

Hepatitis A infection and occurrence of Insulin dependent diabetes mellitus in a sample of Iraqi children

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Abstract

Background: Hepatitis A is an important endemic disease in Iraq. And Insulin dependent diabetes is one of serious chronic disease that affect children.

Objective: To study the possible relationship between viral hepatitis A infection and occurrence of diabetes mellitus in Iraqi children.

Method: A case control study was done on hundred newly diagnosed diabetic children, who were compared to hundred control children. Serological test were done to both groups to detect antibodies against Hepatitis A by using ELISA method. This study started on 1st of November 2006 and ended at 20th of December 2008. Both groups were collected from

Al-Kadhymia Teaching Hospital and Al-Noor General Hospital.

Result: There was slight increase incidence of diabetes mellitus in females (56%) than males (44%) and there was significant negative correlation between Hepatitis A and diabetes mellitus since 11% of diabetic children had positive serological test while 26% of control children had positive result.

Conclusion: there was no relationship between hepatitis A infection and occurrence of IDDM.

Keywords: Hepatitis A, diabetes mellitus, children.

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Introduction

Type 1DM develops as a result of the synergistic effects of genetic, environmental and immunologic factors that ultimately destroy the pancreatic beta cells^(1, 2). Autoimmune process is thought to be triggered by an infectious or environmental stimulus and to be sustained by a beta cell –specific molecule. A number of viruses have been shown to infect the pancreas and induce acute and chronic pancreatitis⁽³⁾. The mechanism of pathogenesis of viral infections of the pancreas have been described clearly with the use of animal models of pancreatitis and Coxsackie's virus infections^(4,5). However, acute hemorrhagic pancreatitis complicating mumps infection has been reported.

As the cell that produce insulin are destroyed the patient become permanently diabetic⁽⁶⁾. In addition to infection by Coxsackie virus and mumps virus infection, other viral agents such as congenital rubella, herpes simplex, varicella, hepatitis and cytomegalovirus have been proposed as being capable to triggering the development of diabetes mellitus type 1^(7,8).

hepatitis A is an infectious disease commonly found in many developing countries, Also it is common even in developed countries and they found that, hepatitis A infection occurred in about 40% of urban population in the united states⁽⁹⁾.

Hepatitis A infection usually is asymptomatic in children and only small percentage has clinical hepatitis of varying severity⁽¹⁰⁾.

Viral infection induces interferon α , and through a complex signal transduction pathway which induces the key antiviral enzyme 25-oligoadenylate synthetase

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