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# ayu:sutras

by ayu:manthra



DIABETES

DIABETES EDITION

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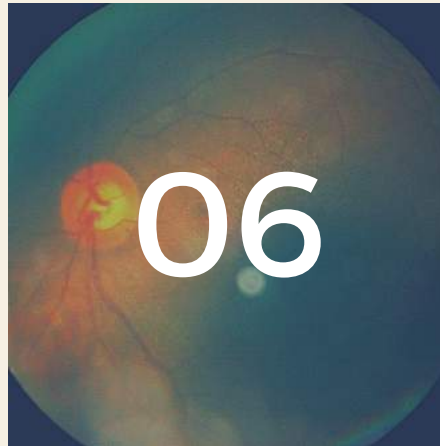
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Dr Shanthi Ganga's  
ayu:manthra

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### Diabetic Retinopathy

Diabetic retinopathy is a microvascular complication of diabetes mellitus, which remains a leading cause of visual loss in the working-age population. Globally it has been estimated that about 30% of people with DM have diabetic retinopathy. It currently affects almost 100 million people worldwide and is set to become an ever-increasing health burden.



### Diabetic Foot Ulcer

Foot problems are common in people with diabetes. You might be afraid you'll lose a toe, foot, or leg to diabetes, or know someone who has, but you can lower your chances of having diabetes-related foot problems by taking care of your feet every day. Diabetic foot is characterized by a classical triad of neuropathy, ischemia, and infection.



### Gestational Diabetes

Gestational Diabetes (GDM) has attained relevance due to its increased prevalence in the last few decades. GDM can often lead to undesirable complications to the gravid and the offspring including labour complications and abnormal growth pattern in the perinatal period.



### RASAYANA CHIKITSA IN DIABETES

Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced.



**Dr. Arshath**

# EDITORIAL DESK

As per International Diabetic Federation, one in ten person live with Diabetes Mellites globally. Every year the world's largest awareness campaign of Diabetes reaches over one billion people in one hundred and sixty countries that specialize in the supreme priority of Diabetes mellites as an essential world health issue.

The theme of 2020 is: The Nurse and Diabetes mellites. If we analyse from ancient to present time, the angle to see the management of Diabetes mellites has shifted from holistic to drug bound. Till a number of years past, the revival of the holistic approach wasn't being used. However, in the present days, people are highly involved in lifestyle changes along with other alternative advice. Since a protracted time, evidence has been accepting the importance of diet and lifestyle within the maintenance of health.

According to Acharya Vagbhata, a healthy man is referred as who indulges daily in healthy diet and lifestyle activities, who discriminates between wholesome and unwholesome and acts accordingly, who is not attached too much to the worldly affairs, who develops the habit of charity, considers all as equal, is truthful, pardoning, and keeps the company of good persons becomes free from diseases. Latest research support the possibility of reversing type 2 diabetes by lowering fat build-up in the pancreas and liver; greatest chance of success when weight loss is achieved around the time of diagnosis. A physician-led liquid diet program proved effective to achieve reversal of Type 2 Diabetes in many patients. Same facts can be found in the concept of Prameha Chikitsa (the approach towards Sthula and Krisha).

In this issue, team ayu:sutras focuses on the different Ayurvedic approaches of diabetes according to different specialities.





# KNOW YOUR HERBAL GARDEN

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JAVA PLUM, INDIAN BLACKBERRY, NJAAVAL, JAMBU

FAMILY: MYRTACEAE

BOTANICAL NAME: SYZYGium CUMINI [L.]SKEELS

Indian blackberry is a delicious native fruit. In Sanskrit, it is known as Jambuphala. The Indian subcontinent was recorded as Jambudveepa in the Puranas due to the presence of this particular tree. It was abundantly seen in its natural habitat during the olden times, but now it is not the same.

The fruit has got both nutritive and medicinal values. It is one among the Mutrasangrahaniya Dasaimani of Acharya Charaka and Prameha is a condition in which the patient urinates in excess (Prakarshena Mehathi). It can be included in the diet of a diabetic patient as it has a very low glycemic index. Researchers have proven its anti-diabetic activity also. It can prevent associated complaints like excess thirst, frequent micturition, weakness etc.

## About Tree

It is an evergreen tree reaching up to about 30 m and can live more than 100 years. The fruits are berry, black and juicy, shining when thoroughly ripe with a solitary, hard seed.

## Ayurvedic Properties

Rasa : Madhura, Amla, kashaya

Guna : Guru, Ruksha

Virya : Seetha

Vipaka : Katu

Karma : Kaphapittahara, Grahi, Madhumeha Udakameha Hara.

