



ROLE OF VIJAYSARA IN MANAGEMENT OF DIABETES MELLITUS: A REVIEW ARTICLE

Ayurveda

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ABSTRACT

Background and Objectives: Pterocarpus marsupium an ancient folk medicine, occurs in parts of the western ghats in the Karnataka-Kerala region and in the forests of central India, Nepal and Sri-lanka, and is prescribed since time immemorial for the mitigation of diabetes mellitus, skin disorders, bleeding disorders, cataract and many more. This review explores the efficacy of Vijaysara Saarodak, an Ayurvedic formulation derived from the plant Pterocarpus marsupium, in managing type 2 diabetes mellitus (Madhumeha). The current rise in lifestyle disorders, particularly diabetes, is attributed to dietary and lifestyle changes. Ayurveda offers insights into alternative therapies, with Vijaysara gaining attention for its antidiabetic properties. The discussion covers the mechanism of action, prepared according to classical Ayurvedic methods, emphasizing the properties of Vijaysara that balance Kapha dosha and reduce the progression of diabetes through its Ruksha and Laghu qualities, and Katu Rasa. This comprehensive analysis underscores the potential of Vijaysara Saarodak as a therapeutic agent in the regulation of blood glucose levels, contributing to the broader understanding of Ayurvedic approaches to managing non-communicable diseases. **Materials and Methods:** The review synthesizes information from traditional texts, articles and phytochemical studies, highlighting the pharmacological activities, including blood glucose-lowering effects and beta cell regeneration. **Discussion:** In-depth discussions of pharmacology, phytochemistry, chemical composition, and most importantly its ayurvedic mode of action by guna, virya, and vipaka, as well as its impact on our body's various doshas, have been covered in this article. **Conclusion:** Vijaysara saarodak is working on the type 2 diabetes mellitus effectively by its guna which is laghu, ruksha and kashya, katu rasa which works on kapha dosha and meda dhatu and helps in ceasing the samprapti of prameha and ultimately lowers the level of glucose in diabetes mellitus.

KEYWORDS

Vijaysara, prameha, saarodak, meda dhatu, ruksha guna

INTRODUCTION

Due to significant dietary changes and lifestyle changes made by the general public, the current era is rife with stress and tension. Madhumeha, namely type-2 diabetes mellitus, is one of the many diseases that have increased as a result of this. Ayurveda is a wealth of ancient medicine that offers a viable avenue for drug development.

Lifestyle disorders, also known as non-communicable diseases (NCDs), are health conditions that are primarily caused by unhealthy lifestyle choices and habits. These disorders often result from factors such as poor diet, lack of physical activity, smoking, excessive alcohol consumption, and chronic stress. Common lifestyle disorders include obesity, type 2 diabetes, cardiovascular diseases, hypertension, and certain types of cancer. These disorders rising incidence and effects on general well-being have made them a major worldwide health problem.

Diabetes is a chronic, metabolic disease characterized by elevated levels of blood glucose (or blood sugar). The most common forms of diabetes are type 1 diabetes (5%), which is an organ - specific autoimmune disorder caused by the autoimmune response against pancreatic beta cells, and type 2 diabetes (95%), which is associated with obesity.¹

The number of people with diabetes rose from 108 million in 1980 to 422 million in 2014. In 2019 diabetes was the 9th leading cause of death with an estimated 1.5 million deaths directly caused by diabetes. The estimates in 2019 showed that 77 million individuals had diabetes in India, which is expected to rise to over 134 million by 2045. Approximately 57% of these individuals remain undiagnosed. Between 2000 and 2019, there was a 3% increase in diabetes mortality rates by age.²

In ayurveda type-2 diabetes mellitus can be correlated with madhumeha. Madhumeha is a clinical entity described in Ayurveda as one of the types of Vataja Prameha. The cardinal feature of Prameha is Avile Prabhuta Mutrata.³ Madhumeha is caused by Dhatukshaya manifests as thin and asthenic individual due to loss of Oja or imbalance in Oja. In Margavaranjanya Madhumeha the vitiated Kapha and Meda obstruct the passage of Vata. The obstructed Vata is vitiated

again and carries Ojas to Basti thus manifests Madhumeha.⁴

The history of herbal medicine is long; natural remedies have been used for centuries to cure a variety of ailments. The drug Vijaysara is mentioned in our samhitas and is said to be highly helpful in treating madhumeha.

