1. INTRODUCTION

Diabetes Mellitus is a metabolic disorder characterized by chronic hyperglycaemia and glucosuria produced by an absolute or relative insufficiency of insulin. The ailment may result in the development of further metabolic and anatomic disturbances among which is lipemia, hypercholesterolemia, and loss of weight, ketosis, arteiosclerosis, and gangrene, pathologic changes in the eye, neuropathy, renal disease and coma. Diabetes is often called ‘the silent killer’, because it causes serious complications without serious symptoms, and can affect many of the major organs in the body. Hyperglycaemia and glucose intolerance are common manifestation of several types of hormonal disturbances or imbalances, of which the most important is diabetes mellitus.

It affects the metabolism of carbohydrates, proteins and lipids. It is characterized hyperglycemia (an increased blood glucose levels) and also a defect in Insulin secretion and Insulin action or both.

Mainly diabetes is classified into following types,

- Type 1 Diabetes Mellitus
- Type 2 Diabetes Mellitus
- Gestational Diabetes
- Miscellaneous

Type 1 is an auto immune disorder, the main cause of this is beta cell loss by T-cell mediated autoimmune attack. It is also characterized by loss of the insulin-producing beta cells of the islets of Langerhans in the pancreas, leading to a deficiency of insulin.

Type 2 diabetes mellitus characterized by insulin resistance or reduced insulin sensitivity, combined with reduced insulin secretion. Variants in 11 genes significantly associated with the risk of Type 2 diabetes of these 8 genes are responsible for impaired beta-cell function.

Gestational diabetes is defined as, diabetes that begins during pregnancy where there is a change in the glucose metabolism and resistance to insulin or glucose tolerance test. It is more common in obese patients.