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"Palasha" A Curative Medicine in Diabetes Mellitus

Abhishek Gupta [1], Arun Kumar [2], Vishal Upadhyay [3]

1.Associate Professor in Dravyaguna Department at Shri Babu Singh Jay Singh Ayurvedic Medical college & Hospital Farrukhabad U.P

2.Assistant Professor in Dravyaguna Department at Shri Babu Singh Jay Singh Ayurvedic Medical college & Hospital Farrukhabad U.P

3.Assistant Professor in Roga Nidan & Vikrati Vigyan Department at Shri Babu Singh Jay Singh Ayurvedic Medical college & Hospital Farrukhabad U.P

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Corresponding author-
Abhishek Gupta , Associate Professor in Dravyaguna Department at Shri Babu Singh Jay Singh Ayurvedic Medical college & Hospital Farrukhabad U.P
Email- abhibhu2810@gmail.com

ABSTRACT:

Diabetes mellitus is a worldwide grave health problem challenging physicians globally. There are many factors that play role in the development of this disease, including environment, nutrition infection, genetic predisposition and side effect of modern drugs. *Ayurveda* refers to Diabetes mellitus as —*Madhumeha.* Among the Ayurvedic texts Charka[1] , Vagbhata and Madhava have brought the word *Madhumeha* into use while, naming 20 subtypes of Prameha whereas Susruta has used the word *Ksaudrameha. Madhu, and Ksaudra* are literally synonyms of each other. But at a different place, *Madhumeha*' too has been used and Susruta has devoted one complete chapter to the treatment of *Madhumeha.* He has accepted *Madhumeha* to be the stage of complications of *Prameha*. If only the literal meaning of the words is to be seen *Madhumeha'* is the appropriate term for diabetes mellitus. The selected drug *Palasha* (*Butea monosperma* Linn. Kuntz) possesses *Tikta, Kashaya rasa* and has *Pramehaghna* properties and actions, therefore drug seems to be rational for treatment of *Madhumeha. Palasha* was proved to be useful and harmless remedy for *Madhumeha.* Today, it is a challenge for scientists to provide efficient, safe and cheap medications. In this scenario, *Palasha* can be an exclusive medicine which is widely available throughout country.

Keywords- *Buteamonospema*, Fabaceae, Diabetes-mellitus.

INTRODUCTION

Diabetes is the single most important metabolic disease that affects nearly every organ/system in the body. Today diabetes affects more than 135 million people worldwide and that number is expected to increase to 300 million by 2025. To tackle diabetes effectively, a comprehensive treatment is required. Now, attention is diverted to herbal formulations due

to their versatile role in diabetes without side effects, especially in treating type 2 diabetes or NIDDM .[2] Medicinal plants are being used since time immemorial, for treatment of various diseases. Diabetes as a medical problem was first discussed by *Maharishi Agnivesh* in *Agnivsha Samhita* (later known as *Charaka Samhita*) as *Prameha*[3].

Etiologic Classification

I. **Type 1 DM (10%) -** Earlier called insulin dependent (IDDM) or juvenile onset diabetes. (a) Type 1A DM: Immune mediated**,** (b) Type 1B DM: Idiopathic II.

II. **Type 2 DM (80%) -** Earlier called noninsulin dependent (NIDDM) or maturity onset diabetes. III. Other/Specific types of Diabetes. (10%)

Diagnosis of Diabetes –

Hyperglycaemia remains the fundamental basis for the diagnosis of diabetes mellitus. In symptomatic cases, the diagnosis is not a problem and can be confirmed by finding glucosuria and a random plasma glucose concentration above 200mg/dl.**(Table 1)**

IV. Other Tests:

1.Glycosylated Haemoglobin (HbA1c)**, 2**. Extended GTT**, 3**. Insulin assay**, 4.**C-peptide assay Diabetes Mellitus is a clinical syndrome characterized by inappropriate hyperglycemia caused by a relative or absolute deficiency of insulin or by a resistance to the action of insulin at the cellular level. It is a most common endocrine disorder, and leading cause of death in the world. Major problem with diabetes is the need of the lifelong dependence on medication. All synthetic drugs and purified molecules or ingredients cause imbalance and overloads on the body systems, leading to side effect and residual impact on metabolic system. Herbal drugs play a role in the disease; most of them speed up the natural healing process. A safe and effective therapeutic drug that cannot only provide symptomatic relief but also can block or reduce the many harmful effect of Diabetes including hyperglyceimea, polyuria, polydipsia and weight loss, is urgently needed. Many indigenous medicinal plants have been shown a significant therapeutic influence on the management on Diabetes.

Butea monosperma* Linn. Kuntz.** (**Family**-Fabaceae) commonly called the ***Palasha is extensibly used in Ayurveda, Unani and Homeopathy medicine and has become a cynosure of modern medicine. Palasha is a well known traditionally used medicinal plant and possess a number of pharmacotherapeutic effects including anti-hepatotoxic, antifungal, estrogenic, anti-inflammatory and anti-stress. Most studies of BM as a hypoglycaemic and hypolipidemic agent have been done with alloxan induced diabetic rats. The drug was found to decrease BMI in *sthool-pramehi* and increase BMI in *krish pramehi* (within normal limits) and effective in lowering both fasting and post prandial blood sugar level and S. cholesterol level.

