INTRODUCTION

Type 1 diabetes mellitus is a metabolic disease characterized by hyperglycemia resulting from defect in insulin secretion due to autoimmune destruction of β-cells of the pancreatic islets which leads to absolute insulin deficiency. Its incidence varies considerably worldwide, being highest in Finland, probably related to genetic, dietary, and environmental factors that participate in this autoimmune process.

Both genetic and environmental factors are main agents participating in this autoimmune process.

Patients and Methods

A case control study was performed in Pediatric Endocrinology and Diabetic Clinic at two Teaching Hospital for Children in two governorate in the middle of Iraq, between 2nd of September 2016 to the 30th of October 2017. The aim of the study was to assess the status of vitamin D among children and adolescents with type 1 diabetes attending endocrinology and diabetes clinics. 185 subjects were enrolled in this study. consisted of two groups; 121 cases (48 male and 73 female), aged 5 years to 16 years with type 1 diabetes mellitus for more than one year and without any chronic illness rather than type 1 diabetes mellitus. 64 controls (38 female and 26 male) non diabetic attending the pediatrics clinic for other reasons. Subjects were excluded from the study if they had consumed vitamin D, and or calcium supplementation during last one year.

25(OH) D3 blood level was measured using the ELFA technique (Enzyme Linked Fluorescent Assay) in mini vidas immunoassay analyzer. Glycosylated Hemoglobin measured by High performance gel chromatography “HPLC BIO-RAD D10”. Vitamin D status classified according to American academy of pediatrics recommendations. sufficiency defined as 25(OH)D3 between 21-100 ng/ml technique (Enzyme Linked Fluorescent Assay) in mini vidas immunoassay analyzer. Glycosylated Hemoglobin measured by high performance gel chromatography “HPLC BIO-RAD D10”. Vitamin D status classified according to American academy of pediatrics recommendations. sufficiency defined as 25(OH)D3 between 21-100 ng/ml technique (Enzyme Linked Fluorescent Assay) in mini vidas immunoassay analyzer.

RESULTS

There is no difference in age between cases (M=11.28, SD=3.28) and the controls (M=10.62, SD=3.80) groups; t(169)=1.14, p=0.252.

There is no difference in gender between cases and controls (z²(1, N = 185) = 1.007, p = 0.31).

CONCLUSIONS AND RECOMMENDATIONS

This study highlighted the importance of vitamin D screening for all children and adolescents with type 1 diabetes. As the prevalence of vitamin D deficiency in type 1 diabetic children is relatively high Therefore, awareness to increase sunlight exposure and vitamin D supplementation for diabetic children is important. Also the study showed strong negative correlation between HbA1c and vitamin-D level. Further studies are needed to investigate the effect of vitamin D deficiency on glycomic control.

References