## Cultivation

- Direct sowing of seeds
- Saplings are available in most of the nurseries

## Home Remedies

- **Diabetes:** Seed powder can be consumed up to 3gm per day, drinking water can be prepared by boiling stem bark and seed kernel. Blood sugar monitoring is necessary while taking this.
- **Diarrhoea:** Decoction of stem bark can be consumed.
- **Anaemia:** Fruits can be made into juice and given internally.

## Therapeutic Use

- Deha Dourgandhya: Decoction prepared out of stem bark is used for the bath to eradicate the foul smell from the body.
- Vyanga: Leaves of jambu, Amra, Haridra, Daruharidra and fresh jaggery are pounded with curd and water applied locally.
- Raktapitta: Cold infusion of jambu, Amra and Arjuna shall be given
- Baala Grahani: Goat milk along with the juice of jambu stem bark is given internally.

## Chemical Constituents

- Glycosides (Jamboline), Tannin, Ellagic acid, Gallic acid, Iron, Sodium, Potassium, Vitamin A and C, Anthocyanin. Seeds are rich in protein and calcium.

## Formulations

- Pushyanaga Choornam, Madhumehantaka Choornam. Panchapallava Yogam.

## Dose

3-6gm of seed powder.

10-20gm of stem bark for decoction

## Researches

Antidiabetic, anti-allergic, gastroprotective, antioxidant, anticonvulsant, anti-inflammatory, antispasmodic, anti-diarrhoea activities are proven by various in vivo and clinical studies.



Dr. Niya T Sivan



# PREVENTIVE MEASURES OF DIABETIC RETINOPATHY THROUGH AYURVEDA

## INTRODUCTION

Diabetic retinopathy is a microvascular complication of diabetes mellitus, which remains a leading cause of visual loss in the working-age population. Globally it has been estimated that about 30% of people with DM have diabetic retinopathy. It currently affects almost 100 million people worldwide and is set to become an ever-increasing health burden, with estimates between 1990-2010 showing that diabetic retinopathy related visual impairment and blindness increased by 64% and 27% respectively(1).



The diagnosis of diabetic retinopathy is made by clinical manifestations of vascular abnormalities in the retina. Based on obvious manifestations during Diabetic retinopathy progression, microvascular lesions have been utilized as the major criteria for evaluating and classifying the retina in DR.

Ayurvedic description about Prameha shows very much resemblance with that of DM both in etiopathogenesis and symptomatic aspects. The aetiology of Prameha mainly includes both Aharaja and Viharaja factors which are capable of vitiating Rasa - Rakta Vaha Srotas. At the beginning of pathogenesis of Prameha, Kapha dosha is involved chiefly along with Mamsa, Meda and Kleda. On further progression, all the Thridoshas along with Rakta, Sapta Dhatu with 4 internal Drishtipatalas of the eye are affected in Prameha. Acharya Vagabhata in Sutrasthaana Dinacharya Adyaya clearly stated Vision is addressed by Agni Mahabhuta and Pitta predominant hence eyes have a special fear towards Kapha dosha. So the Kapha dosha predominant Prameha can cause pathological manifestation in the eye also. This involvement is already propounded in the Prameha Poorvarupa itself as "Hritnertrajihwasravanopadehatwam".

Microvascular changes involved in the various juncture of this Pramehajanya Netra Roga include microaneurysm, retinal haemorrhage, intraretinal microvascular abnormalities (IRMA), macular oedema, exudates and pathologic neovascularization. Management of Diabetic retinopathy in modern system of medicine commonly includes focal laser and Anti VEGF therapy. These therapies demonstrated better clinical benefits in DR patients. However, the majority of the patient failed to achieve clinically significant visual improvement and faced unwelcome consequences. All this necessitates for the implementation of preventive measures and alternative safer management measures.

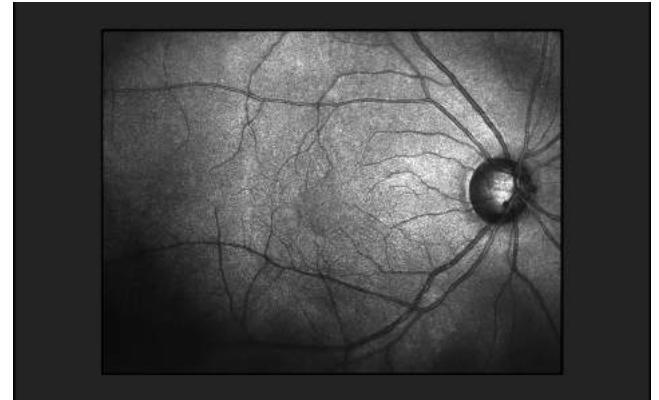


# PATHOPHYSIOLOGY OF DIABETIC RETINOPATHY

Diabetic retinopathy is microangiopathy which affects the retinal capillary arterioles, capillaries and venules. Based on the microvascular lesions Diabetic retinopathy is classified as follows:

1. Non Proliferative Diabetic Retinopathy (NPDR)
  - Mild NPDR
  - Moderate NPDR
  - Severe NPDR
  - Very severe NPDR
2. Proliferative Diabetic retinopathy (PDR)
3. Diabetic Maculopathy
4. Advanced diabetic eye disease (ADED)

Hyperglycemia causes pericyte loss, apoptosis of endothelial cells and thickening of the basement membrane which collectively contributes to the impairment of the blood-retinal barrier (BRB). Since pericytes are responsible for providing structural support for capillaries, their loss leads to microaneurysm formation(2). It appears as small red spots. Some of the thin microaneurysm and fragile retinal capillaries may rupture and cause retinal haemorrhages, which may be deep (dot and blot haemorrhage) or superficial haemorrhages (flame-shaped).



Breakdown of BRB also causes leakages of plasma proteins in the retina and form hard exudates and retinal oedema. Hard exudates are deposits of plasma proteins and lipids. All these lesions often occur mostly near the macula and optic disc. Furthermore pronounced thickening of the basement membrane, endothelial cell damage, RBCs deformation and rouleaux formation and increased stickiness of platelets results in microvascular occlusion and ischemia (3). This retinal ischemia /hypoxia leads to up-regulation of Vascular Endothelial Growth Factor (VEGF) through hypoxia-inducible factor (HIF 1).

Due to the binding of vascular VEGF in vascular endothelial cells promotes cell proliferation, migration and subsequent formation of new blood vessels. Hypoxia can also result in IntraRetinal Microvascular abnormalities like Arteriovenous shunts. This VEGF also sends signals to disrupt adherence and tight junctions between endothelial cells by phosphorylation of occludin and zonula Occludens-1 leading to vascular hyperpermeability and fluid extravasations. At the vitreoretinal interphase, new vessels proliferation is accompanied by formations of fibrovascular membranes. This can cause late complications of PDR such as vitreous haemorrhage, tractional retinal detachment and combined tractional-rhegmatous retinal detachment.

## AYURVEDA VIEW

The etiological factors for Prameha include Beeja Dushti, Mithya Aahara and Viharas. Elaborating the Nidana, it includes intake of Madhura-Amla-Snigdha Aaharas and Viharas like day sleep and lack of exercise. All these factors are Kapha Vardhaka, basically Achakshushya also. It is already evident from the classics that change in dietary habits is capable of generating pathological manifestations in Netra. The excessive usage of Amla rasa results in Amla Vidgadha in Drishti mandala and Amloshitha in Sarvakshi. It is well spoken of in the Samanya Samprapthi of Netra Roga Achakshushya factors generally vitiating Pitta spread upward through the veins and gets localised in different parts of eye(4). Vata loses Anuloma Gati due to Srothorodha, and takes Pratiloma direction and thus carries the Dosas and Dushyas to Rasavaha Srotas of Netra. Raktavaha Sroto Dushti Nidana includes food and drinks which are Vidahi, Snigdha, Ushna and Drava(5). There exists some common Kapha-Pitta vitiating factors in Nidana of both Prameha and Rakta Sroto Dushti. Concomitantly this is responsible for Rasa- Rakta Vaha Sroto Vaigunya and weakness of the Srotas also. When Kapha predominant Prameha manifests systematically it easily causes Srothorodha and Sroto Dushti in the eyes, which are already weakened by Achakshushya Sevana. So it is evident that the onset of Diabetic retinopathy in a diabetic patient follows the diet and lifestyle he is pursuing. Analysing the Dosha dominance of these predisposing factors it's mainly Vata-Pitta dominant. Even though Netra is Sleshma Baya, structural anomalies of Netra are due to Vata-Pitta Dosha. Evaluating the entire pathogenesis of Prameha Tri Doshas along with Rakta is involved. Symptomatically this Pramehajanyanetraroga is a Rakta-Pitha dominant disease. The microvascular changes can be categorised as follows:

- Kapha Pradhana Thridosha (as pre-proliferative phase) – Retinal oedema, exudates and microvascular occlusion
- Pitha Pradhana Thridosha (as proliferative) – neovascularization and haemorrhages
- Vatha Pradhana Thridosha - ADDED changes including retinal detachment.





