Determinants of glycaemic control among type 2 diabetes mellitus patients in Northern State of Kedah, Malaysia: a cross-sectional analysis of 5 years national diabetes registry 2014-2018

ABSTRACT

Introduction: type 2 diabetes mellitus has become a global public health crisis. The increment in the cases has contributed significantly to the parallel increase in the prevalence of overweight and obesity. This paper aimed to analyse the relationship between lipid profile, waist circumference and body mass index (BMI) with the glycaemic control of the diabetes patients in Kedah. Methods: a cross-sectional study was conducted, using the Kedah audit samples data extracted from the National Diabetes Registry (NDR) from the year 2014 to 2018. A total of 25,062 registered type 2 diabetes mellitus patients were selected using the inclusion and exclusion criteria from the registry. Only patients with complete data on their HbA1C, lipid profile, waist circumference and BMI were analysed using SPSS version 21. Results: the means for the age, BMI and waist circumference of the samples were 61.5 (±10.85) years, 27.3 (±5.05) kg/m2 and 89.46 (±13.58) cm, respectively. Poor glycaemic control (HbA1c>6.5%) was observed in 72.7% of the patients, with females having poorer glycaemic control. The BMI and waist circumference were found to be significantly associated with glycaemic control ($P<0.001$). The total cholesterol, triglycerides and low-density lipoproteins values showed positive correlation with glycaemic control ($r = 0.178, 0.157, 0.145$, $p<0.001$), while high-density lipoproteins values are negatively correlated ($r = -0.019$, $p<0.001$). Conclusion: implementing lifestyle changes such as physical activity and dietary modifications are important in the management of BMI, waist circumference and body lipids, which in turn results in improved glycaemic control.