

Intisari

Latar Belakang: Diabetes melitus (DM) tipe 2 memerlukan terapi obat antidiabetes oral (OAD) untuk mengontrol kadar glukosa darah. Kekhawatiran masyarakat mengenai potensi gangguan fungsi ginjal akibat penggunaan OAD jangka panjang dapat memengaruhi persepsi pengobatan.

Tujuan: Menganalisis perbedaan fungsi ginjal (Δ eGFR) antara kelompok non-DM dan kelompok DM yang menggunakan OAD jangka panjang, regimen terapi, golongan OAD, dan faktor yang memengaruhi Δ eGFR.

Metode: Studi observasional kohort retrospektif pada civitas akademik Universitas Gadjah Mada berdasarkan data rekam medis 2020–2025. Sampel terdiri dari kelompok non-DM dan DM yang menggunakan OAD selama ≥ 12 bulan. Pengambilan data meliputi usia, jenis kelamin, eGFR, HbA1c, durasi penggunaan OAD, dan jumlah penggunaan obat lain. Analisis data dilakukan secara deskriptif dan komparatif. Analisis perbedaan eGFR awal dan akhir dalam masing-masing kelompok menggunakan uji *Wilcoxon signed-rank*, sedangkan perbandingan Δ eGFR antar kelompok menggunakan uji *Mann–Whitney*.

Hasil: Sebanyak 1953 data rekam medis diobservasi, terdapat 176 kasus pada kelompok DM tipe 2 (95 monoterapi, 71 kombinasi 2 obat, dan 10 kombinasi ≥ 3 obat) dan 190 kasus pada kelompok non-DM. Tidak terdapat perbedaan bermakna Δ eGFR antara kedua kelompok pada seluruh durasi pengamatan 1–4 tahun ($p=0,380$; $p=0,896$; $p=0,946$; $p=0,647$). Berdasarkan regimen terapi, tidak terdapat perbedaan bermakna Δ eGFR pada monoterapi, kombinasi 2 obat, maupun kombinasi ≥ 3 obat ($p=0,491$). Analisis berdasarkan golongan obat juga menunjukkan tidak terdapat perbedaan bermakna Δ eGFR pada penggunaan biguanida, sulfonilurea, dan inhibitor α -glukosidase ($p=0,100$). Analisis multivariat menunjukkan bahwa eGFR awal ($p=0,002$) dan jumlah penggunaan obat lain ($p<0,001$) berkontribusi signifikan terhadap Δ eGFR, sedangkan jenis terapi antidiabetes oral tidak berpengaruh bermakna ($p=0,224$).

Kesimpulan: Tidak terdapat perbedaan Δ eGFR antara kelompok non-DM dan kelompok DM yang menggunakan OAD jangka panjang, baik berdasarkan durasi pengamatan, regimen terapi, maupun golongan OAD. Faktor yang berkontribusi terhadap Δ eGFR adalah nilai eGFR awal dan jumlah penggunaan obat lain.

Kata kunci: diabetes melitus tipe 2, obat antidiabetes oral, laju filtrasi glomerulus (eGFR), perubahan eGFR, fungsi ginjal.

Abstract

Background: Type 2 diabetes mellitus (DM) requires oral antidiabetic drugs (OADs) to control blood glucose levels. Public concerns about potential kidney dysfunction resulting from long-term use of OADs may influence perceptions of treatment.

Objective: To analyze differences in renal function (Δ eGFR) between the non-DM group and the DM group regarding long-term OAD use, treatment regimens, OAD classes, and factors influencing Δ eGFR.

Methods: A retrospective observational cohort study of the academic community at Gadjah Mada University based on medical records from 2020 to 2025. The sample consisted of non-DM and DM groups who used OADs for ≥ 12 months. Data collection included age, sex, eGFR, HbA1c, duration of OAD use, and the number of other medications used. Data analysis was performed descriptively and comparatively. The difference in baseline and end-point eGFR within each group was analyzed using the Wilcoxon signed-rank test, while the comparison of Δ eGFR between groups was performed using the Mann–Whitney test.

Results: A total of 1,953 medical records were analyzed; there were 176 cases in the type 2 diabetes group (95 on monotherapy, 71 on a combination of 2 drugs, and 10 on a combination of ≥ 3 drugs) and 190 cases in the non-diabetes group. There were no significant differences in Δ eGFR between the two groups over the entire 1–4-year observation period ($p=0.380$; $p=0.896$; $p=0.946$; $p=0.647$). Based on the treatment regimen, there was no significant difference in Δ eGFR among monotherapy, 2-drug combination, or ≥ 3 -drug combination groups ($p=0.491$). Analysis by drug class also showed no significant difference in Δ eGFR among users of biguanides, sulfonylureas, and α -glucosidase inhibitors ($p=0.100$). Multivariate analysis showed that baseline eGFR ($p=0.002$) and the number of other medications used ($p<0.001$) significantly contributed to Δ eGFR, whereas the type of oral antidiabetic therapy had no significant effect ($p=0.224$).

Conclusion: There was no difference in Δ eGFR between the non-DM group and the DM group using long-term OADs, regardless of the duration of observation, treatment regimen, or class of OAD. Factors contributing to Δ eGFR included baseline eGFR and the number of other medications used.

Keywords: type 2 diabetes mellitus, oral antidiabetic drugs, glomerular filtration rate (eGFR), changes in eGFR, renal function.