International Journal of Scientific Research in Science and Technology
Print ISSN: 2395-6011 | Online ISSN: 2395-602X (www.ijsrst.com)
doi : https://doi.org/10.32628/IJSRST

A Review on Medicinal Plant used in Treatment of Diabetes

Pankaj Dada Yedage*
Vasantidevi Patil Institute of Pharmacy College, Kadoli, Kolhapur, Maharashtra, India

Article Info
Volume 8, Issue 2
Page Number : 600-606
Publication Issue
March-April-2021
Article History
Accepted : 20 April 2021
Published : 27 April 2021

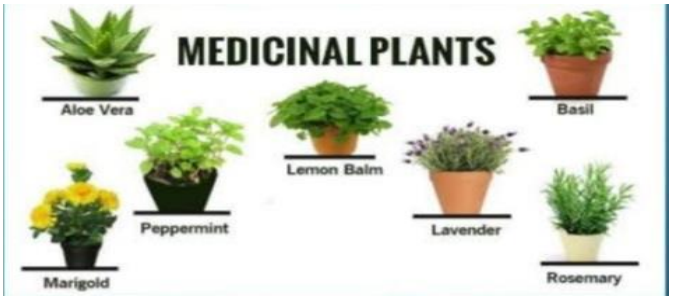
ABSTRACT

Aim of the present study is evaluated various medicinal plants used for antidiabetic activity. Diabetes mellitus is one of the most common non-communicable diseases globally. It is the fourth leading causes of death in the most developed countries and there in substantial evendiced that it in epidemic in many developing and newly industrialized nations.

Keywords : Diabetes, Medicinal Plant , Hypertension, Blood Glucose Level

I. INTRODUCTION

Introduction Diabetes mellitus is a common and very prevalent disease affecting the citizens of both developed and developing countries. It is estimated that 25% of the world population is affected by this disease. Diabetes mellitus is caused by the abnormality of carbohydrate metabolism which is linked to low blood insulin level or insensitivity of target organs to insulin[1]. Despite considerable progress in the treatment of diabetes by oral hypoglycemic agents, search for newer drugs continues because the existing synthetic drugs have several limitations. The herbal drugs with antidiabetic activity are yet to be commercially formulated as modern medicines, even though they have been acclaimed for their therapeutic properties in the traditional systems of medicine[2]. Type 2 diabetes usually occurs in obese individuals and is associated with hypertension and dyslipidemia. Thus the treatment aims to reduce insulin resistance and to stimulate insulin secretion. Diabetes is a metabolic disorder where in human body does not produce or properly us insulin, a hormone that is required to convert sugar, starches, and other food into energy. Diabetes mellitus is characterized by constant high levels of blood glucose (sugar).



Human body has to maintain the blood glucose levels at a very narrow range which is done with insulin and glucagon. The function of glucagon is causing the liver to release glucose from its cells into the blood for the production of energy. Type 1 Diabetes leads to inability to release insulin results in low rates of

glucose uptake into muscles and adipose tissue[3]. Traditional medicine (herbal) is used for treatment of diabetes in developing countries where the cost of conventional medicines is a burden to the population[4]. Despite the introduction of hypoglycemic agents from natural and synthetic sources, secondary complications continue to be a major medical problem.

II. METHODS AND MATERIAL

Antidiabetic effect of folklore medicinal plants

1. Brassica juncea:-

It is commonly used spice in various food items in Tamilnadu. B. juncea is a traditional medicinal plant which belongs to family Cruciferae. B. juncea aqueous seed extract has a potent hypoglycemic activity which was investigated in STZ induced diabetic male albino rat. Doses which have hypoglycemic activity was reported as 250, 350, 450 mg/kg[7]

2. Coccina grandis :-

Hypoglycemic activity was evaluated in alcoholic extracts of Coccinia grandis (C. grandis) leaves. Alcoholic extract 600 mg/kg bw was injected orally to mice. Oral administration of alcoholic extract of leaves of C. grandis showed significant hypoglycemic effect on blood glucose level in normal fasted rats[9].

