Journal of Diabetes & Metabolism
ISSN: 2155-6156
OPEN ACCESS Freely available online

Extended Abstract

Arsenic as Diabetogenic agent in the Diabetes Mellitus

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Millions of people die each year due to diabetes, it occurs in all groups of ages but there is no proper cure of this disease. There are so many causes of diabetes like poor life style, genetic factor, environmental pollutants and heavy metals etc. Heavy metals exposure is widespread and type 2 diabetes is reaching epidemic extent. Genetic variations can be considered as internal contributing factors in susceptibility of individuals to heavy metals and metalloids like cadmium, arsenic and related other toxicities. Polymorphism in different genes, which are directly/indirectly involving in the metabolism of arsenic, cadmium and other biological pollutants, may lead to accumulation of these pollutants in the body. It may lead to metabolic disorders such as type 2 diabetes. This study is designed to determine the effect of heavy metals as arsenic exposure as diabetogenic agents on the patients suffering from type 2 diabetes mellitus and its genetic and proteomic analysis against heavy metals. For this purpose, blood samples of diabetes patients will be collected from different areas of Pakistan. All base line hematology, physical, biochemical parameters from blood samples will be assessed by electrophoretic, chromatographic and mass spectrometric analysis. Genomic, Proteomic, Atomic Absorption analysis will be carried out by using advanced molecular biology techniques. In the present work, main focus on some of the most important heavy metals like arsenic exposure, their properties and effects that is documented and suspected risks on the human population. In this work, the main purpose is to determine the effect of arsenic exposure on type 2 diabetes mellitus, the expression of genes and proteins on human blood and help in early diagnosis, preventive and management of the disease.

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Received: July 27, 2020; **Accepted:** July 24, 2021; **Published:** July 31, 2021

Citation: Samreen R (2021) Arsenic as Diabetogenic agent in the Diabetes Mellitus. J Diabetes Metab. 12:888.