## PRINCIPLES OF TREATMENT

Acharya Vagbhata said that for treating a secondary disease, the primary disease should be pacified first(6). So before treating this Netra Roga due to Prameha good glycemic control is mandatory. Choice of treatments depends upon the stage and dominating Dosa. When the condition is Kapha dominant with pre-proliferative features Amahara and Rookshana therapies are recommended. This encompasses general as well as a localised treatment for Netra Roga. As in the case of all Ama, Langhana is the first choice of treatment followed by Takradhara and Shirolepas. Takradhara is a major Rookshana therapy which will help to reduce oedema and retinal haemorrhages. Seka and Bidalaka types of Sthanika Chikitsas are helpful for subsiding Kapha Upadehatwa. Features of Pitha predominant stage of Pramehajanya Netra Roga are similar to Urdhwaga Raktapitha. So along with Pratilomahara Chikitsa, Pitta Samana, Rakta Prasadaka, Sopha Hara measures also can be appended in the treatment modalities. Apart from Langhana, Vasa Prayoga, and Tikta – Kasaya rasa Prayoga, during the state of active bleeding, Sthambana Swarasa Nasya and Ksheera Vasti can also be incorporated. Pratimarsa Nasya with Durva Swarasa is found to be very useful in the absorption of intraretinal haemorrhage due to its Rakta –Pithahara property. Koshta Sodhana as Virechana expels accumulated Kleda from the body and is helpful in reduction of oedema. Reduction in macular oedema and resolving haemorrhages help improve near vision. The stage of Vata Dosa dominance is already mentioned as Asadya in all classics. The chances of recovery are very rare as this stage is having the vitiation of Tridoshas and Ojonasha. After relieving the initial Ama stage we can choose Anjanas also based on Doshas. For Kapha Dosa, Pasupatha Anjana and for Vata and Pitha Dosa Chandanaadi Anjana are mostly recommended. Even though we are widely using these therapies and managing the cases, complete restoration of vision is unpredictable. So prevention of these conditions is always crucial. Abstaining from ingestion of unsuitable foods is also vital for Netra Raksha(7).



# CONCLUSION: KEY FACTORS IN PREVENTIVE ASPECTS

Proper Vata Anulomana plays a pivotal role in Netra Roga Samprathi. So for proper Anulomana administration Hareetaki mixed with honey /Mridweeka Swarasa is beneficial. This Hareethaki is taken as the best choice of the drug here as it is Rasayana, Chakshushya and Vatanulomana also. Sharangadhara recommended the use of Chakshushya Triphala. This is composed of 1part Hareetaki, 2 parts Vibheetaki and 4 parts Amalaki. Due to the richness of anti-oxidants, this yoga is best to reduce the risk of cataract formation. Acharya Vagbhata illustrated some measures for Netra Raksha – use of Triphala , Rudhira Sruthi, Sodhana therapy, Mano Nivriti, Anjanam, Nasyam, Shakunashanatha, Sapaada Pooja and Grithapaanam(8). Triphala can be considered as a powerful Chakshushyarasayana. Various combinations of Triphala as Grita or mixed with Taapya, Ayah etc, or as Thriphala Kwatha + Grita etc are extensively mentioned in classics for Netra Samrakshanm(9). Mano Nivriti is withdrawing the mind from sensual actions and adopting the measures of Acara Rasayana. Following the ethical regimens and codes of conduct provides peace of mind and balance. One who practices Nasya in time according to the prescribed manner, his eyes, nose, and ears are not affected by any morbidities and all sense organs become clear. Thus Pratimarsa Nasya with Anu Taila/Shad Bhindhu Taila helps to prevent Srotorodha and remove accumulated Kapha(10). Anjana is advised when dosas are fully manifested and are localised in the eye. By Anjana Karma the eyes become spotlessly bright like the moon in the clear sky. Daily practice of Anjana and Pratimarsa Nasya helps in Srotoshodana by eliminating unwanted Doshas accumulated in the channels.Acharya Charaka in Matrasitiya Adyaya of Sutrasthana revealed oiling of head and feet is Indriya Prasadaka in gesture. Adopting the measures of Dincharya and Ritu Charya helps to maintain the equilibrium of Dosas. Practising Siro Abhyanga, Paadaabhyanga, Padatra Dharana will help in maintaining the health of eyes.



**Dr Sreekumar K**



**Dr. Amrutha S**

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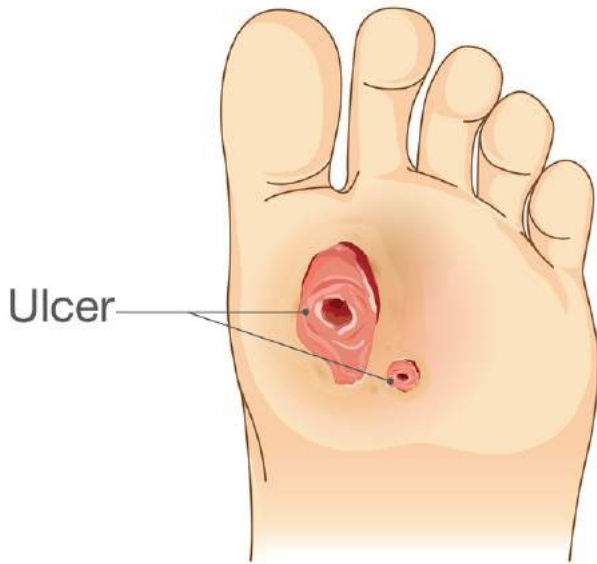
A photograph of a wooden bowl filled with green gooseberries, resting on a white wooden surface. The text "DIABETES TIPS" is overlaid in a white rectangular box in the center of the image.