***3.*. Alangium lamarckii:-**

Antidiabetic effect of alcoholic extract of Alangium lamarckii (A. lamarckii). Alcoholic leaves extract 250 and 500 mg/kg bw was used for these studies. A. lamarckii have significant antidiabetic activity in STZnicotinamide induced diabetic rat[10]

4.. Albizia odoratissima :-

Antidiabetic effect of methanolic bark extract of Albizia

odoratissima (A. odoratissima) in alloxan induced diabetic mice. The methanolic extracts were fed to the animals at a dosage of 250 and 500 mg/kg body weight. The significant reduced in the levels of serum cholesterol, triglycerides, SGOT, SGPT, alkaline phosphatase and decrement of total proteins in alloxan induced albino mice[11].

5.. *Artemis sphaerocephala Krasch*:-

Antioxidant effect of Artemis sphaerocephala (A. sphaerocephala) gum on STZ induced diabetic rat. Levels of serum and liver tissue thiobarbituric acid reactive substances (TBARS) and +OH were increased in STZ induced rat. The activity levels of liver and serum superoxide dismutase were decreased. After administration of extract of A. sphaerocephala, levels of TBARS and +OH were decreased in serum and liver tissue. The significant increments in the levels of liver and serum SOD. A. sphaerocephala is very good antioxidant activity[12]

6.. *Axonopus compressus* :-

The anti-diabetic effect of the methanolic leaf extract of the plant. Diabetes was induced in the rats by injection of alloxan. Methanolic leaves extract 250, 500 and 1 000 mg/kg bw was used for these studies. Methanolic leaf extract of Axonopus compressus (A. compressus) at all.

7.. Berberis vulgaris :-

Hypoglycaemic effect of Berberis vulgaris (B. vulgaris) L. in streptozotocin-induced diabetic rats B. vulgarisis a traditional medicinal plant which belongs to family Berberidaceae. The results indicated that water extract and saponins shows significant hypoglycemic effect. The serum cholesterol and serum triglycerides levels were significantly increased[14].

8. Catharanthus roseus:-

Hypoglycemic effect of the methanolic leaf extract of Catharanthus roseus (C. roseus) in alloxan induced diabetic rats. The levels of blood glucose were significantly decreased when compared with Control rat. The blood glucose lowering effect of C. roseus methanolic extract was more pronounced than Glibenclamide and Metformin.

9. Aloe Vera

Research suggests that aloe vera juice or supplements could have a number of possible benefits for people with diabetes: Lower fasting blood glucose levels. A 2015 study suggests that taking aloe vera gel can help people achieve better fasting blood glucose levels, as well as reduce body fat and weight.

10. Lemon balm:-

Lemon balm is possibaly safe when taken appropriately by mouth for about one month. Diabetes. Lemon balm might lower blood sugar levels in people with diabetes. Watch for signs of low blood sugar (hypoglycaemia) and monitor your blood sugar carefully if you have diabetes and use lemon balm.

11. Rosemary:-

Studies have shown that compounds in rosemary tea may lower blood sugar, suggesting that rosemary could have potential applications for managing high blood sugar among people with diabetes.

12. Marigold:-

The result showed that the Lutein extract from marigold flowers has the potential to reduce blood glucose levels and as an antioxidant characterized by a decrease in the levels of malondialdehyde in mice. Diabetes mellitus is a chronic disease characterized by blood sugar levels.

13. Lavender:-

Researchers found that in animal experiments, lavender essential oil helped balance high blood sugar levels and protect against oxidative stress, which causes complications in people with diabetes. Lavender oil is available for purchase online.

14.Peppermint :-

Peppermint essential oil alleviates hyperglycemia caused by streptozotocin- nicotinamide-induced type 2 diabetes in rats. Biomed Pharmacother.

