Clinical Application of Gymnema Sylvestre’s Q in NIDDM
(Advancements in Homeopathic Research, Vol. 2 No. 3, August 2017-October 2017,
Date of Publication 2017/8/1, Pages no.52--59)

Bhasker Sharma*
*B.H.M.S, M.D (Homoeopathy Material Medica),
M.D (Organon of Homoeopathic Medicine),
Sharma Homoeopathy Chikitsalya And Research Center, Itwa Bazar, Siddharthnagar, Utter Pradesh
Address for correspondence;
Dr. Bhasker Sharma
Sharma Homoeopathy Chikitsalya And Research Center, Itwa Bazar, Siddharthnagar, Utter Pradesh
Email-homoeobhasker1978@gmail.com. M.9450549895

Abstract
Across the globe, there are an estimated 150 million people suffering from diabetes mellitus. Each of there people is at an increased risk of developing a number of complications, each of which are associated with a reduction in quality of life and an increase in individual morbidity and mortality. However, despite these psychosocial implications, as well as the financial burden associated with the management of the disease, existing treatment options are costly, and have limited, palliative effects. One treatment that is emerging as a potential panacea for the management of diabetes is Gymnema sylvestre. Yet, what evidence is there to support the use of this extract? In order to answer this question, a systematic review of the literature and a discussion of the best available evidence on Gymnema are needed.

Diabetes mellitus is a disorder of carbohydrate, fat, and protein metabolism, characterized by chronic hyperglycemia and the development of chronic, severe complications.

At present, it is estimated that 150 million people across the globe have diabetes, with the number expected to increase to 366 million by the year 2030. Given this rise in the prevalence of diabetes, the myriad associated complications, and the shortfalls of existing treatment options, more effective interventions need to be sought.

In view of the fact that more than 800 plants have traditionally been used for the treatment of diabetes, and that most plants have a spectrum of clinical effects, it can be speculated that the field of phytomedicine may offer an innovative solution to this chronic disorder. Yet, according to an earlier review of herbs and nutrient supplements that were claimed to improve glycemic control, few plants were supported by rigorous clinical evidence. The herbs that did demonstrate positive clinical effects were gymnema (Gymnema sylvestre (Retz.) R.Br. ex Schult), ivy gourd (Coccinia indica Wight & Arn.) bitter melon (Momordica charantia L.), aloe vera (Aloe vera (L.) Burm. f.) American ginseng (Panax quinquefolius L.) and gracemerepear (Opuntia streptacantha Lem.). Of particular interest was the herb gymnema, because of its long history as a treatment for diabetes, and its range of unique and varied effects. Before the clinical effects of gymnema are discussed in detail, however, it is important to first examine the etiology, implications, and current management of diabetes to better understand why G. sylvestre may be a potentially useful treatment for diabetes mellitus.

Taking in to account the increasing prevalence of diabetes across the globe, as well as the associated complications of the disease, it is likely that diabetes will consume a significant proportion of health care resources in the future. For example, diabetes mellitus is associated with myriad complications, including diabetic nephropathy, retinopathy, peripheral neuropathy, autonomic dysfunction, erectile dysfunction, atherosclerosis, hypertension,
microvascular disease, and increased susceptibility to infection. Each of these complications is associated with a reduction in quality of life and an increase in individual morbidity and mortality. In fact, compared to nondiabetic people, individuals with diabetes have a two- to fourfold greater risk of cardiovascular disease, a fivefold increased risk of blindness, four times the rate of kidney disease, three times the incidence of destructive periodontal disease, and an increased rate of depression.

Increasing age, for instance, is associated with a greater incidence of type 2 diabetes. It is believed that advancing age may contribute to the development of insulin resistance and diabetes through increased visceral adiposity, elevated cellular triglyceride levels, and increased numbers of proinflammatory proteins. The role of these inflammatory mediators in the development of diabetes in particular has been supported in epidemiologic, experimental and clinical studies, with an increase in the leukocyte count and the level of inflammatory markers released from adipose tissue found to predict the development of type 2 diabetes.

