DIABETES HERBS

Coccinia indica

Coccinia indica (Bimba in Sanskrit) known as Ivy Gourd has a long history in ancient Indian medicinal system for its use in diabetes, bronchitis and skin diseases. It is a climbing perennial herb, growing wild throughout India.

Dried extract of Coccinia indica is clinically proven in 30 diabetic patients, where it has been postulated to act like insulin, correcting the elevated enzymes glucose-6-phosphatase and LDH in the glycolytic pathway and restore the LPL activity in the lypolytic pathway with the control of hyperglycemia in diabetics. In yet another double blind controlled trial with a preparation from the leaves of the plant on uncontrolled, maturity onset diabetics, out of the 16 patients who received the experimental preparations 10 showed marked improvement in their glucose tolerance while none out of the 16 patients in the dummy group showed such a marked improvement.

Preclinical studies using extract of leaves of coccinia indica reported that blood sugar was depressed by 23% and 27% in the normal fed and streptozotocin-diabetic rats respectively compared with controls which were given distilled water. Thus extensive studies prove the hypoglycemic activity of the leaf extract of Coccinia indica.

Enicostemma littorale

Mamijava (Enicostemma littorale) is a glabrous perennial herb. Traditionally it is used as a stomachic and bitter tonic, used as a substitute for Swertia chirata (the famous Indian bitter) and hence commonly referred as Chota chirayata.

Recent preclinical data has documented the use of extract of E. littorale proving significant increase in the serum insulin levels in alloxan-induced diabetic rats at 8 h. further investigations led to the results suggesting the glucose lowering effect of extract of E. littorale to be associated with potentiation of glucose-induced insulin release through K (+)-ATP channel dependent pathway but did not require Ca(2+) influx.

Yet another preclinical experimental data suggest that the extract of E. littorale is a potent herbal antidiabetic.

Lagerstroemia speciosa

Lagerstroemia speciosa a member of family Lythraceae is a large deciduous tree occurring almost throughout India. Commonly known as Banaba is conventionally used

as purgative and diuretic. A decoction of the leaves, also of dried fruit, prepared like tea, is used for diabetes mellitus in Philippines.

Phytochemical studies showed presence of alkaloids, saponins and flavanoids in leaves. Another triterpene compound known as Colosolic acid is identified in the leaves of Lagerstroemia speciosa & is commonly referred as Botanical insulin.

Randomized clinical trial involving Type II diabetics demonstrated the antidiabetic activity of an extract from the leaves of Lagerstroemia speciosa standardized to 1% corosolic acid. The extract showed a significant reduction in the blood glucose levels. Oral hypoglycemic activity of banaba leaf extract was studied on mild alloxan induced diabetes in albino rats. Significant hypoglycemic activity was observed at a dose of 250 mg/100 g body weight as compared with tolbutamide 20 mg/kg body weight.

Yet another study using hereditary Type II diabetic mice demonstrates the hypoglycemic effects of Lagerstroemia speciosa. The mice were fed a test diet containing 5% of the water extract from banaba leaves for a feeding period of 5 weeks. The elevation of blood plasma glucose level in diabetic mice almost entirely suppressed by addition of banaba extract in the diet. The level of serum insulin and the amount of urinary excreted glucose were also lowered. Plasma total cholesterol level was also lowered in mice fed with banaba extract. It is suggested that banaba leaves extract have beneficial effects on control of the plasma glucose level in Type II diabetes mellitus.

Gymnema sylvestre

Gymnema sylvestre has been used in India for the treatment of diabetes for over 2,000 years. The leaves, when chewed, interfere with the ability to taste sweetness, which explains the Hindi name gurmar—"destroyer of sugar." Gymnema sylvestre is known as Periploca of the woods in English and meshasringi (meaning "ram's horn") in Sanskrit. The primary application was for adult-onset diabetes (NIDDM), a condition for which it continues to be recommended today in India. The major phytoconstituent Gymnemic acid have been shown to block sweet taste in humans.

The effectiveness of Gymnema sylvestre extract is clinically proven in 22 Type 2 diabetes patients. It was administered for 18-20 months as a supplement to the conventional oral drugs. During the supplementation, the patients showed a significant reduction in blood glucose, glycosylated haemoglobin and glycosylated plasma proteins, and conventional drug dosage could be decreased. Five of the 22 diabetic patients were able to discontinue their conventional drug and maintain their blood glucose homeostasis with the extract alone. These data suggest that the beta cells may be regenerated/repaired in Type 2 diabetic patients on Gymnema sylvestre extract supplementation. This is supported by the appearance of raised insulin levels in the serum of patients after supplementation.

Yet another clinical study on extract of the leaves of Gymnema sylvestre, was administered to 27 patients with insulin-dependent diabetes mellitus (IDDM) on insulin therapy. Insulin requirements came down together with fasting blood glucose. Gymnema sylvestre therapy appears to enhance endogenous insulin, possibly by regeneration/revitalisation of the residual beta cells in insulin-dependent diabetes mellitus.

Trigonella foenum-graeceum

Trigonella foenum-graeceum commonly known as fenugreek has been used since ancient times both as a food and medicine. In India the young shoots form a favorite vegetable.

Clinically the effects of extracts of Fenugreek seeds is proven in 25 diabetes patient (type 2 diabetes). It was demonstrated that adjunct use of fenugreek seeds improved glycemic control and decreased insulin resistance in mild type-2 diabetic patients. Another clinical studies, effect of fenugreek seeds on blood glucose and the serum lipid profile was evaluated in insulin-dependent (Type I) diabetic patients. The fenugreek diet significantly reduced fasting blood sugar and improved the glucose tolerance test. There was a 54 per cent reduction in 24-h urinary glucose excretion. Serum total cholesterol, LDL and VLDL cholesterol and triglycerides were also significantly reduced.

Preclinical studies demonstrates that the therapeutic role of fenugreek seed powder in type-1 diabetes can be attributed to the change of glucose and lipid metabolizing enzyme activities to normal values, thus stabilizing glucose homeostasis in the liver and kidney.

Momordica charantia

The generic name "Momordica" comes from Latin meaning "to bite", referring to the jagged edges of the seed that appears as if the leaves have been bitten. The plant lives up to its 'Bitter Melon' name as all parts of the plant including the fruit tastes very bitter.

Number of preclinical studies on extracts of Momordica charantia was tested for their hypoglycemic effects on normal and diabetic rat models. Results have produced a significant hypoglycemic effect both in fasting and in postprandial states. Another studies demonstrates that Momordica charantia fruit extract exhibits hypolipidemic as well as hypoglycemic effects in the STZ-induced diabetic rat.

Clinical studies of Momordica charantia, on fasting and post prandial (2 hours after 75 gm oral glucose intake) serum glucose levels were studied in 100 cases of moderate non-insulin dependent diabetic subjects. Significant reduction of both fasting and post-prandial serum glucose levels. This hypoglycaemic action was observed in 86% cases.

CONTACT US

Dr.Ilangovan Ramasamy, B.S. (Zoology), B.S.(Ag), M.S.(Ag), Ph.D. (Ag)
AgriInfoTech, Inc. 166 Lawrence Road, Salem NH-USA 03079
Ph: 603-894-7346, 603-781-9097
WWW.AGRIINFOTECH.COM