LIST OF MEDICINAL PLANT USED IN DIABETES

PLANT NAME	FAMILY	PART TO BE USED	TYPE OF EXTRACT	ACTIVITY	METHOD	CHEMICALS
ANKOL	Aliginaceae	Leaves	Alcoholic	Antihyper glycemic	Extraction	Alloxan
BLACK SERIES	Milimoseceae	Bark	Mentholic	antidiabetic	Normal contrl	Alloxan
BLANKET GRASS	Poceace	Leaves	Aqueous	hypoglycem	Injection Method	Glabiclimide
BARBERRY	Berberidiceae	Root	Mentholic	antidiabetic	Extraction	Amylase
BLACK MUSTARD	Cruciferae	Seed	Alocoholic	antidiabetic	Extraction	Streptozot Ozotocin
TERIPOD	Fabeceae	Root	Aquous	antidiabetic	Extraction	Amuase
VINCA	Apocunaceae	Leave	Alcoholic	antidiabetic	Extraction	Bergenin
BITTER HERB	Gentineacea	Leaves	Mentholic	antidiabetic	Normal Control	Algenin
SWEET FLAG	acorbicae	rizome	aquous	antidibetic	exteaction	gurmarin

Other medicinal plants

PLANT NAME	*FAMILY*	*PART TO BE USED*	*TYPE OF EXTRACT*	*ACTIVITY*	*METHOD*	*CHEMICAL*
Sugar Apple	*Anonneceae*	*Root*	*Alcoholic*	*Antidbetic*	*Extraction*	*Trymitham Ine*
Buddha Tree	*Anonneaceae*	*Bark*	*Mentholic*	*Antidiabetic*	*Injection Methid*	*Gallocatec Hin*
Sinking Gum	*Apiceae*	*Resin*	*Aqeous*	*Antidiabetic*	*Normal Control*	*Epigallo Cate*
Physic Nut	*Euphorbiceae*	*Leaves*	*Alcoholic*	*Antidiabetic*	*Extraction*	*Marsupine*
Indian Berry	*Euohorbiceae*	*Seed*	*Aquous*	*Antidiabetic*	*Extraction*	*Petrostill Ben*
Onion	*Lilieacea*	*Oil*	*Mentholic*	*Antidiabetic*	*Extraction*	*Polyphenol L*
Chinis Hibiscus	*Malveceae*	*Flower*	*Aquous*	*Antidiabetic*	*Extraction*	*Stz*
caalluma	*asclipideace*	*roots*	*mentholic*	*Antidiabetic*	*Injection method*	*Alloxan Stz*

III. REFERENCES

[1]. Rajesh Kumar, Dinesh Kumar Pate, Satyendra Kuldip Prasad, Kirshnamurthy Sairam, Siva Hemalatha. Antidiabetic activity of alcoholic leaves extract of Alangium lamarc.

[2]. Dinesh Kumar, Sunil Kumar, Sonia Kohli, Renu Arya, Jyoti Gupta. Antidiabetic activity of methanolic bark extract of Albizia odoratissima Benth.

[3]. Ibeh BO, Ezeaja MI. Preliminary study of antidiabetic activivty of the methanolic leaf extract of Axonopus compressus (P.Beauv) in alloxan induced diabetic rats.

[4]. Rajesh Kumar, Dinesh Kumar Pate, Satyendra Kuldip Prasad, Kirshnamurthy Sairam, Siva Hemalatha. Antidiabetic activity of alcoholic leaves extract of Alangium lamarckii Thwaites

[5]. Maiti R, Jana D, Das UK, Ghosh D. Antidiabetic effect of aqueous extract of seed of Tamarind us indica in streptozotocin induced diabetic rats.

[6]. Wadkar KA, Magdum CS, Patil SS, Naikwade NS. Antidiabetic potential and Indian medicinal plant.

[7]. aravanan G, Pari L. Hypoglycaemic and antihyperglycaemic effect of Syzygium cumini bark in streptozotocin-induced diabetic RAT.

[8]. Jafri MA, Aslam M, Javed K, Singh S. Effect of Punica granatum Linn (flowers) on blood glucose level in normal and alloxan-induced diabetic rats.

Cite this article as :

Pankaj Dada Yedage, "A Review on Medicinal Plant used in Treatment of Diabetes ", International Journal of Scientific Research in Science and Technology (IJSRST), Online ISSN : 2395-602X, Print ISSN : 2395-6011, Volume 8 Issue 2, pp. 600-606, March-April 2021. Available at

Journal URL : https://ijsrst.com/IJSRST218275