

EXISTENCE AND ROLE OF MEDICINAL HERBS TO DIABETIC TREATMENT

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ABSTRACT:

The traditional use of plants and their preparations in the treatment of diseases as a first medication in the past centuries indicates the presence of active components for specific targets in the natural material. Many of the tested plants in this study have been traditionally used in the treatment of Diabetes and associated symptoms in different cultural areas. In the last years, not only did the absolute number of people suffering from Diabetes mellitus increase from 108 Mio in 1980 to 422 Mio in 2014 but also the prevalence of this disease rose from 4.7 to 8.5% among adults during this time period worldwide (WHO, 2019). So this review helps the reader to understand the importance of various types of herbal and poly herbal formulations present traditionally which can be used to treat diabetes mellitus. India has about 45000 plant species and among them, several thousands have been claimed to possess medicinal properties. The present paper aims to review various plant species from Indian origin and their constituents, which have been used in the traditional system of medicine and have shown hypoglycaemic activity.

Keywords: Medicinal, herbs, diabetic, plants.

[1] INTRODUCTION

Throughout history, many cultures have relied heavily on plants and herbs for medicinal purposes. Modern medicine is now looking at how these traditional sources can be used to treat and manage diabetes either along with conventional medications or on their own. The source and purity of an herb is crucial for effectiveness and to minimize any possible side effects. Professional guidance is always advised when using herbal remedies. It's very important to take your diabetes medications as recommended by your doctor. Left untreated, diabetes can lead to serious, even life-threatening complications. Complications

can lead to loss of vital body functions (such as with your kidneys), blindness, the need for amputation of toes or feet, and even death (especially from cardiovascular disease). By taking your medications as recommended, you greatly reduce your risk of developing diabetes-related complications. Many common herbs and spices are claimed to have blood sugar lowering properties that make them useful for people with or at high risk of type 2 diabetes.

A number of clinical studies have been carried out in recent years that show potential links between herbal therapies and improved blood glucose control, which has led to an increase in people with diabetes using these more ‘natural’ ingredients to help manage their condition.

Treatment includes changes in lifestyle (diet and exercise), plus medicine (if needed). Diabetes can be treated with oral medicines (pills), insulin, and/or other injected medicines. People with type 1 diabetes always need insulin. People with type 2 diabetes usually need treatment with oral medicines for several or even many years, but may eventually need insulin to maintain glucose control.

Endocrine Connection

Your treatment will depend on the type of diabetes you have. There are several types of diabetes:

Type 1 diabetes occurs when the pancreas stops making insulin. It is usually seen in children and teens, but may occur later in life. People with type 1 diabetes need insulin to survive.

Type 2 diabetes is the most common type of diabetes. With type 2 diabetes, the body does not produce enough insulin and it becomes resistant to insulin’s effects. It occurs more often in adults, many of whom are overweight or obese. However, younger people can also develop type 2 diabetes. Type 2 diabetes (also called diabetes mellitus) results from the perfect storm of not enough movement, too much of the wrong foods, emotional stress, lack of sleep, toxins, and genetics. More often than not, patients with type 2 diabetes look towards natural medicine in addition to their conventional medicine for help in treating their disease. Natural medicines and using food as medicine is a wonderful way to complement your diabetes treatment. However, if added without the correct knowledge or guidance, mixing herbs, supplements and medicines can lead to a drop in blood sugar called hypoglycemia.

Gestational diabetes is a type of diabetes that occurs only during pregnancy. It usually goes away after the baby is born. Women who have had gestational diabetes are more likely to develop type 2 diabetes later in life, however.

There are many types of medications that can be prescribed for you. The various options may be overwhelming—memorizing all the names and technical terms isn't important, but understanding that there ARE options is what you need to know. Work with your doctor to determine which of these might be most helpful for you.



Advantages of Medicinal Herbs

7 herbs and supplements for type 2 diabetes

Diabetes is a condition that affects the body's blood sugar and insulin levels. Treatments include lifestyle strategies and sometimes medication, but some complementary therapies, such as herbs and supplements, may help. In diabetes, the body either does not produce enough insulin or produces insulin that it does not use effectively. Herbs and supplements cannot cure diabetes and cannot be a standalone treatment. However, some, combined with conventional treatment, may relieve diabetes symptoms and reduce the risk of complications. According to the 2022 American Diabetes Association (ADA) Standards of Medical Care in Diabetes, there is no clear evidence of herbs or supplements benefitting people with diabetes without additional conditions. Additionally, the Food and Drug Administration (FDA) does not regulate herbs and supplements, so some products may contain different herbs and fillers. A person should speak with a healthcare professional before starting any herbs or supplements, especially if they are taking other medications. Herbs and supplements can cause interactions with prescription medications, and some may be toxic if people take large amounts of them. In this article, learn about seven herbs and supplements that may benefit people with type 2 diabetes.

