

## **Risk factors for development of long term complications of type 2 diabetes mellitus in patients attending a diabetic clinic**

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Diabetes mellitus (DM) is one of the most common chronic disorders, affecting a large number of people of all social conditions throughout the world. The objective of this study was to identify the risk factors for development of long-term complications in patients with type 2 diabetes mellitus.

This case control study was conducted over a period of 2 months at the out patient diabetes clinic of the Balapitiya Base Hospital. Seventy-five cases (DM with one or more long term complications) and 75 controls (DM without long term complications) were selected. The long term complications considered were diabetic retinopathy, neuropathy, nephropathy and coronary heart diseases. An interview schedule and clinic record books were used to obtain the information on socio-demographic, life style and health status. Weight, height, waist and hip circumferences were measured. Food frequency questionnaire and 24-hour dietary recall method were used for dietary assessment. The strength of the association between exposure and disease was determined by calculating odds ratio. Food base computer software was used to measure the nutrient intake of subjects.

Mean body mass index (BMI) and waist to hip ratio (WHR) were higher in cases than controls ( $P < 0.005$ ). Subjects who had diabetes more than 10 years and fasting blood glucose (FBG) level more than 120 mg/dL were more likely to develop long-term complications (OR=2.6; 95% CI, 0.99 to 7.22 and OR=2.5; 95% CI, 1.21 to 5.34 respectively). Subjects who had diastolic blood pressure (DBP) more than 95 mmHg and BMI more than 25 kg/m<sup>2</sup> were having increased risk of developing long-term complications (OR=2.3; 95% CI, 1.13 to 4.73 and OR= 5.5 ; 95% CI, 1.51 to 8.99 respectively). Subjects who had WHR more than 0.9 in males and more than 0.85 in females were more likely to develop long-term complications (OR=6.2; 95% CI, 0.96 to 45.69 and OR=3.6; 95% CI, 1.48 to 9.05 respectively). Subjects who smoked cigarettes and consumed alcohol were more likely to develop long-term complications (OR=6.7; 95% CI, 0.02 to 1.08 and OR=8.5; 95% CI, 1.17 to 79.00 respectively). Subjects who did heavy physical activities were 0.85 times less risk to develop long-term complications (95% CI, 0.42 to 1.71). Cases consumed higher amounts of protein, and fat than controls. It was concluded that, age > 60, BMI > 25 kg/ m<sup>2</sup>, higher WHR, having DM > 10 y, DBP > 95 mmHg, FBG > 120 mg/dL, cigarettes smoking, alcohol consumption, less physical activity, intake of high fat and high protein diet, were the risk factors which may contribute to develop long-term complications in patients with type 2 diabetes mellitus.

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