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A REVIEW ON THERAPEUTIC VALUE OF FENUGREEK.

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ABSTRACT

Fenugreek, a herb with a long history in medicine and nutritional value, is one of the most promising ones. Green leaves and seeds from this plant have several uses. Due to their high fiber content and capacity to alter the texture of food, 100 gm of seeds supply more than 65% of the daily need for dietary fiber (Murlidhar et al., 2012). This plant has a wide range of applications in traditional medicine due to its medicinal alkaloids, steroid compounds, and sapogenins. This plant has been used as a general tonic to boost metabolism as well as to ease childbirth and promote digestion. Trigonelline, which is highly helpful in treating diabetes and lowering blood cholesterol, is thought to be the most significant metabolite of fenugreek (Bahmani et al., 2016).

Key words: fenugreek, medicinal plants, Therapeutic values

INTRODUCTION

Fenugreek is one of the high-quality, inexpensive legume plants, which are a source of nutrients and other benefits. Many countries, including China, India, Turkey, Canada, Australia, northern and southern Africa, and southern Europe, are the primary producers of fenugreek (Moyer et al., 2002, Ahmad et al., 2016). One of the biggest exports from India is fenugreek. Fenugreek has a long history of used in traditional medicine as a powerful herb. Protein with a suitable amino acid profile, lipids, and biogenic components are all present in its seeds (Srinivasan 2006, Meghwal et al., 2012). It is well known for its volatile ingredients, fiber, gum, and other chemical components. Fenugreek seeds contain roughly 25% dietary fiber, which alters the texture of meals. As a result of its high fiber, protein, and gum content, it is now utilized as a food stabilizer, glue, and emulsifying agent. At an alkaline pH, fenugreek's protein is shown to be more soluble (Meghwal et al., 2012). Among the chemical components of fenugreek are steroidal sapogenins. The oily fenugreek embryo has a diosgenin component. Two furastanol glycosides, F-ring opening precursors of diosgenin, have been identified in fenugreek and have also been referred to as hederagin glycosides. In stem, alkaloids include trigocoumarin, nicotinic acid, trimethyl coumarin, and trigonelline can be found. One distinctive component of the seeds is the mucilage (Khare, 2004). Fenugreek seeds are essential for maintaining a healthy digestive system; therefore, regular usage of this spice may improve food digestion and promote good blood absorption of dietary components for optimal metabolic utilization in body cells. Fenugreek seeds are nutritious and rejuvenating. Fenugreek seeds can be taken as a dietary supplement on a daily basis without risk. For women of childbearing age, this may also help prevent and treat anemia and prolong a good, healthy life (Nathiya et al., 2014).

History of Medicinal plants

The use of therapeutic plants for healing is as old as humanity itself. There is substantial proof that man and his hunt for remedies in nature have a long history together, including written records, preserved monuments, and even the original plant medicines. The knowledge of using medicinal plants came about as a result of man's long-standing battles with disease, which taught him to look for pharmaceuticals in the barks, seeds, fruit bodies, and other parts of plants. Throughout the beginning of time, people have sought out natural remedies for their illnesses. As with animals, the usage of medicinal plants began as an instinctive behavior (E.H. Ackerknecht et. al., 2016). The earliest known written record of the use of medicinal herbs for medication manufacture was discovered on a Sumerian clay slab from Nagpur that is thought to be about 5000 years old. It had 12 drug production instructions that made reference to more than 250 different plants, some of which contained alkaloids

including poppy, henbane, and mandrake (Biljana Bauer Petrovska 2012). The Vedas, the holy writings of India, describe using plants for healing because they are widely available there. Nutmeg, pepper, clove, and other spices are among the plants that have their origins in India.

Since more than 3000 years ago, a large number of plants have been used in traditional medical practices, including Chinese Traditional Medicine, Ayurvedic Medicine, Unani Medicine, etc. The majority of these plants probably have therapeutic effects and would be proven as such if they were properly assessed by Western standards. Furthermore, plants have been used by ancient cultures for ages.