1. Aloe vera

Aloe vera is a common plant with various uses. Many people are aware of its benefits for the skin, but it may have others, including slowing the progress of type 2 diabetes. One older review, published in 2013, looked at the use of aloe vera to treat symptoms of diabetes in rats. The findings suggested that aloe vera might help protect and repair the beta cells in the pancreas that produce insulin. The researchers believed

that this might be due to aloe's antioxidant effects. A 2016 study showed that aloe vera might help lower levels of both fasting blood glucose and hemoglobin A1C. The A1C test is one test that helps doctors diagnose and monitor diabetes. Another 2020 review Trusted Source looked into animal cell studies and found other evidence to support earlier findings, concluding that aloe vera might help:

- increase insulin levels
- boost the health and number of related cells in the pancreas, known as islets
- protect against diabetic kidney disease, depression, and anxiety by reducing oxidative stress
- boost eye health, as seen in one rodent study

These results appear promising, but ensuring that aloe vera is safe and effective for people with diabetes will require further human research. People who use aloe vera may add its juiced pulp to a drink such as a smoothie or take it as a supplement in capsules. People should not ingest aloe vera skin care products. Anyone interested in using aloe vera products to help treat diabetes should speak with a healthcare professional, who may need to adjust current medications accordingly.

2. Cinnamon

Cinnamon is a fragrant spice that comes from the bark of a tree. It is a popular ingredient in sweets and baked goods, as well as some savory dishes.

This spice may add sweetness to a dish, limiting the need for sugar. It is popular among people with type 2 diabetes for this reason alone, but it may also have other benefits. A 2016 review Trusted Source found evidence from human studies that cinnamon may improve levels of fasting plasma glucose (FPG) or hemoglobin A1c (HbA1c). However, most participants continued their hypoglycemic medications during the study. Further, only four out of 11 trials reached ADA treatment goals: FPG <7.2 millimoles per liter (mmol/L), or 130 milligrams per deciliter (mg/dL), and/or HbA1c <7.0). While HbA1c is one marker that doctors look at when monitoring diabetes, the levels of lipids, cholesterol, and insulin sensitivity are also important. In another review Trusted Source, researchers concluded that a cinnamon supplement's effect on lowering lipids or reducing fat mass was inconclusive. In addition, a 2019 review Trusted Source of 16 studies found evidence that cinnamon could help reduce fasting blood glucose and insulin resistance in people with prediabetes and type 2 diabetes.

In all of the investigations, the researchers noted that the results might depend on:

- the type of cinnamon, as different types contain different amounts of the active ingredient
- the dosage of the supplement
- individual responses
- any other current medications

It is important to note that, overall, most of the relevant studies did not involve human participants. There is a lack of evidence about how cinnamon supplements may affect people. Before scientists can confirm the effects of cinnamon as a treatment, they need to conduct more research.

People can use cinnamon:

- in baked goods
- in teas
- as a supplement

- Anyone thinking of using cinnamon supplements should speak with a healthcare professional first.

3. Bitter melon

Momordica charantia, or bitter melon, is a medicinal fruit. People cook it and enjoy it in many dishes. Practitioners of traditional Chinese and Indian medicines have used bitter melon for centuries. More recently, researchers have been looking into its properties. There is some evidence that bitter melon may help manage diabetes. In a 2020 study Trusted Source, 90 participants took either bitter melon extract or a placebo. Those who took the extract had lower fasting blood glucose levels after 12 weeks but no difference in HbA1c levels. In addition, a recent review Trusted Source notes that people have used many parts of the plant to help treat diabetes, often with positive results. Taking bitter melon in the following forms may lead to reduced blood sugar levels in some people:

- seeds
- blended vegetable pulp
- juice
- supplements

Bitter melon can be an acquired taste, and taking supplements may make it more palatable. Please note that there is not enough evidence to support using bitter melon instead of insulin or other medications for diabetes. However, it may help people rely less on those medications. A person should speak with a healthcare professional before starting any herbals as they may interact with current medications.

4. Milk thistle

People have long used milk thistle to treat different ailments, especially as a tonic for the liver.

Silymarin, the extract from milk thistle that scientists have paid most attention to, is a compound with antioxidant and anti-inflammatory properties. These may make milk thistle a useful herb for people with diabetes.

Many results of investigations into the effects of silymarin have been promising, but not promising enough for experts to recommend the herb or its extract alone for diabetes care, according to one review Trusted Source from 2016. The authors of research Trusted Source from 2018 found modest evidence that milk thistle might help lower glucose levels in people with diabetes. They also warned that, while people generally tolerate the herb well, milk thistle could lead to:

- nausea
- diarrhea
- bloating
- As with any supplement, it is best to speak with a healthcare professional before trying it.

