

***The Relationship between Antioxidant Intake (Vitamin C, Vitamin E),
Magnesium and Blood Pressure with Blood Glucose Levels DMT2
Patients
at Kaliwates Hospital, Jember***

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ABSTRACT

Type 2 diabetes mellitus is a metabolic disease characterized by elevated blood glucose levels due to impaired insulin secretion, insulin resistance, or a combination of both. Oxidative stress plays a role in decreased insulin sensitivity and impaired glucose metabolism. Antioxidant intake (vitamin C, vitamin E) and magnesium intake play a role in maintaining glucose homeostasis. In addition, blood pressure is an important aspect in the management of type 2 diabetes mellitus. This study aims to analyze the relationship between vitamin C, vitamin E, magnesium, and blood pressure intake with random blood glucose levels in type 2 diabetes mellitus patients at the Internal Medicine Clinic of Kaliwates General Hospital, Jember. This type of study is an observational quantitative analytic with a cross-sectional approach involving 59 patients aged 21–60 years. Vitamin C, vitamin E, and magnesium intake were obtained using a Semi Quantitative Food Frequency Questionnaire (SQ-FFQ). Blood pressure was measured using a Sinocare BA 801 sphygmomanometer, while random blood glucose levels were measured using a Family Dr. glucometer. The average random blood glucose level was 186 mg/dL, vitamin C intake was 89.75 mg/day, vitamin E intake was 6 mg/day, magnesium intake was 288.31 mg/day, and blood pressure was 138/82 mmHg. Spearman correlation test showed no significant relationship between vitamin C intake ($p=0.830$; $r=0.029$), vitamin E intake ($p=0.567$; $r=0.076$), magnesium intake ($p=0.444$; $r=0.102$), and blood pressure intake ($p=0.845$; $r=-0.026$) with random blood glucose levels. It was concluded that vitamin C, vitamin E, magnesium intake, and blood pressure were not related to random blood glucose levels in type 2 diabetes mellitus patients at the Internal Medicine Clinic of Kaliwates General Hospital, Jember.

Keywords: *vitamin C intake, vitamin E intake, magnesium intake, type 2 diabetes mellitus, random blood glucose, blood pressure,*