As highlighted above, elevated lipid levels, particularly free fatty acids, as well as obesity and reduced physical activity, may all contribute to the development of insulin Resistance.

Although the abovementioned enzymatic and target cell defects are likely to play an important role in the pathogenesis of diabetes, a factor that is key to the development of this disorder is impaired pancreatic beta cell activity. To illustrate, individuals without cell defects can compensate for insulin resistance indefinitely; however, once insulin secretion falls to a level that can no longer compensate for insulin resistance, type 2 diabetes is likely to develop. Thus, the preservation of cell function is critical to attenuating the development of diabetes.

Therefore, given that beta cell activity and cell mass may both decline in the presence of hyperglycemia and hyper-triglyceridemia through a possible glucolipotoxic effect; it is possible that cell function could be preserved through early and effective control of blood glucose and blood lipids. However, even though such a claim is supported by experimental research findings, 17 data from clinical studies are inconsistent, and therefore require further investigation.

However, given the invasive nature of the procedure, the high cost, limited accessibility to all populations, the limited supply of islet cells, the need for technical expertise, and the risk of infection, malignancy, rejection, and autoimmune destruction, other safer and more costeffective treatments that target a number of etiologies of diabetes mellitus need to be considered. One treatment that is showing promise in controlled clinical trials, and a herb that is most frequently prescribed by herbalists for improving glycemic control, is Gymnema sylvestre (gymnema)

Gymnema, or gurmar, is a large woody climbing plant found in central and southern India, tropical Africa, and tropical Australia. In the Ayurvedic system of medicine, gymnema is referred to as “mesasrngi” and both the dried leaf (mesasrngi leaf) and dried root (mesasrngi root) are used therapeutically. The leaves of the plant in particular are used as a digestive, antiviral, diuretic, antiallergic, hypoglycemic, hypolipidemic, and antiobesity agent for the treatment of diabetes, obesity, and dental caries. According to the Ayurvedic Pharmacopoeia of India both the dried leaf and root of gymnema, depending on dosage form and formulation, are also used in the treatment of svasa (bronchial asthma), kasa (cough), kustha (leprosy and other skin diseases), and vrana (wounds) among other conditions.

A comprehensive search of the literature was conducted in April 2006 to identify the best available evidence on G. sylvestre and diabetes mellitus. The search used the following databases: AARP Ageline, Allied and complementary medicine, Australasian Medical Index, BioMed Central Gateway, CAM on PubMed, CENTRAL, CINAHL, Cochrane library, Current contents connect, Current controlled trials, Database of Abstracts of Reviews of
Effectiveness, Dissertations Abstracts International, EMBASE, Health source nursing/academic edition, International Pharmaceutical Abstract, MEDLINE, ® and Turning Research Into Practice. The key terms used in the search were Asclepiadaceae, clinical trial, controlled clinical trial, diabetes mellitus, double-blind method, glucose intolerance, Gurmar, Gymnema, Gymnema sylvestre, insulin resistance, metabolic syndrome x, placebo, prospective studies, randomized controlled trial, singleblind method, and type 1 and type 2 diabetes. The search was limited to randomized controlled trials that used orally administered monopreparations of G. sylvestre for glycemic control. Combination or homeopathic preparations of gymnema and studies with insufficient detail were excluded from the review. The prevalence and incidence of diabetes mellitus is rising worldwide. This increasing trend, as well as the significant rise in associated morbidity and mortality, is likely to have a profound impact on families, communities, health care resources, and funding. Thus, new cost-effective interventions that effectively manage the disease need to be sought. Given that G.sylvestre targets several of the etiological factors connected with diabetes, including chronic inflammation, obesity, enzymatic defects, and pancreatic cell function, 33 and no single oral hypoglycemic drug presently exerts such a diverse range of effects, suggests that gymnema may be useful in the management of diabetes and the prevention of associated pathological changes. However, as this systematic review shows, the clinical efficacy of gymnema has only been supported by a small number of nonrandomized, open-label trials. Hence, further investigation in to the clinical effect of G. sylvestre on both diabetes and its associated complications is urgently needed.