5. Fenugreek

Fenugreek is a seed that may help lower blood sugar levels. It contains fibers and chemicals that help slow down the digestion of carbohydrates and sugar. There is also some evidence that the seed may help delay or prevent the onset of type 2 diabetes. Findings of a three-year investigation Trusted Source from 2015 noted that people with prediabetes were less likely to receive a diagnosis of type 2 diabetes while taking powdered fenugreek seed. The study involved 66 people with diabetes who took 5 grams of the

seed with 200 milliliters of water twice a day before meals and 74 healthy participants who did not take it. The researchers concluded that taking the seed preparation led to a reduction in blood sugar resulting from increased insulin levels. They also found that the preparation led to reduced cholesterol levels.

However, some questions remain, and scientists need further research. A person can:

- use fenugreek as an herb in cooking
- add it to warm water and drink it
- grind the seeds into a powder and consume it
- opt for a fenugreek supplement in capsule form

6. Gymnema

Gymnema sylvestre is an herb that comes from India. Its name means “sugar destroyer.” People widely use it in Ayurvedic medicine. One 2019 review Trusted Source of cell and rodent studies reported gymnema could:

- reduce blood glucose levels
- increase antioxidants
- decrease stress
- lower cholesterol and triglyceride levels
- decrease body weight and inhibit fat accumulation
- increase insulin production
- lower inflammation

One human study Trusted Source found those who took a mint containing gymnema reported a lesser desire for sweet treats such as chocolate. However, it did not include people with diabetes as participants. Still, it may help people with diabetes who would like help reducing their sugar intake.

Using either the ground leaf or leaf extract may be beneficial, but a person should speak with a healthcare professional beforehand.

7. Ginger

Ginger is another herb that people have used for thousands of years in traditional medicines. People often use ginger to help treat digestive and inflammatory issues. In 2015, a review found that it could also help treat diabetes. The researchers concluded that ginger lowered blood sugar levels but not blood insulin levels. As a result, they suggested that ginger might reduce insulin resistance in people with type 2 diabetes. However, the way that ginger accomplished this was unclear, and the team called for more research to confirm the findings. A small 2017 study Trusted Source found that ginger could reduce both fasting blood glucose and HbA1c levels. People can take ginger:

- by adding it powdered or fresh and thinly sliced to raw or cooked dishes
- brewed into tea
- as a supplement in capsule form
- by drinking it in ginger ale

The Challenges of herbal medicines in India

Although the medicinal value of herbs, there are some levelled against it; such as need of consistency, specific amount of medicine is not prescribed to patients, dose not strictly given on time, since the manufacturing method is not standardized, varying amounts of the active ingredient are present. Now the problem is “how to prepare these herbal drugs to clear the above criticisms to struggle with pharmaceutical medicines. It will involve thorough research involving separation and categorization of active constituents of medicinal plants. Also, the herbal drugs and even the conventional medicine currently in use essentially not resulted to cure many diseases. There is need to investigate the alternative therapeutic treatment through study of the plant kingdom and rationale of their potentials through relative studies

The Future aspects of herbal remedies for diabetes mellitus

Many herbal drugs are used by people and various native drugs are regularly being introduced into current therapeutics. About 80% of the people, in developing countries particularly the rural people, rely on the conventional medical remedies for health care requirements. There has been a revival of interest in herbal drugs in developed countries due to a huge amount on the preference of products from natural sources. Therefore, there's a need to differentiate between herbal drugs supplied by a medical practitioner and those herbal remedies easily accessible to the people for self medication. The rapidly growing occurrence of diabetes mellitus is a Seriousness to human physical condition in all over the world. Recently, new active medicines have been extracted from plants and possess anti-diabetic activity with more effectiveness than oral hypoglycemic agents used in proven therapy.

CONCLUSION

Herbs and supplements may help with diabetes, but there are some considerations to bear in mind. A person should always work with a healthcare professional before taking any new herb or supplement. They may suggest starting with a lower dosage and gradually increasing it until there are noticeable satisfactory effects. Some herbs can interact with medications that do the same job, such as blood thinners and high blood pressure medications. It is essential to be aware of any interactions before trying a new supplement. It is also crucial to obtain herbs and supplements from high-quality sources. The FDA does not monitor herbs and supplements, so different products may contain different herbs and fillers. Also, packaging may recommend potentially harmful dosages, and products can be contaminated, for example, with pesticides. In addition, herbs and supplements are complementary treatment options and should not replace medications.

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