

1.4.2. Diabetes Mellitus

Insulin is used for the treatment of diabetes. The term diabetes mellitus describes a metabolic disorder of multiple etiologies characterized by chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both (American Diabetes Association, 2009). The effects of diabetes mellitus include long-term damage, dysfunction and failure of various organs. Diabetes mellitus may present with characteristic symptoms such as thirst, polyuria, blurring of vision, and weight loss. In its most severe forms, ketoacidosis or a non-ketotic hyperosmolar state may develop and lead to stupor, coma and, in absence of effective treatment, death (Prabhu et al., 2012).

The diabetes is classified into four groups: (i) type 1 diabetes mellitus; (ii) type 2 diabetes mellitus; (iii) diabetes mellitus those due to other specific mechanisms of elevated blood glucose or non-pancreatic diseases; and (iv) gestational diabetes mellitus (Craig et al., 2014). Type 1 diabetes (insulin dependent diabetes mellitus, IDDM) is characterized by destruction of pancreatic β -cells, or the insulin-producing cells of the body. Type 2 diabetes (non-insulin dependent diabetes mellitus, NIDDM) is characterized by combinations of decreased insulin secretion and decreased insulin sensitivity (insulin resistance). Gestational diabetes (GDM) is defined as any abnormality in glucose levels noted for the first time during pregnancy.