

INTISARI

Di Indonesia, metformin+dipeptidyl peptidase-4 inhibitor (DPP-4 inhibitor) merupakan pilihan terapi pada diabetes melitus tipe 2 (DMT2) karena memiliki kelebihan dalam meningkatkan kontrol glukosa, menurunkan berat badan, dan memiliki risiko hipoglikemia yang rendah. Penelitian ini bertujuan untuk mengevaluasi efektivitas biaya DPP-4 inhibitor dibandingkan dengan SU sebagai terapi lini kedua yang dikombinasikan dengan metformin pada pasien DMT2.

Penelitian farmakoekonomi ini berbasis studi observasional dengan rancangan kohort retrospektif yang dilakukan di RSPAL Dr. Ramelan Surabaya periode Januari 2021-Juli 2024. Subjek uji penelitian ini adalah DPP-4 inhibitor dan metformin+SU sebanyak 41 pasien tiap kelompok. Alat yang digunakan dalam penelitian berupa lembar pengumpulan data dan program pengolah data statistik SPSS. Efektivitas terapi diukur dari pencapaian target glukosa setelah 3 bulan terapi, insidensi efek samping hipoglikemik, sedangkan biaya dihitung dari perspektif rumah sakit meliputi biaya konsultasi dokter, pemeriksaan laboratorium, dan terapi obat. Selanjutnya CEA (*Cost Effectiveness Analysis*) dihitung berdasarkan nilai ACER (*Average Cost Effectiveness Ratio*) dan ICER (*Incremental Cost Effectiveness Ratio*). Analisis sensitivitas dilakukan untuk mengetahui faktor yang paling berpengaruh terhadap nilai *cost-effectiveness* (nilai ICER).

Berdasarkan efektivitas terapi kelompok metformin+DPP-4 inhibitor dan metformin+SU dapat menurunkan kadar Δ HbA1c (0,70% vs 0,67%), Δ GDP (42,06 mg/dL vs 42,25 mg/dL), dan Δ GD2PP (48,39 mg/dL vs 53,18 mg/dL). Penurunan tersebut tidak berbeda bermakna secara statistik p value > 0,05. Hasil pencapaian target menunjukkan kelompok metformin+DPP-4 inhibitor dan metformin+SU pada HbA1c (58,54% vs 46,35%), GDP (58,54% vs 43,91%), dan GD2PP (56,09% vs 48,78%). Pada penelitian ini tidak ditemukan insidensi efek samping hipoglikemik. Biaya total yang dikeluarkan pasien terapi metformin+DPP-4 inhibitor dan metformin+SU sebesar Rp. 93.451.004 vs Rp. 81.838.279. Analisis efektivitas biaya yang dilakukan didapatkan nilai ICER metformin+DPP-4 inhibitor dibanding metformin+SU pada efektivitas HbA1c, GDP, dan GD2PP sebesar Rp. 2.319.516; Rp. 1.932.666; dan Rp. 3.867.975. Hasil penelitian menunjukkan metformin+ DPP-4 inhibitor lebih *cost effective* dibandingkan dengan metformin+SU sebagai pilihan terapi pada pasien DMT2.

Kata kunci : Diabetes Melitus, *Cost Effectiveness Analysis*, Metformin, DPP-4 Inhibitor, Sulfonilurea

ABSTRACT

In Indonesia, metformin + dipeptidyl peptidase-4 inhibitor (DPP-4 inhibitor) is the treatment of choice for type 2 diabetes mellitus (T2DM) because it has advantages in improving blood sugar control, reducing body weight, and has a low risk of hypoglycemia. This study aims to evaluate the cost-effectiveness of DPP-4 inhibitors compared to SU as second-line therapy combined with metformin in T2DM patients.

This pharmacoeconomic study is based on an observational study with a retrospective cohort design conducted at RSPAL Dr. Ramelan Surabaya in the period January 2021-July 2024. The test subjects in this study were DPP-4 inhibitors and metformin + SU as many as 41 patients in each group. The tools used in the study were data collection sheets and SPSS statistical data processing programs. The effectiveness of therapy was measured by achieving glucose targets after 3 months of therapy and the incidence of hypoglycemic side effects, while costs were calculated from the hospital perspective, including doctor consultation fees, laboratory examination fees, and drug therapy costs. Furthermore, CEA (Cost Effectiveness Analysis) was calculated based on the ACER (Average Cost Effectiveness Ratio) and ICER (Incremental Cost Effectiveness Ratio) values. Sensitivity analysis was carried out to determine the factors that most influenced the cost-effectiveness value (ICER value).

Based on the effectiveness of metformin+DPP-4 inhibitor and metformin+SU group therapy, it can reduce Δ HbA1c levels (0.70% vs 0.67%), Δ FBG (42.06 mg/dL vs 42.25 mg/dL), and Δ GD2PP (48.39 mg/dL vs 53.18 mg/dL). The decrease was not statistically significantly different p value > 0.05 . The results of target achievement showed that the metformin+DPP-4 inhibitor and metformin+SU groups on HbA1c (58.54% vs 46.35%), FBG (58.54% vs 43.91%), and GD2PP (56.09% vs 48.78%). In this study, there was no incidence of hypoglycemic side effects. The total cost incurred in patients with metformin + DPP-4 inhibitor and metformin + SU therapy was IDR 93,451,004 vs IDR 81,838,279. The cost-effectiveness analysis conducted obtained the ICER value of metformin + DPP-4 inhibitor compared to metformin + SU on the effectiveness of HbA1c, GDP, and GD2PP of IDR 2,319,516; IDR 1,932,666; and IDR 3,867,975. The results of the study showed that metformin + DPP-4 inhibitor was more cost effective than metformin + SU as a therapy option in patients with T2DM.

Keywords: Diabetes Mellitus, Cost Effectiveness Analysis, Metformin, DPP-4 Inhibitor, Sulfonylurea