THE EFFICACY OF USING MEDICINAL PLANTS IN THE TREATMENT OF DIABETES MELLITUS

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ABSTRACT

At present, interest in folk medicine is growing worldwide. Products derived from plants are widely used due to fewer complications and lower toxicity compared with surgical procedures and synthetic drugs. Worldwide, 80–85% of the population make extensive use of medicinal plants as a source of active ingredients. Herbal medicines are used to treat many diseases; for example, it is reported that around 800–1,200 plants are used in the treatment of diabetes. Folk medicine has been treating diabetes for thousands of years, and significant experience and valuable information have been accumulated in this field. Now, we will look at some of its representatives.

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According to the data, bioflavonoids extracted from citrus plants are noted to help reduce oxidative stress, thereby reducing insulin resistance and improving hyperglycaemia. In type 2 diabetes, proanthocyanidins isolated from figs have been shown in studies to improve hyperlipidaemia, hyperglycaemia and oxidative stress. In diabetic model rats, a grape seed proanthocyanidin extract had a positive effect on nephropathy and retinopathy, leading to a significant reduction in body weight.

Pomegranate is one of the most well-known antioxidant-rich fruits, and products made from it have been used as a natural remedy for diabetic complications and liver damage caused by oxidative stress. Studies have shown that pomegranate juice significantly reduces lipid peroxidation in hepatocytes and oxidative stress in type 2 diabetes by improving antioxidant status in the liver. Another study showed that pomegranate peel extract has a preventive effect against the liver changes caused by diabetes. According to the data, bitter gourd (Coccinia indica), bitter melon (Momordica charantia) and cinnamon (Cinnamomum

verum) exhibit antidiabetic activity. Studies have used cinnamon as an antidiabetic, garlic, aloe vera and Nigella sativa seeds were found to be highly effective. The authors reported that Moringa stenoptela, Nigella sativa, Zingiber officinale, Allium sativum, Aloe vera, Podocarpus gracilis, Thymus schimperi, Vernonia amygdalina, Trigonella foenumgraecum, Discopodium penninervum, They provided information on the widespread use of A. similar and other plants against diabetes.

Another study demonstrated the antidiabetic activity of the plant species Nopal, Moringa, Aloe, Wereke, Prodigiosa and Tronadora. In particular, Nopal is used worldwide in folk medicine and as an adjunctive therapy for diabetes. Moringa has been shown to increase insulin levels and reduce glucose levels in patients with diabetes. Aloe, by inhibiting DPP-4 activity, is comparable to sitagliptin.

Cynara scolymus and A. absinthium, belonging to the Asteraceae family, are used in folk medicine as antidiabetic plants. The leaf extracts of these plants exhibited significant ant hyperlipidaemic, antioxidant and hypolipidaemic effects in an alloxan-induced diabetes model.

C. erythraea is a mountain plant used in the treatment of diabetes in North Africa and Lebanon. The C. erythraea extract was shown to reduce blood glucose, triglyceride and insulin levels in a diabetes model.

From the above, it is clear that plants containing compounds with hypolipidaemic and α-glucosidase-inhibiting properties are of significant importance in the fight against diabetes. Thus, they demonstrate high potential as an adjunctive therapy for diabetes and are considered a source of new compounds for the development of anti-diabetic drugs.

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