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Relying more on medicinal plants than drugs for diabetes care

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Medicinal herbs may help reduce the side effects caused by the chemically synthesised drugs

Diabetes, one of the most gravitating chronic diseases in the world has taken lead to various advancements in pharmaceutical, endocrinology, and especially diabetology. Diabetes is of two types; Type 1 and Type 2. Both types are dependent on the way one's body regulates glucose. Glucose is the sugar that feeds the body cells with the help of the hormone, insulin. Type 1 diabetes patients do not produce insulin at all whereas Type 2 diabetes patients don't respond to insulin and do not produce insulin in adequate quantity.

Most people rely on herbal medicines and supplements for some aspect of basic healthcare, with 80 per cent of people globally relying on them.

Currently, modern medicine is examining how natural sources can be utilised to treat and manage diabetes, either in conjunction with conventional drugs or on their own. For the herb to be useful and to have the least number of adverse effects, it must be sourced and purified.
Various medicinal plants which can be adopted for managing diabetes:

- Urtica dioica L. (nettle) - As an anti-hyperglycemic, nettle leaves are used in traditional medicine to treat diabetes.
- Aloe vera-helps in increasing blood glucose levels and thereby may help in curing diabetes.
- Tinospora cordifolia -This plant is commonly known as Guduchi, Ayurvedic medicine in India uses T. cordifolia to treat diabetes.
- Fenugreek- Fibre and compounds in the seeds may inhibit digestion and the body's absorption of carbohydrates and sugar, resulting in a slower rate of metabolism. Sugar metabolism and insulin secretion may be improved upon seed consumption.
- Ferula assafoetida- F. assafoetida gum, which contains antioxidant components, can reduce the number of free radicals in the cell, increase the production and release of insulin in type 2 diabetes, and hyperplasia of residual pancreatic cells, as well as lower blood glucose levels.
- Bauhinia forficate- As a result of its high content of polyphenolic antioxidant chemicals called flavonoids, it lowers blood glucose by boosting insulin production and stimulating glucose transfer through insulin-dependent pathways.

Xigduo XR, Synjardy, Glyxambi, Gluformin XL are a few drugs used to treat type-2 diabetes.

As per a study provided in the *Asian Journal of Pharmaceutical and Clinical Research*, Metformin is the most commonly used antidiabetic drug followed by sulfonyl urea's which is followed by dipeptidyl peptidase-4 inhibitors.

Upon usage of these drugs, the cost of diabetes treatment is likely to intensify. The cost-effectiveness of each prescription not only depends on the duration of diabetes but also on the selection of each drug based on its therapeutic efficacy.

To reduce the cost of the prescription, the therapeutic efficacy must be maintained along with its quality. While considering the cost-effectiveness, it must be kept in mind that the therapeutic efficacy must not be hindered. These drugs do not completely cure diabetes, but they are necessary for the maintenance of glucose levels in the body. In addition, these drugs may come along with various side effects. DPP-4 inhibitors are a relatively recent category of diabetes medications. For persons with type 2 diabetes, these drugs are commonly prescribed as gliptins. The treatment of type 2 diabetes with metformin assists in lowering blood sugar to a safe measure.

Pharmaceutical and synthetic medications can benefit from the utilisation of medicinal plants as a source of components. Medicinal herbs have no serious or potential side effects, these herbs can be used to manufacture as a whole or as a combination with the chemicals.

Medicinal herbs may help reduce the side effects caused by the chemically synthesised drugs. Some potential benefits could include improvements in quality of life and reductions in drug-induced side-effects that certainly have an economic impact. These herbs can help enhance the cost-effectiveness of the medicine as they can be obtained from the environment naturally and could be used in the long run.

However, patenting and the absence of an active ingredient are the two destined hurdles for the pharmaceutical company. Therefore, a process is required to refine the substances from the extract to provide a foundation to the patent process. Pharmaceutical companies focus on the synergistic effect of the active ingredients hence a combination of various components to maintain diabetes can protect patenting. Hence, the development of economically less interesting active ingredients can be encouraged because they are in great medical demand.

In a nutshell, India is home to over 8000 species of medicinal plants which is a tremendous asset to the country and diabetes is a lifestyle and genetic-oriented disease which has been spiralling in India. The use of traditional medicines and plants have

a bright chance to overtake chemically synthesised drugs with the help of the pharmaceutical industry in the long run.

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