# DIABETES TIPS

Intake of turmeric and gooseberry is good for Diabetes patients



# MANAGEMENT OF DIABETIC FOOT ULCER IN AYURVEDA



Foot problems are common in people with diabetes. You might be afraid you'll lose a toe, foot, or leg to diabetes, or know someone who has, but you can lower your chances of having diabetes-related foot problems by taking care of your feet every day. Diabetic foot is characterized by a classical triad of neuropathy, ischemia, and infection.

## AYURVEDIC PERSPECTIVE

According to Acharya Susrutha, Rasa carrying channels in patients suffering from Madhumeha become weakened. So, Doshas fail to come back to the upper part of the body, hence they cause many problems in the lower half of the body and ultimately give rise to Pitaka /Vrana /Vidhradhi/ulcer. In Ayurveda, Prameha has been described as a Mahavyadhi by all Acharyas and 20 types of Pramehas are mentioned. According to Sangrahaakara, Prameha is a dreadful disease because of it arising from all three Doshas, of being localised in the most vital organs, of persisting for a long time and of being accompanied with many complications.

Vrana may be considered as a Upadrava of Prameha. Pramehajanya Vranas mostly fall into the category of Dushta Vrana. Current therapies have a limited success rate and fall short in addressing the microvascular pathology present in diabetics. The circumstances have never been better for the preservation of diabetic lower extremity. The challenge is to get these patients back on their feet.

## ETIOLOGY OF DIABETIC FOOT ULCER

Diabetes mellitus is similar to Madhumeha which is a subtype of Vataja Prameha. In Madhumeha mainly the Vata and Kapha are predominant though the disease is Tridoshakopanimittaja. The Diabetes mellitus has been broadly classified as type I and type-II. The type I Diabetes mellitus is nearer to Dhatuapakarshanajanya Madhumeha while the type II Diabetes mellitus resembles Avaranajanya Madhumeha. In the pathogenesis of the Avaranajanya Madhumeha, the Kapha and Pitta are the main Dosha, whereas the most important Dushyas are Meda and Kleda.

In Madhumeha, the Dhatukshaya is also predominant though Datukshayaja pathogenesis leads to incurability while Avaranjanya pathogenesis can be disrupted. Here in the pathogenesis etiological factors mainly vitiates Kapha, Pitta and Meda. They in turn obstruct the path of Vata.

Vyana the sub-component of Vata mainly performs the functions related to Gati and transportation of various vital essences at the required place. Obstruction to the path of Vata leads to its aggravation causing severe depletion of vital Dhatu. Oja carried out towards Basti. Along with this, vitiation of various body elements like Meda, Mamsa, Kleda, Vasa and Lasika occurs which causes various symptoms and signs.

Medodosh is also manifested as the disease progress. Moreover, according to Sushruta, the Dosha in the patients of Madhumeha accumulates in the lower part of the body owing to the incompetence of the Dhamanis.

Complications arise due to the long time association of Prameha disease. If Sodhana like proper management is not done the Doshas get aggravated and vitiated by Mamsa and Rakta producing Pidaka like Upadhrvas. Charaka has mentioned 7 types of Pidakas while Sushruta and Vagbhata have mentioned 10 types of Pidakas as complications of Madhumeha. If timely management is not done, the swelling advances severely, the pus tearing the interior creates a big cavity and become advanced and thus incurable.

According to Susruthacharya, Saravika like 9 boils are curable if the patient is strong and they are a few, located in the skin and muscles, soft with little pain, and suppurating and rupturing in a short time. The patient should be evacuated through both passages. If this is not done, Doshas get aggravated and by vitiating muscle and blood cause inflammatory swelling and other complications.

This should be managed with Sodhana and venipuncture. If this is not observed, the swelling advances severely and produces pain and burning sensation. Then surgical interference and management as prescribed for wound should be employed. If this is not done, the pus tearing the interior creates a big cavity and become advanced and thus incurable. Non suppurated boil should be treated like inflammatory swelling while the suppurated ones like the Vrana. Vaghbatacharya mentioned Eladigana Taila for Vranaropana in Pramehajanya Vrana. According to Sangrahaakara, the physician should treat carbuncle first, as they are dangerous to the patient with diabetes; the rest of the complications can be treated later, depending on their strength. Vrana implies damage of the part leading to discolourations and hence the term Vrana.

