

Selected minerals status, body size, and dietary intake, in newly diagnosed non-insulin-dependent diabetic individuals

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Abstrak

A cross sectional study was conducted to investigate magnesium and zinc status in newly diagnosed non-insulin-dependent diabetes mellitus. In addition, macronutrients, magnesium and zinc intakes and WHR were evaluated in relation to the prevalence of NIDDM. Using 1994 WHO criteria for diabetes, sixty three (27 males and 36 females) newly diagnosed NIDDM attending outpatient clinic at general hospital in Semarang were recruited into the study. Data collection was undertaken from October 1997 to February 1998. Seventeen diabetic patients had retinopathy, which was confirmed by ophthalmologist consultation, and twenty-three had history of high blood pressure. Sixty three hospital staffs and the relatives of the diabetics, matching for gender were recruited for control (non diabetics) group.

Using structured questionnaire, information about socioeconomic and sociodemographic were obtained. Data of dietary intake were obtained using 2 days repeated 24-hour recall, and anthropometric measurements including: weight, height, waist and hip circumference were performed. Urine and 5 ml venous blood sample were taken from each subject for blood glucose, plasma and urinary minerals analysis.

Diabetics had significantly higher waist and WHR compared to non diabetics, and WHR was positively correlated with NIDDM and inversely correlated with age. Retinopath diabetics had lower BILE but had significantly higher WHR compared to nonretinopaths. Higher intake of energy was observed in diabetics which was attributable to higher intake of carbohydrate. Diabetics also had slightly higher magnesium and zinc intakes. However, significantly lower plasma magnesium and hypermagnesuria were detected in diabetic patients. Diabetics also had slightly lower plasma zinc and slightly higher urinary zinc compared to non diabetics.

No difference in minerals status was found between retinopaths and non retinopaths. Diabetics who had history of hypertension had lower plasma zinc than those who had not, but no association was found between minerals status and retinopathy.