The formulation known as Vijaysara Saarodak is referred to by several titles in various samhitas. Each of them has a unique mode of action that we shall cover throughout this article, making them all quite beneficial in treating madhumeha.

Aim

This review delves into vijaysara saarodak, assessing its mechanism of action through both Ayurveda and modern perspective. The focus is on comprehensively understanding the efficacy of this in controlling the blood glucose level in type 2 diabetes mellitus.

MATERIALS AND METHODS

This evaluation involves synthesizing information from various ayurvedic texts and internet articles.

Literature Review:-

Drug Review:- Vijaysaar is a well-known plant that is found throughout India. There are references to the medication Vijaysaar in Ayurvedic writings.

Synonyms- Asana, Bandhooka, Puspa, Beejaka, Beejavriksha, Jeevaka, Kamyā, Karshya, Mahasarja, Alakapriya, Neelaka, Krishnasarjaka, Neelaniriyasa, Peethasaara, Peethasaaraka, Peethasala, Vijaysara.⁵

Latin name	Pterocarpus marsupium Roxb.
Hindi name	Vijaysara
Bengal	peetasaal, Piyashal
English	Indian kino tree, Malabar kino tree
Gujarati	Bia, Bibla, Biyo
Kannada	Bange
Marathi	Bibla
Punjabi	Chandanlal, Channalal
Sanskrit	Asana, beejak, peetasaal

Tamil	Vengaimaram
Telugu	Peddagi

Botanical Classification⁶

Botanical Name	Pterocarpus marsupium Roxb.
Family Name	Fabaceae

Taxonomical Classification of Pterocarpus marsupium Roxb.

Kingdom	Plantae
Family	Fabaceae
Phylum	Magnoliophyta
Genus	Pterocarpus
Species	Pterocarpus marsupium

Occurrence: This is especially prevalent in the mountainous parts of Uttar Pradesh, Bihar, Central India, and South India.

Chemical Composition: Certain chemicals, such as kino-tannic acid (70–85%), are present in its gum. Kinin, kynore, gallic acid, pectin, resin, protocatechuic acid, and pyrocatechin are also present. Epicatechin and a reddish-brown pigment are found in the bark. Liquiritigenin, iso-liquiritigenin, alkaloids, and resin are all present in the root bark.

Phytochemistry

L-epicatechin and a reddish-brown coloring substance are found in the bark. Sometimes the bark is used for coloring. Liquiritigenin, isoliquiritigenin, an alkaloid, resin, and an unidentified neutral component are all found in the heartwood. A yellow coloring substance, an essential oil, and a semi-drying fixed oil are also present in the wood. Pterocarpin, pterostilbene, isoliquiritigenin, liquiritigenin, epicatechin, kinotannic acid, kinoin, kino-red beta-eudesmol, marsupol, carpusin, and marsupinol are the main chemical constituents of *P. marsupium*.⁷

Pharmacological Activity

Antioxidant and anti-diabetic properties *P. marsupium* exhibits special pharmacological qualities, such as blood glucose-lowering action and beta cell regeneration and protection.

Anti-inflammatory Activity

Additionally, *P. marsupium*'s anti-inflammatory properties have demonstrated great promise. This work assessed the PGE2-inhibitory activity of *P. marsupium* extract containing pterostilbene in LPS-stimulated PBMC. Additionally, *P. marsupium* extract's specific inhibitory efficacy against COX-1/2 was examined.

Cardiotonic Activity

An aqueous extract of *P. marsupium* heartwood was found to have cardiotonic action. Strong antioxidants called 2-4 tetrahydroxy isoflavone 6-6 glucoside are found in this plant species and are thought to help protect cardiovascular disorders.

Antibacterial Activity

Bark and leaf extracts from *P. marsupium* have antimicrobial properties. After testing hexane, ethyl acetate, and methanol extracts against four specific Gram-positive and Gram-negative bacteria, it was discovered that *P. marsupium* ethanol extracts had strong antioxidant and anti-ulcer effects.

Analgesic Activity

The better analgesic effects of ethyl acetate and methanol extracts may be due to the presence of polyphenols in them.

