INTISARI

Penyakit ginjal kronik (PGK) merupakan kondisi dimana ginjal tidak mampu mempertahankan keseimbangan cairan sisa metabolisme yang bersifat progresif, *irreversible* dan berlangsung secara lambat. Anemia sebagai komplikasi pada PGK berkontribusi pada morbiditas, mortalitas, kualitas hidup pasien , serta biaya perawatan yang lebih besar. Penelitian ini bertujuan mengetahui biaya efektivitas dan *cost effectiveness* terapi anemia pada pasien penyakit ginjal kronik.

Penelitian dilakukan secara observasional-analitik dengan desain *cohort* retrospektif dari perspektif provider (pemberi pelayanan). Sampel yang digunakan merupakan pasien PGK dengan anemia yang memenuhi kriteria inklusi usia ≥18 tahun, CKD stage IV dan V, HD rutin dan terdapat data lengkap pada periode Januari hingga Desember 2020 di RS PKU Muhammadiyah Yogyakart. Pasien dengan data tidak lengkap dan anemia akibat penyebab lainya diekslusikan. Data diambil dari catatan medis dan rekap keuangan pasien. Efektivitas terapi anemia dinilai berdasarkan ketercapaian *outcome* klinis berupa peningkatan nilai Hb pada pasien dalam waktu 3 bulan. Pembiayaan yang dihitung berdasarkan nilai biaya medis langsung dari rekap keuangan pasien. Analisis penelitian ini dilakukan uji *independent t test* dan analisis efektivitas biaya dilakukan dengan menghitung nilai ICER terapi dengan *outcome* pencapaian kadar Hb target.

Sebanyak 113 pasien yang memenuhi kriteria inklusi, terdiri atas 96 pasien kelompok epoetin alfa dan 17 pasien kelompok epoetin beta. Terdapat peningkatan nilai Hb setelah penggunaan epoetin pada kelompok epoetin alfa (0,41 g/dl) maupun beta (0,46 g/dl) dalam 3 bulan. Terdapat perbedaan secara statistik ($p<0,05$) pada rata-rata nilai Hb dalam 3 bulan pada kelompok epoetin alfa (8,73 g/dl) dan epoetin beta (9,51 g/dl). Persentase ketercapaian target terapi pada kelompok epoetin beta (12%) lebih tinggi dibandingkan kelompok epoetin alfa (10%). Biaya epoetin pada terapi pengobatan anemia kelompok epoetin beta (Rp 6.965.429) lebih rendah dibandingkan kelompok epoetin alfa (Rp 7.134.223). Nilai rasio efektivitas biaya epo beta Rp 580.452 lebih kecil dibandingkan rasio efektivitas biaya epo alfa Rp 713.422. Nilai ICER yang diperoleh Rp -84.397 menunjukkan penghematan biaya Rp 84.397 untuk meningkatkan 1% ketercapaian target terapi nilai Hb >10 g/dl. Epoetin beta lebih *cost-effective* dan *cost-saving* dibandingkan epo alfa sebagai terapi anemia pada pasien PGK

Kata kunci : penyakit ginjal kronik, anemia, *cost effectiveness analysis* (CEA)

ABSTRACT

Chronic kidney disease is a condition when the kidneys are unable to maintain a fluid balance of metabolic waste. The progression of CKD is progressive and irreversible. Cases of chronic kidney disease have increased by 60% with the costs incurred reaching more than 2.5 trillion rupiahs. Anemia is a complication of CKD that contributes to morbidity, mortality, quality of life of patients, as well as greater treatment costs. This study aims to determine the effectiveness and cost of anemia therapy in patients with chronic kidney disease.

The study was conducted in an analytical-observational manner with a retrospective cohort design from the provider's perspective. The samples used were CKD patients with anemia who met the inclusion criteria of age 18 years, CKD stages IV and V, routine HD and there were complete data from January to December 2020 at PKU Muhammadiyah Yogyakarta Hospital. Patients with incomplete data and anemia due to other causes were excluded. Data were taken from medical records and patient financial recapitulation. The effectiveness of anemia therapy was assessed based on the achievement of clinical outcomes in the form of increasing Hb values in patients within 3 months. Financing calculated based on the value of medical costs directly from the patient's financial recapitulation. The analysis of this research was carried out by independent t test and cost effectiveness analysis was carried out by calculating the ICER value of therapy with the outcome of achieving the target Hb level.

A total of 113 patients met the inclusion criteria, consisting of 96 patients in the epoetin alpha group and 17 patients in the epoetin beta group. There was an increase in Hb value after using epoetin in the epoetin alpha (0.41 g/dl) and beta (0.46 g/dl) groups in 3 months. There was a statistical difference ($p<0.05$) in the average Hb value at 3 months in the epoetin alfa (8.73 g/dl) and epoetin beta (9.51 g/dl) groups. The percentage of achieving therapeutic targets in the epoetin beta group (12%) was higher than the epoetin alfa group (10%). The cost of epoetin for anemia treatment in the beta epoetin group (Rp 6,965,429) was lower than the epoetin alfa group (Rp 7.134.223). The value of the cost-effectiveness ratio of epo beta Rp 580.452 is smaller than the cost effectiveness ratio of epo alpha Rp 713.422. The ICER value obtained was Rp-84.397 indicating a cost savings of Rp 84.397to increase 1% achievement of the therapeutic target for Hb value >10 g/dl. Epoetin beta is more cost-effective and cost-saving than Epo Alpha as a treatment for anemia in CKD patients

Keywords: chronic kidney disease, anemia, *cost-effectiveness analysis* (CEA)