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Toxicology of Anti-Diabetics Drug

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Abstract

Diabetes mellitus is the century's epidemic and diabetes continues to increase at an early phase without appropriate diagnostic techniques. Data shows that about 1 in 4 persons with this illness are unaware. Type 2 diabetes is defined as relative insulin deficiency caused by β-cells (present in the pancreas) dysfunction. It is a chronic complex disorder that requires patient self-management for control of abnormal glucose levels and continuous medical care, and multifactorial risk reduction strategies to normalize blood glucose levels, lipid profiles, and blood pressure to avert or diminish short and long term issues.

Introduction

Diabetes mellitus (DM) is a group of metabolic diseases characterized by chronic hyperglycemia resulting from

Defects in insulin secretion, insulin action, or both. Its prevalence has been increasing steadily all over the world. There's no cure for diabetes. When you have type 2 diabetes, your pancreas usually creates some insulin. But either it's not enough or your body doesn't use it like it should. Insulin resistance, when your cells don't respond to insulin, usually happens in fat, liver, and muscle cells [1-3]. Treatment for type 2 diabetes involves keeping a healthy weight, eating right, and exercising. Some people need medication, too. People living with type 2 DM are more vulnerable to various forms of both short- and long-term complications, which often lead to their premature death. Metformin drug has been shown to prevent diabetes in people who are at high risk and decrease most of the diabetic complications. Recent reports on metformin, not only indicate some implications such as reno protective properties. Have been suggested for metformin, but some reports indicate its adverse effects as well that are negligible when its Benefits are brought into account [4].

Pharmacodynamics of metformin

It works mainly by suppressing excessive hepatic glucose production, through a reduction in gluconeogenesis. Other potential effects of metformin include an increase in glucose uptake, an increase in insulin signaling, a decrease in fatty acid and triglyceride synthesis, and an increase in fatty acid β-oxidation [5].

Adverse effect

Diabetes mellitus is rising to an alarming epidemic level. Early diagnosis of diabetes and prediabetes is essential. Screening for diabetes especially in underdeveloped countries is essential to reduce late diagnosis. Metformin has not significant adverse effects; however, it may cause a serious condition called lactic acidosis.

Metformin usually does not cause hypoglycemia; however, low blood sugar may occur if this drug is used with other

Anti-diabetic drugs. Gastrointestinal intolerance is one of the most frequently occurred and lactic acidosis is a rare, but causes serious adverse effects. Metformin is a first-line therapy for type 2 Diabetes mellitus and is one of the most commonly prescribed drugs.

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