Antidiabetic Activity

Marsupin and pterostilbene significantly lowered blood glucose in hyperglycemic rats.⁸

Vijaysara Prayoga:-**Aabyaantar Prayoga:-**

1. Raktapitta- Kshara of Vijaysara with madhuka are useful. (C.S.Ci.4)
2. Prameha- In pittaj prameha the kwath of Vijaysara, ashwatha and patha is used. (C.S.Chi.6/32)
3. Kushta- In pitta kapha kushta the kwath of Vijaysara, khadir and daruharidra is used. (C.S.Chi.7/101)
4. Kanthagat rakta- the kshara yoga of Vijaysara is used. (A.S.Chi.4/30)
5. Shwitra- the kashaya of Vijaysara, priyangu, shatpushpa is used. (A.H.Chi.20/5)

Bahya Prayoga:-

1. The chandanadi taila is used for Pradeh, Avagaha, parishekharth in jwar vaydhi. (C.S.Chi.3/258)
2. In Urusthambha the lepa prepared with Vijaysara, shonyak, khadir, bilva, kantakari is used. (C.S.Chi.27/56)
3. In kushta the kwath of Vijaysara, lodhra nimba, kutaj, saptaparni and arishta is used for snan. (S.C.9/50)
4. In jeerna jwar tha abhyanga is done with taila prepared by Vijaysara and vatadipanch shirivrukshsha is used (S.Ut.39/257)
5. In timirpratishedh adhyaya nasya of taila prepared with til taila, Vijaysara, bhringraj swaras is used. (A.H.Utt.13/46)

Guna: laghu, ruksha

Rasa: Kashaya, tikta

Vipaka: Katu

Virya: seta

Parts Used: heartwood(kaandasara), gum(niryas)

Karma:

Doshakarma: kapha pitta shamak

It is kushtaghana, lekha, mutrasangraniya, madhumehahara, raktashodak, raktapittashamak, sandhaniya, rasayana, yonidoshahara, satmbhana, krimiaghana, keshya.

Dose: for kawath 50-100 ml, churna 3-6 gm, niryas 1-3 gm⁹

Vijaysara is an important drug in pittaj premah nasak yoga by acharya charak. He has also described saarodak/vijaysaarodak and vijaysara is the drug present in it.

Saarodak/Vijaysaarodak:-

Acharya Charak has mentioned saarodak/vijaysara udaka in premah chikitsa adhaya¹⁰ and Acharya Chakarpani described its method of preparation by shadangpaniya vidhi.¹¹

Acharya Vagbhata also described asanaadisarambu in premah chikitsa adhaya in chikitsa sathan.¹²

Method Of Preparation:-

Saarodak is prepared according to sadangpaniya paribhasa.

In aushad siddha paniya kalpana one part of raw drug is taken with sixty-four times of water to be boiled up to half i.e. thirty-two part of water, is then used for various purposes such as to drink and to make Peya, Vilepi etc.¹³ (various dietary dosage forms used especially in disease condition.)

Saarodak is medicated water containing vijaysara {beejak}. Nidan of premah leads to aggravation of kapha dosha and further vitiate meda, mamsa and bastigata kaleda. The guna of vijaysara is rukshya and laghu, its rasa is kashaya and tikta and its vipak is katu, so ultimately it will work upon kapha dosha by reducing it and ceases further samprapti. so saarodak is an important udak to control and manage diabetes mellitus.

Description of Saarodak in Various Aamhitas of Ayurveda:-

- Acharya vaghbhatt has described asanaadisarambu in the diet regimen for the patients of madhumeha.¹⁴
- Acharya vaghbhatt has described asanadigana in sutra sthana and mentioned that it is helpful in premaha, medo dosha vikarhara, pandu.¹⁵
- Acharya sushruta has described saalsaraadi gana and vijaysara is present in it. This gana is very beneficial in premah, pandu and kapha medo rogas.¹⁶
- In drug loharistha asanadigana Dravyas are present and this yoga is given in premaha.

DISCUSSION

Since ancient times, *Pterocarpus marsupium* has been used to cure a wide range of conditions, including diabetes mellitus, skin conditions, blood disorders, and countless others. Numerous review articles on various websites describe the function of Vijaysara in accordance with its guna, but none of them go into great length regarding the formulation of saarodak, how it is prepared, or how it works.