### Samprapti Ghataka

**Dosa:** Tridosaja

**Dusya:** Tvacha, Mamsa, Sira, Snayu, Sandhi, Koshta and Marma.

**Srotas:** Annavaha, Rashavaha, Raktavaha, Mamsavaha, Svedavaha.

**Agni:** Mandya, Visama.

**Marga:** Sakha.

**Adhithana:** As Dusya.

**Udbhavasthana:** Anywhere in the body.

**Pratamya Lakshana:** Gatravicurnane.



# TREATMENT PRINCIPLE

The science of “Vrana Ropana” seems to be a serious matter of concern to the ancient healers. Acharya Sushruta has mentioned 60 Upakramas for the treatment in Vrana. In the treatment of Vrana Sopha, Acharya mentioned 7 Upakramas which are elaborately explained in the 60 Upakramas.

Acharya Charaka has mentioned 36 Upakramas for the treatment of Vrana and explained Samanya and Vissha Chikitsa. According to Susruthacharya, Prameha Upadravas should be properly managed with Sodhana procedures otherwise it will turn incurable. Acharya Susrutha has advised following Dushtavrana Cikitsa for Meha kushta Vrana in Cikitsasthana sadyovrana Adhyaya.

Prameha Janya dushta Vrana is having Tridosha Prakopa, Pradhana Raktadushti and Chirakari manifestation. For excess vitiated Dosha, Shodhana is a must. Clinical observation reveals that Raktamokshana among the Shodhana may provide better relief than other Shodhana karma. Sushruta stated that Raktamokshana not only purifies the channels but also lets the other parts become free from diseases and this action is faster than other remedies.

Sushruta recommended Jalaukavacharana better for the superficial blood (Avagadha Grathita Rakta). Sushruta has given great emphasis to Jalaukavacharana in the therapy for Raktapradoshaja Vyadhi (Blood originated disease), Tridosha Prakopajanya (vitiated all three body humour) and Chirakari(chronic) diseases. Chakrapanidatta opines that Shastra karma is not advisable to expel out the blood as it may damage the Sparshanendriya.



Among the Anushastras (Para surgical measures) Vagbhata considers Jalauka (leeches) as the best one that provides comfortable bloodletting. Other Ayurvedic medicines used in the symptomatic management of diabetic foot ulcer are Kanmada Bhasmam, Katakakhadiradi Kashayam, Rasasinduram, Gayatriadi kashayam Chandraprabha Vati, Triphala Guggulu, Nisakathakadi Kashayam, Niruryadi Gulika etc. according to patient condition.



**Dr Pouse**



# JEWELS OF AYURVEDA

## “ŚIRASSEKĀDI VIDHIḤ”

AN UNSUNG TREATISE ON KERALA’S SPECIALIZED THERAPEUTIC PROCEDURES

The word “Keraḷīya Pañcakarma” has popularly been used in the Ayurvedic community. Classically, Pañcakarma is the term used to denote the five procedures primarily aimed at eliminating the morbid functional components of the body (with Anuvāsana standing an exception) to reinstate well-being. The five procedures(1) that prevailed in Kerala, aren’t primarily intended for waste elimination. Moreover, they are extrapolations of the oleation, and sudation modalities (precursors or Pūrvakarmās) mentioned in the Ayurvedic classics. That is probably why they have not coined ‘Pañcakarma’ in any of the classical Ayurvedic texts of Kerala. Due to this evident mismatch in schemata, there are also opinions among various eminent scholars that the usage “Keraḷīya Pañcakarma” is a misnomer. Hence, it would be appropriate to consider them as just “five therapeutic procedures”. Dhārākālpaḥ has been widely considered to be the source of fundamental and authentic details regarding the paradigm of these procedures(2). But in 1929, a text was published which pointed out the scientific and literary fallacies of Dhārākālpaḥ and proposed more logical alternatives for at least many of them. But due to unknown reasons, the book went highly unnoticed despite the popularity of the author and his close relations with his famous contemporaries. This article would explore this piece of work, Śirassekādividhiḥ, that has been less explored before.



Vaidya Karthik K P

### AUTHOR, REGION, PERIOD AND SCHOOL

Śirassekādividhiḥ is a text, that is not very old, and has been authored by Putiyēṭattu Rāman Menon. He was born in the village Poyya of Koṭuṅgallūr Tālūk in 1877. He was given elementary education by his father Meykkaṭṭu Nārāyaṇan Nambūtiri. He, at the age of 18, joined the renowned Koṭuṅgallūr School for higher learning. Initially, he was under the tutelage of Kuñjan Tampurān, the elder brother of the legend Koccuṇṇi Tampurān, and then under Koccuṇṇi Tampurān himself. He was trained in Āyurveda, with Aṣṭāṅga Hṛdayaṃ Sarvāṅga Sundara vyākhyā as the main text and other classical texts as references. His hands-on training in therapeutic procedures was under Īccara Vārier, the court physician.