In industrialized countries, health food stores primarily sell a variety of purported herbal cures, many of which have not yet had their actual medicinal efficacy validated. The World Health Organization tried to identify every type of therapeutic plant that exists in the world a few years ago (Farnsworth et al., 1991).

Fenugreek in cancer therapy

In the modern world, cancer is one of the leading causes of death. Therapeutic drugs that are routinely prescribed yet have serious side effects only prolong patient lives by a few months or years (Syed et al., 2020). In this regard, cancer risk is reduced by utilizing the active components of fruits and vegetables (Behnaz et al., 2017). The effectiveness of fenugreek seeds against cancer was demonstrated by experiments using cell lines and animals as the experimental models of cancer (Umesh et al., 2014). It was discovered that the fenugreek-derived chemical protodioscin has the ability to suppress the proliferation of HL60 cells by inducing apoptotic changes (Hiroshige Hibasami et al., 2003). In a different investigation, extract from fenugreek seeds effectively stopped a mammary hyperplasia caused by 7, 12-dimethylbenz-anthracene and reduced the incidence of it in rats. It is advised that enhanced apoptosis following eating of this edible herb exhibits efficiency against breast cancer. Fenugreek (Trigonella foenum-graecum) extract from the whole plant has been shown to be cytotoxic in vitro against a wide range of human cancer cell lines, including neuroblastoma, IMR-32, and HT29 cancer cell lines (SK Verma et al., 2010). Another study looked into the effects of fenugreek extract against prostate, pancreatic, and breast malignancies. The research revealed that the applied extract effectively slowed the growth of cancer cell lines from breast and pancreatic tumors, but had no effect on primary or immortalized prostate cells. The triggering of programmed cell death was one potential mechanism for Trigonella foenum-graecum extract's anti-cancer effects (S Shabbeer et al., 2009).

Fenugreek in diabetes treatment

Fenugreek seeds have been shown to reduce fasting blood glucose levels in both animal and human studies. Both type I and type II diabetes can be treated with fenugreek as an anti-diabetic. Fenugreek contains saponins and diosgenin, which are responsible for its hypolipidemic and anti-diabetic effects. (Ahmadiani et al., 2001 and Talpur N et al., 2005).

Fenugreek in obesity

One of the main risk factors for morbidity and mortality is obesity. It can be characterized as an abnormal increase of adipose tissue (meghwal et al., 2012). According to certain studies, using fenugreek seed extract supplements can help people to lose weight overall and in their adipose tissue (toshiaki Handa et. al., 2005). Fenugreek flushes out the body's stored carbohydrates before they enter the bloodstream, which may account for why it lowers total body and adipose tissue weight. It also helps with weight loss since fenugreek seeds have a high percentage (40%) of soluble fiber. These fibers produce a gelatinous structure that may slow down food digestion and absorption from the intestines and give the abdomen a feeling of fullness, which reduces hunger and aids in weight loss (meghwal et. al., 2012).

Fenugreek in hypertension

Endothelial dysfunction is a deadly condition that can lead to atherosclerosis, hypertension, diabetes mellitus, and other problems (Y Sauvaire et al., 1991). Fenugreek essential oil has been used in combination with other essential oils to lower spontaneously hypertensive rat's systolic blood pressure (Dixit et al., 2005). It has been discovered that the aqueous and benzene extract of fenugreek has natriuretic activity by increasing the levels of Na^+/K^+ ions in rats and diuretic activity in a dose-dependent manner by increasing the volume of urine, which can be used to treat hypertension (priyanjali dixit et al., 2005).

CONCLUSION

Fenugreek have a various therapeutic benefits of and its primary metabolites have been clarified by the investigation of a variety of pharmacological actions (Mehrafarin et al., 2010). In both animal and human research, fenugreek seeds have been proven to lower fasting blood glucose levels and also treat type I and type II diabetes and cancer (Aher RR et al., 2016).

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