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Opinion Article

The use of Gymnema sylvestre in the treatment of diabetes: The available evidence and expert opinion

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Abstract

Health supplements have been increasingly used in the prevention and treatment of a diversity of chronic disorders including diabetes. Diabetes has been increasing regarded as an emerging global health problem, and there has been a tendency for therapeutic studies pertaining to diabetes to focus on supplements from natural sources. Research findings have been increasing suggesting the usefulness of several supplements including fenugreek, cinnamon, and lipoic acid in the management of diabetes.

During the previous decades, Gymnema sylvestre have been reported to have beneficial effects in diabetes. This paper reviews the available evidence supporting the use of berberine in diabetes with the aim of providing expert opinion.

Expert opinion: The available evidence suggests that Gymnema sylvestre has hypoglycemic and lipid lowering effects. However, the available evidence research also suggests the usefulness of several other supplements including fenugreek, cinnamon, and lipoic acid in the management of diabetes. Therefore, the choice of diabetic supplement depends to some extent on the availability and cost. It seems that Gymnema sylvestre is the most available and cost-effective diabetic supplement in India, however, it is not in other counties in the world including Iraq.

Keywords: diabetic supplements; gymnema sylvestre; hypothyroidism

Introduction

As early as 1990, Shanmugasundaram et al from India suggested the use of the leaf extract of Gymnema sylvestre to control hyperglycemia in insulin-dependent diabetes.

They reported a study which included 27 patients who had insulin-dependent diabetes mellitus. They were treated with the leaf extract of Gymnema sylvestre in a dose of 400 mg daily. Treatment was associated a decrease in insulin requirement and lowering of fasting blood sugar, glycosylated hemoglobin and glycosylated plasma protein levels. In addition, treatment was associated with improvement in lipids profile. Control patients who didn't receive Gymnema sylvestre didn't show similar changes [4].

In 1990, Baskaran et al from India reported a study which included twenty-two patients with diabetes type 2 whom were treated with oral anti-diabetics. The patients received the leaf extract of Gymnema sylvestre in a dose of 400 mg daily 18-20 months. Treatment was associated a decrease in oral anti-diabetic's doses, and lowering of fasting blood sugar, glycosylated hemoglobin and glycosylated plasma protein levels.

Five of the twenty-two patients discontinued oral anti-diabetic medications, and maintained satisfactory diabetic control. The improvement was associated with increased insulin level which was attributed to possible beta cells regeneration [5].

In 2010, Al-Romaiyan et al from the United Kingdom reported a study which included patients with diabetes type 2 whom were treated with leaf extract of Gymnema sylvestre in a dose of 1000 mg daily for two months. Treatment was associated with marked lowering of fasting and post-prandial blood glucose, and considerable elevation in circulating insulin and C-peptide.

Al-Romaiyan et al also reported that in vitro study isolated human islets of Langerhans showed direct stimulatory effects of Gymnema sylvestre leaf extract on insulin secretion from human pancreatic ß-cells [6].

In 2010, Kumar et al from India reported a study which included patients with diabetes type 2 whom were treated with Gymnema sylvestre 500 mg daily for three months. Treatment was associated with lowering of fasting

and post-prandial blood sugar and glycosylated hemoglobin in association with improvement in fatigue, polyphagia, and lipids profile [7].

In 2021, Devangan et al from India conducted a systematic review and meta-analytic study which included10 studies and 419 patients who had diabetes type 2. This study showed that Gymnema sylvestre treatment was associated with marked lowering of fasting blood sugar (P < .0001), postprandial blood sugar (P < .0001), and glycosylated hemoglobin (P < .0001). Treatment also markedly lowered blood triglycerides (P < .0001), and cholesterol (P < .0001) [8].

In 2022, Krawczyk et al from Poland conducted a systematic review and a meta-analytic study which included 23 research papers studying the anti-diabetic effects of oral plant extracts in animals. Krawczyk et al reported that Gymnema montanum, Momordica charantia and Moringa oleifera showed anti-diabetic effects in vivo and in vitro studies. The anti-diabetic effects included lowering of fasting blood sugar, increasing insulin release, reducing insulin resistance. The anti-diabetic effect of Gymnema montanum was comparable to glibenclamide revealed the superiority of extracts over drug administration in some aspects [9].

Expert opinion

The available evidence suggests that Gymnema sylvestre has hypoglycemic and lipid lowering effects. However, the available evidence research also suggests the usefulness of several other supplements including fenugreek, cinnamon, and lipoic acid in the management of diabetes. Therefore, the choice of diabetic supplement depends to some extent on the availability and cost. It seems that Gymnema sylvestre is the most available and cost-effective diabetic supplement in India, however, it is not in other counties in the world including Iraq.

Conflict of interest: None.

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