He has also penned a commentary on Aṣṭāṅga Hṛdayaṃ Sūtrasthānaṃ, named ‘Sārārabodhini’. He has written several articles too, which were noted and often controversial due to his adamant views and logics. An instance for the same from his commentary on Aṣṭāṅga Hṛdayaṃ: The conventional verse seen for Guḍūcyādi gaṇa in Aṣṭāṅga Hṛdayaṃ is very popular, and it goes as follows: “Pittaśleṣmajvaracchardidāhaṭṣṇāghnam agnikṛt ||” But he comments that as none of the ingredients of the formulation is carminative (dīpana) in nature (both in theory and practice), the property ‘Agnikṛt’ doesn’t fit in here. Hence, he corrects the mūlāśloka (the verse in the main text) itself as: “Pittaśleṣmajvaracchardidāhaṭṣṇānivāraṇaṃ ||” (3)

## Anubandhacatustayam

**Adhikāri:** ‘Cikitsāpariśīli bhiṣak’, trainee physicians are the ones for whom this text has been written, especially the ones wishing to gain deep knowledge in the less explored special therapeutic procedures of Kerala.

**Viśayaḥ:** The five main special therapeutic procedures of Kerala, which are Śirasseka, Kāyaseka, Piṇḍasveda, Annalepa, Śirolepa are the main areas of interest in the text.

**Prayojanaṃ:** Standardization of the materials, procedures, and indications of the procedure above mentioned, by citing the opinion of the author’s own master and the Aṣṭavaidyas of Kerala.

**Sambandhaḥ:** A physician who learns this text can overcome the existing misconceptions regarding these procedures and implement them logically and effectively in patients.

In the first chapter, the author criticizes the wrong practice of using takradhāra for managing pains, (except those arising from Kapha and Pitta) especially those in the hands, legs, and chest region. He advises specific drugs to prepare the milk before buttermilk making in Takradhārā:

Sl. No.	Doṣa predominance	Drug
1.	Kapha	<i>Cyperus rotundus</i> - Mustā
2.	Pitta	<i>Glycyrrhiza glabra</i> - Yaṣṭimadhu
3.	Kapha with mild association of Vāta	<i>Aegle marmelos</i> - Vilvaḥ
4.	Pitta with mild association of Vāta	<i>Asparagus Racemosa</i> (Śatāvārī), <i>Sida cordifolia</i> (Balā)

The use of buttermilk which is not sour (Nirmala) is recommended in the main text, contrary to the opinion of Dhārakalpaḥ to use sour buttermilk. In the commentary, Śrī. Rāman Menon explains that in the majority of the indicated conditions for Takradhārā like Unmāda, Śirodāha, etc. non-sour buttermilk is appropriate even though in some Kapha-predominant conditions like Apacī the sour variety also shall be used. Other than buttermilk, coconut water, cold water, milk (for Pitta predominant conditions like burning sensation), ghee (Vāta-Pitta predominant), oil (Vāta), etc. are also suggested. A guideline regarding the pattern of Seka on the head is given by this text. The liquid should fall on the head in the shape of the Malayalam alphabets ‘Ra’ (ര) or ‘Ka’ (ക).

In the second chapter wherein Kāyaseka has been explained, the clinical expertise of the author is evident when he advises Seka with Anuṣṇa Sneha (oil that isn’t hot) in Vātarakta. He comments that in Vāta predominant conditions of the disease, mild heating shall be done. He also reiterates that the usage of non-hot oil in Vātarakta is an indicator, and Seka with this type of oil is to be done in similar conditions like menstrual issues in women and semen related issues in men, and also in conditions like Prameha(5). He also uses certain observations to state the adequacy of the procedures, like “At the end of Piṇḍasveda (Śāṣṭhika Piṇḍa here), the content in the bolus should almost completely be on the patient’s body”.

## Uniqueness of the text

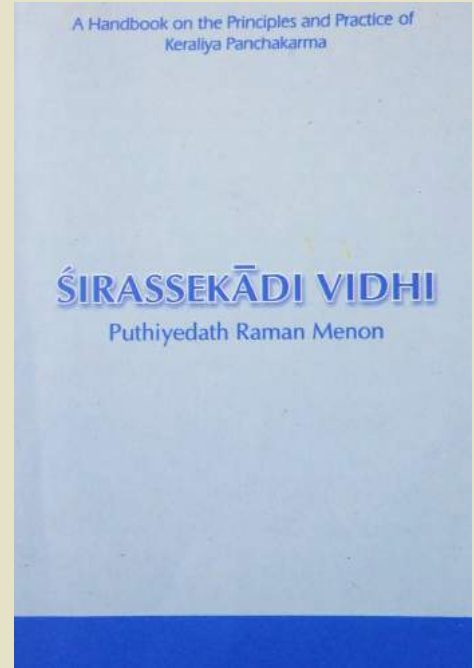
The text, being a treatment handbook, focuses more on the treatment procedures, their indications, the materials and methods involved, duration, specific points in pathogenesis and modifications to be adopted according to them. The content of the text is mostly confined to the Auśadha skandha(4).