About *Butea Monosperma*

Botanical name: *Butea monosperma* Linn. Kuntz., **Family**: Fabaceae(Papilionaceae), **Group**: *Rodhradi gana, Muskakadi gana, Ambasthadi gana, Nyagrodhadi gana*.(Susrut samhita)., **Classical name**: Palash, **Sanskrit name**: *Kinsukah, Raktapuspaka, Ksarasrestha, Brahmavrksa, samidvara*., **Regional name**: *Dhak, tesu (hindi), Palas(Mar.), Khakhro (guj.), Paras(Tam.), Mulung(Kann.) Keshu (Punjabi), Kesudo(*Gujrati)., **English name**: Flame of the forest, Bastared teak, Parrot tree. *Butea monosperma* is a medium sized deciduous tree and found in tropical south Asia. The plant has lent its name to the town of Palash (west Bengal), famous for the historic battle of Plassey fought there. *Butea monosperma* is a dry-season deciduous tree, capable of growing in water logged situations. This tree gets up to 50 ft. high with stunning orange to red colored flower clusters. It loses its leaves as the flowers develop. Leaves are pinnate and have three leaflets. Plant begins flowering in spring season and flowering stage in March- April, fruiting during summer or April-June.

Principal Constituents of *Butea monosperma* –

The main constitute of the flower is Butrin(1.5%) besides butein (0.37%)and Butin(0.04%). Also contains flavonoids and steroids. Fruit contains Butrin, Butein 3,4,7-trihydroxyflavon and Palasonine. Bark and gum contain Kino-tannic acid (50%), mucilaginous matter and alkaline(2%). **Pharmacodynamics- Rasa** *-Katu, Tikta, Kashaya;* ***Guna****-Laghu, Ruksa* ***;Virya-****Usna* (flower-Sita)**;** ***Vipaka- Katu, Dosakarma****-Kaphapittashamak* Several species produce resins used in cosmetics or Ayurvedic medicine. Many species of plant *Butea monosperma* are found major uses in economic industries; some species have little economic value. The uses of plant parts are-(1) **Leaves** are used to cure

boils, pimples, and hemorrhoids and are internally given in flatulence. (2) The **shoot apex** is used by the tribal woman of Kerala to prevent conception. (3) The **seed** when given orally were found to be effective in case of roundworm and thread worm infestations. (4) The **trunk** is used as it is a specimen or as a background component of the canopy. (5) The **flower** yields an orange dye which is used to prepare traditional Holi' colour. (6) **Bark** yields red juice known as ―*Bengal Kino*‖ or *"Butea Gum*‖. *Chakradutta* mention the use of its gum in external astringent applications. The tree acts as a host for Lac insect and is, therefore useful in producing natural Lac. It is a sacred tree, referred to as a treasure of the GOD and in sacrifice related rituals. It is said that the tree is a form of AGNIDEV GOD OF FIRE'. It was a punishment given to HIM by GODDESS PARVATI for disturbing HER and Lord SHIVA privacy.

Pharmacological Configuration of *Butea monosperma* –

Chemical analysis indicates that the fruit does not have any carbohydrate or fat contents. The fruit of *Butea monosperma* stimulate the stomach and pancreas to release insulin. A significant decrease in blood glucose and urine sugar levels as well as a rise in the plasma insulin level were observed in *Butea monosperma* treated individuals compared to the corresponding control subjects and when the diabetic participants were treated with *Butea monosperma* powder for 30 days, the LDL level decreased, where as the HDL cholesterol level increased, in both cases.

Action of *Butea monosperma* with special Consideration of Diabetes Mellitus- Herbal medicine has always played a key role in the health system and so we decided to study the hypoglycaemic effect of *Butea monosperma* fruit in order to ratify its traditional use for the control of diabetes in humans. The oral treatment of Diabetic subjects with the *Butea monosperma* fruit powder for 30 days caused a significant anti-hyperglycaemic effect.[4]. The capacity of *Butea monosperma* fruit significantly decrease elevated blood sugar levels to almost normal level is an essential trigger for the liver to reverse to its normal homeostasis in experimental diabetic patients. *Butea monosperma* acts as a hypo-glycaemic agent either by stimulating pancreatic B cell to release more insulin in to blood stream, thereby increasing glycogen deposition in the liver or by increasing the number of insulin receptors. [5]

DISCUSSION & CONCLUSION

Administration of the *Butea monosperma* fruit powder to diabetic subjects has beneficial effects. Our results revealed the potential application of the *Butea monosperma* fruit powder as an alternative medicine for the better control, management and prevention of diabetic progression. In this review we saw that *Butea monosperma has* antidiabetic potential. But it is proved only on Experimental level not on clinical level except some, So it is necessity of present era researchers to do mostly clinical trial on the basis of experimental data's.

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Conflict of Interest: None

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Table 1:- Diagnosis Criteria of Diabetes

S.No.	Patient Status	Plasma glucose value	Diagnosis
1.	Fasting Value	<110 mg/dl	Normal
2.	Fasting Value	110-126 mg/dl	Impaired fasting glu
3.	Fasting value	>126 mg/dl	DM
4.	2 hour after 75 gm oral glucose load	140-200 mg/dl	Impaired glu. tolerance
5.	2 hour after 75 g oral glucose load	>200 mg/dl	DM
6.	Random value	>200 mg/dl in a symptomatic patient	DM