

## **Nutritional status, glycemic control and its associated risk factors among a sample of type 2 diabetic individuals, a pilot study**

### **ABSTRACT**

**Background:** The prevalence of type 2 diabetes is increasing in Malaysia, with most patients poorly controlled. Hence, this study aimed to determine nutritional and metabolic status as well as blood pressure of Malaysian patients with type 2 diabetes mellitus and identify associated risk factors for poor glycemic control.

**Materials and Methods:** A total of 104 type 2 diabetic patients were recruited and completed a questionnaire covering socio-demographic status, 3-day diet records, and physical activity. Anthropometry and glycemic control parameters, lipid profile and blood pressure were also measured.

**Results:** Subjects were on average  $56.7 \pm 9.9$  years old with a mean duration of diabetes of  $6.5 \pm 5.0$  years. The mean hemoglobin A1c of the subjects was  $7.6\% \pm 1.4\%$ , with only 20.2% achieving the target goal of  $<6.5\%$  with no significant differences between genders. The mean body mass index was  $26.9 \pm 4.7$  kg/m<sup>2</sup>, with 86.5% either were overweight or obese. Only 10.6% of the subjects exercised daily. The proportions of macronutrients relative to total energy intake were consistent with the recommendations of most diabetes associations. The adjusted odds of having poor glycemic control were 3.235 (1.043-10.397) ( $P < 0.05$ ) higher among those who had high density lipoprotein cholesterol levels below the normal range. Those taking one or two types of oral anti-diabetic drugs had 19.9 (2.959-87.391) ( $P < 0.01$ ) and 14.3 (2.647-77.500) ( $P < 0.01$ ) higher odds of poor glycemic control respectively compared to those who were being treated by diet alone.

**Conclusion:** Poor glycemic control was prevalent among Malaysian diabetic patients, and this could be associated with low levels of HDL and being treated with oral anti-diabetes agents.

**Keyword:** Body mass index; Dietary intake; Glycemic control; Lipid profile; Nutritional status; Oral hypoglycemic agents; Physical activity; Type 2 diabetes mellitus