

ABSTRAK

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HUBUNGAN KADAR GLUKOSA DARAH DENGAN KADAR KREATININ PADA PENDERITA DIABETES MELITUS TIPE 2 YANG DISERTAI HIPERTENSI

xvii + 79 Halaman + 10 Tabel + 13 Lampiran

Diabetes Melitus (DM) tipe 2 yaitu kelainan metabolik bersifat kronis ditunjukkan oleh hiperglikemia karena masalah pelepasan insulin, kerja insulin, atau kombinasi kedua. Hiperglikemia kronis mengakibatkan bermacam permasalahan, termasuk nefropati diabetik yang ditunjukkan dengan menurunnya fungsi ginjal dan peningkatan kadar kreatinin. Hipertensi sebagai penyakit penyerta pasien DM tipe 2 juga bisa memperburuk kerusakan ginjal. Studi ini mempunyai tujuan guna mengkaji korelasi nilai glukosa darah dengan nilai kreatinin pasien Diabetes Melitus tipe 2 yang disertai Hipertensi. Studi ini menerapkan desain observasional analitik berbasis pendekatan *cross-sectional*. Studi dilaksanakan di UPT Laboratorium Kesehatan Daerah Kabupaten Probolinggo pada bulan Oktober 2025–Mei 2026. Sampel penelitian berjumlah 42 responden yang terpilih menerapkan teknik *purposive sampling* berlandaskan kriteria inklusi, yakni pasien DM tipe 2 dengan Hipertensi, wanita berusia 40–60 tahun. Uji nilai glukosa darah dilakukan menerapkan teknik GOD-PAP Enzimatis Kolorimetri dan pemeriksaan kadar kreatinin menggunakan metode Sarcosine Oxidase dengan alat Mindray BS-220E *Chemistry Analyzer*. Pengolahan data diawali pengujian normalitas *Shapiro-Wilk* lalu uji hubungan *Spearman*. Hasil studi mengungkapkan sebanyak 24 partisipan (57,1%) nilai glukosa darah nya tinggi dengan rerata nilai glukosa darah sejumlah 188 mg/dL. Sebanyak 39 responden (92,9%) memiliki kadar kreatinin normal dengan rerata nilai kreatinin sebesar 0,9 mg/dL. Hasil uji normalitas menyajikan data tidak berdistribusi normal ($p < 0,05$), sebab itu diterapkan uji korelasi *Spearman*. Hasil uji korelasi menyajikan nilai p -value sejumlah 0,040 ($< 0,05$) dengan nilai kaitan sebesar 0,318 yang mencerminkan hubungan baik dan derajat hubungan lemah antara nilai glukosa darah dengan kadar kreatinin. Hasil studi ini menandakan naiknya nilai glukosa darah cenderung disusul kenaikan nilai kreatinin, sehingga pemantauan glukosa darah dan pengendalian glukosa darah berperan penting dalam mempertahankan fungsi ginjal di pasien DM tipe 2 disertai Hipertensi. Simpulan temuan ini mengungkapkan adanya kaitan nilai glukosa darah dengan nilai kreatinin DM tipe 2 yang disertai Hipertensi.

Kata Kunci: Diabetes Melitus tipe 2, Glukosa Darah, Kreatinin, Hipertensi.

Daftar Bacaan: 19 buku dan 41 jurnal (2016-2025).

ABSTRACT

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THE RELATIONSHIP BETWEEN BLOOD GLUCOSE LEVELS AND CREATININE LEVELS IN TYPE 2 DIABETES MELLITUS PATIENTS WITH HYPERTENSION

xvii + 79 Pages + 10 Tables + 13 Appendices

Type 2 Diabetes Mellitus (T2DM) is a chronic metabolic disorder characterized by hyperglycemia resulting from impaired insulin secretion, insulin action, or a combination of both. Chronic hyperglycemia may lead to various complications, including diabetic nephropathy, which is characterized by declining renal function and elevated serum creatinine levels. Hypertension, as a common comorbidity in patients with T2DM, can further aggravate kidney damage. This study aimed to determine the correlation between blood glucose levels and creatinine levels in patients with Type 2 Diabetes Mellitus accompanied by hypertension. This study employed an analytical observational design using a cross-sectional approach. The research was conducted at the Regional Health Laboratory (UPT Laboratorium Kesehatan Daerah) of Probolinggo Regency from October 2025 to May 2026. The study included 42 respondents selected through purposive sampling based on the inclusion criteria, namely female patients aged 40–60 years diagnosed with Type 2 Diabetes Mellitus and hypertension. Blood glucose levels were measured using the Glucose Oxidase–Phenol Aminophenazone (GOD-PAP) enzymatic colorimetric method, while creatinine levels were analyzed using the Sarcosine Oxidase method with a Mindray BS-220E Chemistry Analyzer. Data analysis began with the Shapiro–Wilk normality test, followed by the Spearman correlation test. The results showed that 24 respondents (57.1%) had elevated blood glucose levels, with a mean blood glucose level of 188 mg/dL. A total of 39 respondents (92.9%) had normal creatinine levels, with a mean creatinine level of 0.9 mg/dL. The Shapiro–Wilk normality test indicated that the data were not normally distributed ($p < 0.05$); therefore, the Spearman correlation test was applied. The Spearman correlation analysis revealed a p -value of 0.040 ($p < 0.05$) and a correlation coefficient (r) of 0.318, indicating a statistically significant positive correlation with weak strength between blood glucose levels and creatinine levels. These findings suggest that higher blood glucose levels tend to be associated with increased creatinine levels. Therefore, regular monitoring and effective control of blood glucose are essential for preserving kidney function in patients with Type 2 Diabetes Mellitus accompanied by hypertension. In conclusion, this study demonstrated a significant correlation between blood glucose levels and creatinine levels in patients with Type 2 Diabetes Mellitus and hypertension.

Keywords: Type 2 Diabetes Mellitus, Blood Glucose, Creatinine, Hypertension.

References: 19 books and 41 journals (2016-2025).