

ABSTRAK

Hubungan Antara Tekanan Darah dan Kadar Glukosa Darah Puasa pada Pasien Lanjut Usia (Lansia) di Sleman : Cross-Sectional Study

Azaqi Ananta Boga¹⁾ Hemi Sinorita²⁾ Dwita Dyah Adyarini²⁾

Program Studi Kedokteran, Fakultas Kedokteran, Kesehatan Masyarakat, dan Keperawatan, Universitas Gadjah Mada

Latar Belakang :

Penuaan adalah proses perubahan tubuh akibat pertambahan usia yang menyebabkan penurunan fungsi dari sel β pankreas dan resistensi insulin. Penurunan fungsi sel β pankreas dan resistensi insulin mengakibatkan peningkatan glukosa darah puasa dan hiperglikemia. Hiperglikemia meningkatkan produksi *advance glycation end products* (AGEs) sehingga *reactive oxygen species* (ROS) meningkat dan nitrit oksida (NO) menurun di endothelial. Penurunan NO di vaskular mengakibatkan vasokonstriksi pembuluh darah yang berakibat hipertensi. Penurunan aktivitas fisik dan peningkatan kalori tubuh pada lanjut usia menyebabkan obesitas yang memicu penurunan NO di endothelial dan menyebabkan hipertensi. Penelitian sebelumnya di China menjelaskan terdapat hubungan positif antara tekanan darah dengan kadar glukosa darah puasa berdasarkan jenis kelamin. Penelitian hubungan tekanan darah dengan kadar glukosa darah puasa belum dilaksanakan di Sleman pada lansia dengan usia di atas angka harapan hidup. Lansia di atas angka harapan hidup berisiko lebih tinggi mengalami diabetes melitus, hipertensi, dan berbagai komplikasinya yang dapat menurunkan ketahanan hidup. Yogyakarta menempati peringkat 1 nasional terkait lansia yang dapat hidup melebihi angka harapan hidup. Oleh karena itu, dilakukan penelitian ini untuk mengetahui hubungan tekanan darah dan kadar glukosa darah pada pasien lanjut usia dengan usia di atas angka harapan hidup yang berisiko mengalami diabetes melitus dan hipertensi di Sleman.

Tujuan :

Mengetahui hubungan tekanan darah dan kadar glukosa darah puasa ada pasien lanjut usia dengan usia di atas angka harapan hidup (76 tahun untuk perempuan dan 74 tahun untuk laki-laki) di Sleman: *Cross-Sectional Study*.

Metode :

Metode penelitian *cross-sectional* pendekatan retrospektif dengan subjek pasien lansia berusia di atas angka harapan hidup di Sleman. Data dianalisis menggunakan *independent sample T-test* pada SPSS. Analisis hubungan dilakukan menggunakan *pearson correlation* dan *simple linear regression* dengan data dari HDSS (*Health and Demographic Surveillance System*) secara *consecutive sampling* di sekitar wilayah Sleman pada periode Oktober-November 2021.

Kesimpulan :

Tidak terdapat hubungan bermakna antara tekanan darah dan kadar glukosa darah puasa ada pasien lansia dengan usia di atas angka harapan hidup di Sleman.

Kata kunci : glukosa darah puasa, lansia, hipertensi, diabetes, tekanan darah, *Cross-Sectional study*.

ABSTRACT

Relationship Between Blood Pressure and Fasting Blood Glucose Levels in Elderly Patients in Sleman: A Cross-Sectional Study

Azaqi Ananta Boga¹⁾ Hemi Sinorita²⁾ Dwita Dyah Adyarini²⁾

Medical Study Program Faculty of Medicine Gadjah Mada University

Background :

Aging is a process of natural changes in the body due to aging which causes decreased function of pancreatic β cells and insulin resistance. Decreased pancreatic β -cell function and insulin resistance result in an increase in fasting blood glucose and hyperglycemia. Hyperglycemia increases the production of advance glycation end products (AGEs) so that reactive oxygen species (ROS) increases and nitric oxide (NO) decreases in the endothelium. Decreased NO in the vascular causes vasoconstriction of blood vessels which results in hypertension. A decrease in physical activity and an increase in body calories in the elderly can cause obesity which triggers a decrease in endothelial nitric oxide, which leads to hypertension. Previous research conducted in China explained that there was a positive relationship between blood pressure and fasting blood glucose levels based on gender. Research on the relationship between blood pressure and fasting blood glucose levels has not been carried out in Sleman in the elderly with an age above life expectancy. Elderly people above life expectancy are generally at higher risk of developing diabetes mellitus, hypertension and their various complications which can reduce survival. Yogyakarta is ranked 1st nationally in terms of elderly who can live beyond life expectancy. Therefore, this study was conducted to determine the relationship between blood pressure and blood glucose levels in elderly patients with an age above life expectancy who are at risk of developing diabetes mellitus and hypertension in Sleman.

Objective :

This study aims to determine the relationship between blood pressure and fasting blood glucose levels in elderly patients with above life expectancy in Sleman: Cross-Sectional Study.

Method :

The research method uses a cross-sectional retrospective approach with elderly patients with ages above life expectancy in Sleman. Data were analyzed using an independent sample T-test on SPSS. Relationship analysis was performed using pearson correlation and simple linear regression. The data for this study were obtained from a sample HDSS (Health and Demographic Surveillance System) data taken by consecutive sampling around the Sleman area in the October-November 2021 period.

Conclusion:

There is no significant relationship between blood pressure and fasting blood glucose levels in elderly patients with above life expectancy in Sleman

*Keyword : fasting blood glucose, elderly, hypertension, diabetes, blood pressure,
Cross-Sectional study*

