1. INTRODUCTION

Diabetes mellitus is the name given to group of disorders characterized by absent or deficient insulin secretion or peripheral insulin resistance resulting in hyperglycemia. Impaired metabolism of number of biomolecules such as glucose, lipids, proteins and glycoproteins has been reported in diabetes mellitus (Dhawan et al., 1996).

The first systematic description was written by the Arelacus of Cappadosis in Asia Minor, probably in the 1\textsuperscript{st} century AD, indicating the disease as “A MELTING DOWN OF FLESH INTO THE URINE”. The discovery by Van Mering and Minikowaski in 1889 pointed out that pancreactomy causes a metabolic disorder called diabetes mellitus and is the result of insulin deficiency (Suryawanshi et al., 2006).

The etiological classification of Diabetes includes type I (formerly known as insulin dependent diabetes mellitus or IDDM) and type II (formerly known as non-insulin dependent diabetes mellitus or NIDDM), due to specific mechanisms of diseases and gestational diabetes.

Diabetes mellitus type I is characterized by destructive lesions of pancreatic beta cells by an auto-immune mechanism. Type II diabetes is characterized by a combination of decreased insulin secretion and sensitivity (Kuzuya et al., 2002).

Diabetes is a major public health problem and is emerging as a pandemic. Incidence of type II diabetes is rapidly increasing worldwide. Diabetes is affecting approximately 3\% of the population worldwide, 90\% of which suffer from type II diabetes (Skyler, 2004).

Liver is an insulin dependent organ and is severely affected during diabetes (Seifter and England, 1982). Liver participates in the uptake, oxidation and metabolic conversion of free fatty acids, synthesis of cholesterol, phospholipids and triglycerides (TGs). During diabetes an alteration in the concentration and composition of lipids occur
(Sochor \textit{et al}., 1985). Decreased glycolysis, impeded glycogenesis and increased glyconeogenesis are some of the changes of glucose metabolism in the diabetic liver (Baquer, 1998).

Free radicals are also involved in the pathogenesis of diabetes leading to atherosclerosis. In diabetes, blood glucose is not utilized by tissue resulting in hyperglycemia.

Antioxidant defense systems are also disturbed in diabetes mellitus (Jones \textit{et al}., 1988). Oxidative stress cause damages in cellular membranes and changes in structural and functional integrity of sub cellular organelles and may produce effects that result in various complications in diabetic disease (Mercuri \textit{et al}., 2000).

Insulin has been also reported to increase the cholesterol synthesis. From this point of view the assessment of various lipid fractions in the cases of diabetes may be of help in the prognosis of patients and in preventing the possibilities of secondary disorders (Jain and Gupta, 1980). The number of people suffering from diabetes all over the world has scored to 246 million and the disease now kills more people than the AIDS does (Wild \textit{et al}., 2004).

Although the two types of the diabetes have distinct pathogeneses, hyperglycemia and various life threatening complications resulting from long term effects are common to both (Abraira \textit{et al}., 1995). Diabetes leads to major complications such as diabetic neuropathy, nephropathy, retinopathy and cardiovascular diseases (Jarald \textit{et al}., 2008). Diabetes has become the most common single cause of end stage renal disease the world wide (Ashok Kumar Das and Thomas Mathew, 2000).

Diabetes mellitus is a major health problem not only in urban but also in the rural areas of India. Patients of rural areas usually do not register themselves in diabetic clinics or hospitals because the medical facilities are mainly concentrated in the urban areas. So
with the ever-increasing incidence of diabetes, its management is becoming costly not only for the individual and his/her family but also for the national health care sector.

The World Health Organization (WHO) estimates that by the year 2030, the number of people with diabetes will be 370 million. Today, India has 25 million diabetic patients, more than any other country and the number is expected to rise to 57 million by 2025 (Meena and Pasupathy, 2006).

Diabetic patients typically have delayed or impaired wound healing, and may develop chronic ulcers (Lateef et al., 2005). Diabetic ulcers of lower limbs and feet are associated with high morbidity and now is a common ailment (Cheryl A Lans, 2006).

Attempts to attain strict glucose control when managing diabetes had traditionally utilized daily injections [SC] of human insulin. This strategy offered improvements in glycemic control but was unable to replicate or to reinstate a normal pattern of glucose homeostasis (Bailey and Nattrass, 1998).

The availability of new oral hypoglycemic drugs for diabetes have almost declined. The use of sulfonylurea and metformin is restricted by their pharmacokinetic properties, secondary failure rates and accompanying side effects (Melander, 1988 and De Smet, 1997).

The World Health Organization expert committee on diabetes has listed as one of its recommendations that traditional methods of treatment for diabetes should be further investigated (WHO Expert Committee). It is documented that 80% of world’s population relies on traditional medicine for their primary healthcare needs.

India is rich and unique with rare biodiversity of medicinal plants. We have a rich history of the therapeutic usage of medicinal plants (Khosla et al., 2000). More than 400 different plants and plant extract have almost been described for the treatment of diabetes
throughout the world, but only a small number of these have received scientific and medical evaluation to assess their efficiency (De Smet, 1997).

These plants have been experimentally studied for hypoglycemic activity and 42 of them are specially used in the treatment of diabetes (Kar et al., 2003).

In recent times various medicinal plants are becoming very popular for the treatment of diabetes in our country as well as all over the world. Current medication options for the treatment of diabetes are relatively limited, have non-negligible side effects and must often be prescribed in combination (Cheng and Fantus, 2005). In large number of cases, treatment with traditional medicines in the form of plant extracts have been reported to give remarkably good results (Meena and Pasupathy, 2006).

The use of natural health products as complementary or alternative approaches to existing medications is growing in popularity. Practice of traditional medicine in the treatment of diabetic disease have assumed a more scientific and broader dimension. Emphasis on ethnomedicine is on an increase, especially in developing countries, where the primary health care needs of the populace are not easily affordable.