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Assessing relationship between dietary intakes, antioxidant micronutrients status and risk of cardiovascular diseases among type 2 diabetic outpatients at teaching hospital in Ghana

Odeafo Asamoah-Boakye
Kwame Nkrumah University of Science and Technology, Ghana

Cardiovascular diseases are associated with type 2 diabetes mellitus and concurrently, cause of 68% mortality among type 2 diabetics. Antioxidant micronutrients level can delay or prevent diabetic complications including CVDs. The study aimed to assess relationship between dietary intakes, antioxidant micronutrients status and risk of cardiovascular diseases among type 2 diabetic outpatients. A cross sectional study was conducted. The BMI, waist circumference fasting blood glucose, HbA1c, lipids profile, coronary risk, atherogenic index of plasma, and serum zinc were determined. Sociodemographic data was collected with questionnaires. Dietary intakes of antioxidant micronutrients were assessed using 24-hour dietary recall. Data was analyzed using SPSS version 23. Out of 152 study population, 37 (24.3%) were males and 115 (75.7%) were females. Generally, 74.3% of study subjects were hyperglycemic. The prevalence of single dyslipidemia (63.8%) and combined dyslipidemia (15.8%) was found among study participants. Furthermore, 35.3% of study participants had high coronary risk and 5.3% had high atherosclerosis risk. The mean intakes of zinc (5.04±2.76 mg/day), vitamin E (5.16±2.60 mg/day) and vitamin C (82.72±38.76 mg/day) were observed low. Adjusting for age and gender; inadequate vitamin E was directly associated with HbA1c, (r=0.220, p=0.033), TC, (r=0.260, p=0.011), LDL-C (r=0.267, p=0.009) and TC/HDL-C ratio, (r=0.217, p=0.036). Additionally, controlling for age, gender and dietary zinc; serum zinc was inversely associated with HbA1c (r=-0.227, p=0.05) and FBG, (r=-0.206, p=0.033). Status of antioxidant micronutrients were low among study participants, and associated with dyslipidemia and hyperglycemia; increasing CVDs risk.

odeafo2010@yahoo.com