pre–post. The main variables were changes in hemoglobin, neutrophil, and platelet counts, as well as hematologic adverse events. Data were analysed using the Wilcoxon test, repeated measures ANOVA, chi-square test, and logistic regression.*

Results: *A total of 25.5% of patients experienced hematologic adverse events, predominantly neutropenia. No significant differences were found in hemoglobin ($p=0.197$), neutrophils ($p=0.136$), or platelets ($p=0.981$) before and after therapy in non-parametric tests. Further analysis showed a small but significant decrease in neutrophils ($F=4.460$; $p=0.036$), while hemoglobin and platelets remained stable. There was no significant difference in hematologic adverse events between monitoring methods (31% vs 20.3%; $p=0.099$). Post-therapy PCR showed that 69.7% of patients became non-reactive. Younger age (<1 month at initiation) was associated with a higher risk of adverse events, although the sample size was very small.*

Conclusion: *Valganciclovir is relatively safe in children with CMV, with generally stable hematologic profiles. Neutropenia remains the most frequent adverse event, especially in younger infants. Pre–post laboratory monitoring may be considered a practical and minimal invasive alternative for low-risk patients, while closer monitoring is warranted in high-risk groups.*

Keywords: *Cytomegalovirus, Valganciclovir, hematologic effects, children*

INTISARI

Latar Belakang: Infeksi *Cytomegalovirus* (CMV) pada anak merupakan masalah klinis penting dan sering diterapi dengan valgansiklovir. Obat ini terbukti efektif, tetapi dapat menimbulkan efek samping hematologis. Data di Indonesia masih terbatas, terutama terkait pola pemantauan laboratorium dan kejadian efek samping pada anak.

Metode: Penelitian ini menggunakan desain kohort retrospektif dengan menganalisis 145 pasien anak yang mendapat terapi valgansiklovir di RS Sardjito. Pasien dibagi menjadi dua kelompok: yang diperiksa laboratorium secara serial (*pre*, 2 minggu, 4 minggu, *post*) dan yang hanya diperiksa *pre–post.* Variabel utama adalah perubahan kadar hemoglobin, neutrofil, trombosit, serta kejadian efek samping hematologis. Analisis dilakukan dengan uji *Chi-square, Wilcoxon*, regresi logistik, dan *repeated measures ANOVA.*

Hasil penelitian: Sebanyak 25,5% pasien mengalami efek samping hematologis, terutama neutropenia. Tidak ada perbedaan bermakna kadar hemoglobin (p=0,197), neutrofil (p=0,136), dan trombosit (p=0,981) sebelum dan sesudah terapi pada uji non-parametrik. Analisis lanjutan menunjukkan penurunan kecil namun bermakna pada neutrofil (F=4,460; p=0,036), sedangkan hemoglobin dan trombosit tetap stabil. Perbandingan jenis pemeriksaan tidak menunjukkan perbedaan bermakna terhadap kejadian efek hematologis (31% vs 20,3%; p=0,099). Pemeriksaan PCR *post* terapi menunjukkan 69,7% pasien menjadi non-reaktif. Usia terapi <1 bulan tampak berhubungan dengan efek samping lebih tinggi, meskipun jumlah sampelnya sangat kecil.

Kesimpulan: Valgansiklovir relatif aman digunakan pada anak dengan CMV, dengan profil hematologis yang umumnya stabil. Neutropenia tetap menjadi efek samping yang paling sering ditemukan, terutama pada bayi muda. Pemantauan laboratorium *pre–post* dapat dipertimbangkan sebagai alternatif yang lebih praktis dan minim invasive pada pasien risiko rendah, sementara pemantauan lebih ketat tetap dibutuhkan pada kelompok risiko tinggi.

Kata kunci: *Cytomegalovirus*, Valgansiklovir, efek hematologis, anak