In-depth discussions of pharmacology, phytochemistry, chemical composition, and most importantly its ayurvedic mode of action by guna, virya, and vipaka, as well as its impact on our body's various doshas, have been covered in this article. Additionally, the formulation of saarodak and its efficacy in treating diabetes mellitus are discussed in length in this article.

CONCLUSION

As this drug is mentioned by all the acharyas in premaha adhyaya so

obviously there is some scientific reason behind it that how it is working to lower the blood glucose. If we talk about the mechanism of action of vijaysara there is a chemical compound marsupian and pterostilbene present which helps in lowering the blood glucose level.

And according to ayurveda, drug works according to its guna which is laghu, ruksha and kashya, katu rasa which works on kapha dosha and meda dhatu and helps in ceasing the samprapti of prameha and ultimately lowers the level of glucose in diabetes mellitus.

Vijaysara drug and vijaysara saarodak is working on the type 2 diabetes mellitus effectively.

REFERENCES

1. American Diabetes Association. Diagnosis and classification of diabetes mellitus. *Diabetes Care* 2014;37(Suppl. 1):S81–S90
2. Wikipedia.org/wiki/Epidemiology_of_Diabetes_Mellitus.
3. Shastri K.A. Shushrut Samhita, Ayurveda tattavasandipika – Hindi vyakhya, purvarth, Prameha Nidana Adhyaye, 2010, Verb 6/6, P 326
4. Chaturvedi K, Shastri G. Charak Samhita, Vidyotini Hindi vyakhya, Prameha Nidana Adhyaye, Prameha Chikitsa Adhyaye, Chaukhamba Bharti Academy, 2009, 4: 530- 541, 6:227-238
5. Bapalal.G.Vaidya. Nighantu Adarsha, Vol-1, Chaukhamba Bharathi Academy, Varanasi, Reprint 2007, Palasadi Varga, Pg no-381-384, Pp No-919.
6. Kritikar K.R & Basu B.D. Indian Medicinal Plants, Vol-1, International Book Distributors Dehradun, Edition-2008, Pg no- 686,825,828, Pp No-838.
7. Badkhane, Y. and lone, S. (2010). Perocarpus marsupium: biological activities and medicinal properties. *International journal of research in pharmaceutical science*, 1(1), pp.350-357
8. Badkhane, Y. and lone, S. (2010). Perocarpus marsupium: biological activities and medicinal properties. *International journal of research in pharmaceutical science*, 1(1), pp.350-357
9. Sharma.P.C, Yelne.M.B,Dennis.T.J. Data base on Medicinal Plants Used in Ayurveda, Vol-1, Central council for research in Ayurveda and Siddha, Reprint-2002, Pg no-33, Pp No-528.
10. Shastri K, Chaturvedi G. Charak Samhita. Varanasi: Chaukhamba Bharati Academy; 2016 Part 2 Chikitsa Sthana Page no 241 Chapter 06 Verse 46
11. Trikamji J, Chakrapanidatta. Pandurang Jawaji Proprietor of the Nirnaya Sagar Press, Bombay, 1935, Page No.- 448 Chapter 06 Verse 46
12. Tripathi B, Astanga Hridaya. New Delhi: Chaukhamba Sanskrit Pratishthan; 2017. Chikitsa Sthana Page No. 716 Chapter 12 Verses 14
13. Tripathi B, Sharangdhar Samhita. Varanasi: Chaukhamba Surbharti Prakasan; 2017. Madhyam khand Page No. 105 Chapter 2 verses 157
14. Tripathi B, Astanga Hridaya. New Delhi: Chaukhamba Sanskrit Pratishthan; 2017. Chikitsa Sthana Page No. 716 Chapter 12 Verses 14
15. Tripathi B, Astanga Hridaya. New Delhi: Chaukhamba Sanskrit Pratishthan; 2017. Sutra Sthana Page No. 200 Chapter 15 Verses 20
16. Shastri A. Sushruta Samhita. Varanasi: Chaukhamba Sanskrit Sansthan; Part 1 Sutra sthana Page No. 120-121 Chapter 21 verses 33-34