

Perbandingan Penurunan Laju Filtrasi Glomerulus pada Populasi Non-Diabetes, Pre-diabetes, dan Diabetes Melitus Tipe-2, serta Faktor-Faktor yang Memengaruhinya = Comparison of Glomerular Filtration Rate Decline between Non-Diabetic, Pre-diabetic, and Diabetic Population and Its Affecting Factors

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Abstrak

Latar Belakang: Penyakit ginjal kronik (PGK) pada pasien diabetes melitus tipe-2 memiliki prevalensi yang meningkat setiap tahunnya. Diabetes merupakan penyebab utama PGK. Penurunan LFG pada populasi diabetes mungkin lebih besar dan lebih cepat dibandingkan populasi non-diabetes atau prediabetes. Saat ini belum terdapat penelitian mengenai penurunan eLFG pada kategori gangguan toleransi glukosa berbeda tersebut dan faktor yang memengaruhinya di Indonesia.

Tujuan: Membandingkan penurunan eLFG pada kelompok diabetes, prediabetes, dan non-diabetes dan faktor-faktor yang berpengaruh.

Metode: Penelitian kohort retrospektif dilakukan pada data Penelitian Kohort Penyakit Tidak Menular (PTM) Litbangkes Republik Indonesia Tahun 2011-2020. Pasien dikelompokkan berdasarkan status diabetes awal menjadi kelompok diabetes, prediabetes, dan non-diabetes. Penurunan eLFG berdasarkan rumus CKD-EPI Creatinine Equation. Analisis dilakukan dengan uji Kruskal Wallis, dilanjutkan dengan uji Mann Whitney U.

Hasil: Didapatkan 1.245 subjek (877 non-diabetes, 274 prediabetes, dan 94 diabetes) yang diikutsertakan dalam penelitian. Didapatkan eLFG awal yang berbeda antar kelompok (non-diabetes 110 vs. prediabetes 107,3 vs. diabetes 106,1 ml/min/1,73m², $p < 0,001$). Didapatkan eLFG akhir yang berbeda antar kelompok (non-diabetes 86,3 vs. prediabetes 79,8 vs. diabetes 59,3 ml/min/1,73m², $p < 0,001$). Didapatkan penurunan eLFG yang berbeda antar kelompok (non-diabetes -23,1 vs. prediabetes -26,4 vs. diabetes -37,6 ml/min/1,73m², $p < 0,001$). Faktor yang berhubungan dengan penurunan eLFG lebih tinggi adalah jenis kelamin perempuan, hipertensi, dan gula darah puasa tinggi.

Kesimpulan: Penurunan eLFG lebih besar ditemukan pada kelompok diabetes dibandingkan dengan kelompok non-diabetes dan pre-diabetes. Jenis kelamin perempuan, hipertensi, dan gula darah puasa tinggi berhubungan dengan penurunan eLFG lebih besar.

.....Introduction: Chronic kidney disease (CKD) in diabetic patients has an increasing prevalence every year. Diabetes is the main cause of CKD. Decline LFG in diabetes may be greater and faster than in non-diabetic or prediabetes populations. There has been no research on the decrease in GFR in each category and its influencing factors in Indonesia Aim: To compare the decline in eGFR in the diabetic, prediabetic, and non-diabetic groups and their influencing factors. Methods: A retrospective cohort study was conducted on Indonesian Research and Development Cohort of Non-Communicable Diseases (PTM) and Development in 2011- 2020. Patients were grouped based on initial diabetes status into diabetic, prediabetic, and non-diabetic groups. The decline in the glomerular filtration rate was carried out by creatinine assessment and calculations based on the 2021 CKD-EPI Creatinine Equation formula. The analysis was carried out with the Kruskal Wallis test, followed by the Mann Whitney U test. Results: A total of 1,245 subjects (877 non-

diabetic, 274 prediabetic, and 94 diabetic) were included in the study. There were differences in baseline eGFR between groups (non-diabetic 110 vs. prediabetic 107.3 vs. diabetic 106.1 ml/min/1.73m², $p < 0.001$). There were differences in final GFR between groups (non-diabetic 86.3 vs. prediabetic 79.8 vs. diabetes 59.3 ml/min/1.73m², $p < 0.001$). Different eGFR decline was found between groups (non-diabetic -23.1 vs. prediabetes -26.4 vs. diabetes -37.6 ml/min/1.73m², $p < 0.001$). Factors associated with rapid decline in GFR were female gender, hypertension, and high fasting blood sugar level. Conclusion: There was a more rapid decline in eGFR in the group with diabetes than non-diabetic and pre-diabetic. Factors associated with a higher decrease in eGFR were female gender, hypertension, and high fasting blood sugar level.