There are seven chapters:

- Śirasseka Vidhi (Therapeutic streaming over the head)
- Kāyaseka Vidhi (Therapeutic streaming over the body)
- Piṇḍasveda Vidhi (Sudation by application of poultice)
- Annalepana Vidhi (Navara rice paste anointment)
- Śirolepana Vidhi (Medicated anointment over the head)
- Kāla Vidhi (Suitable times of day and year for procedures)
- Snehapāna Vidhi (Drinking of medicated oils and fats)

He also uses his linguistic skill to allude to the point that the Piṇḍasveda mentioned in the text (using Śāṣṭhika) is just an example for the various Piṇḍasvedas possible. One of the initial and authentic references with respect to Annalepana is seen in this text.

The idea that these procedures are extensions of the ideas in Bṛhatrayīs has rightly been conveyed in the commentary of the fifth chapter. The sudation using bolus has been derived from the mentioning of Piṇḍasveda for Vāta diseases. Kāyaseka or Pizhicil is a modified form of Tailadroṇīśayanaṁ<sup>(6)</sup> (lying in oil tub) advised in Bāhyāyāma and Antarāyāma (the reason why diseases like convulsive, spastic pathologies are primarily included in the indications of kāyaseka). Śirasseka is mentioned in classics. Takradhārā must be an alternative usable in Kapha-Pitta predominant pathologies deduced by the wise physicians.



The concept of Droṇīkaṣāya (Gandharvahastādi) and related practices have also been elaborated in the fifth chapter<sup>(7)</sup>. This summary is just an introduction to the multiple facets of Śrī. Rāman Menon and Śirassekādividhiḥ. There are a large number of other views of the author inside and outside the text which are worth thinking and debating.

### Status in Press

The book was published for the first time by the author himself in 1929, with an auto-commentary (commentary by the author of the main text), “Bhāvaprabodhini”. The printing and publishing were done by the Dharma Kāhaḷam Press, Cranganore (Koṭuṅgallūr). This print is commercially unavailable now. The current, available version of the book has been edited by Vaidya M. Prasad, (Renowned Vaidya, Teacher, Director and Chief Physician at Sunethri Ayurvedashram and Research Centre, Thrissur), and published by Vaidyabhooshanam K Raghavan Thirumulpad Foundation for Ayurvedic studies, Chalakkudy in 2009.

### Conclusion

The contents and idea of Śirassekādividhiḥ open up a large scope for debates and discussions. The opinions of the author need not be conclusive in many of the areas. The most important aspect about the text is that it is an attempt to add to the existing knowledge in the classics and also to update and elaborate on the aspects that have been insufficiently elaborated, and bringing them into practice, in the light of scientific and logical thinking. After all, it is the “Śāstrārthas (principles)” or “Artharūpa” of Ayurveda that is eternal and universal; not the “Prayogās (Practices)” or “Śabdarūpa (Textual documentation of observations)”!

### References

- (1) Mūrdhaseka, Kāyaseka, Piṇḍasveda, Annalepana, Śīrolepa
- (2) Keraliya Cikitsā Paddhati, by Dr. Pāvanā Jayarām and Dr. Manoj Śankaranārāyaṇa, (Published by Sarada Mahadeva Iyer Trust, Kanyakumari, 2010) with substantial evidence, establishes that the usage Keraliya Pañcakarma is a misnomer.
- (3) The dīpana karma of Guḍūcyādi gaṇa is understandable by Caraka's analogy in Paṭtika Grahaṇi roga, wherein the Agni is hampered by vitiated Pitta, just like hot water extinguishes fire. In that condition, to dry up the watery content and let the fire content alone remain, drugs which are bitter in taste (Tikta) are administered. Tikta is the predominant taste in the ingredients of Guḍūcyādi.
- (4) Hence the usual pattern of Hetu-Liṅga-Auśadha hasn't been followed here.
- (5) The view of Dhārākālpakāra about this point is interesting; he advises heating of the liquid to a point that it just melts for seka in Kapha, Rakta and Pitta conditions.
- (6) Aṣṭāṅga Hṛdayaṁ Cikitsāsthānaṁ 21/38.
- (7) Gandharvahastādi kaṣāya is indicated in all these five procedures. In patients with constipation, it has to be given just before the procedure and in patients who have smooth bowels, it shall be given after the procedure, just before food. There was also an extant practice of giving Gandharvahastādi in the morning and disease-specific medicine in the evening.

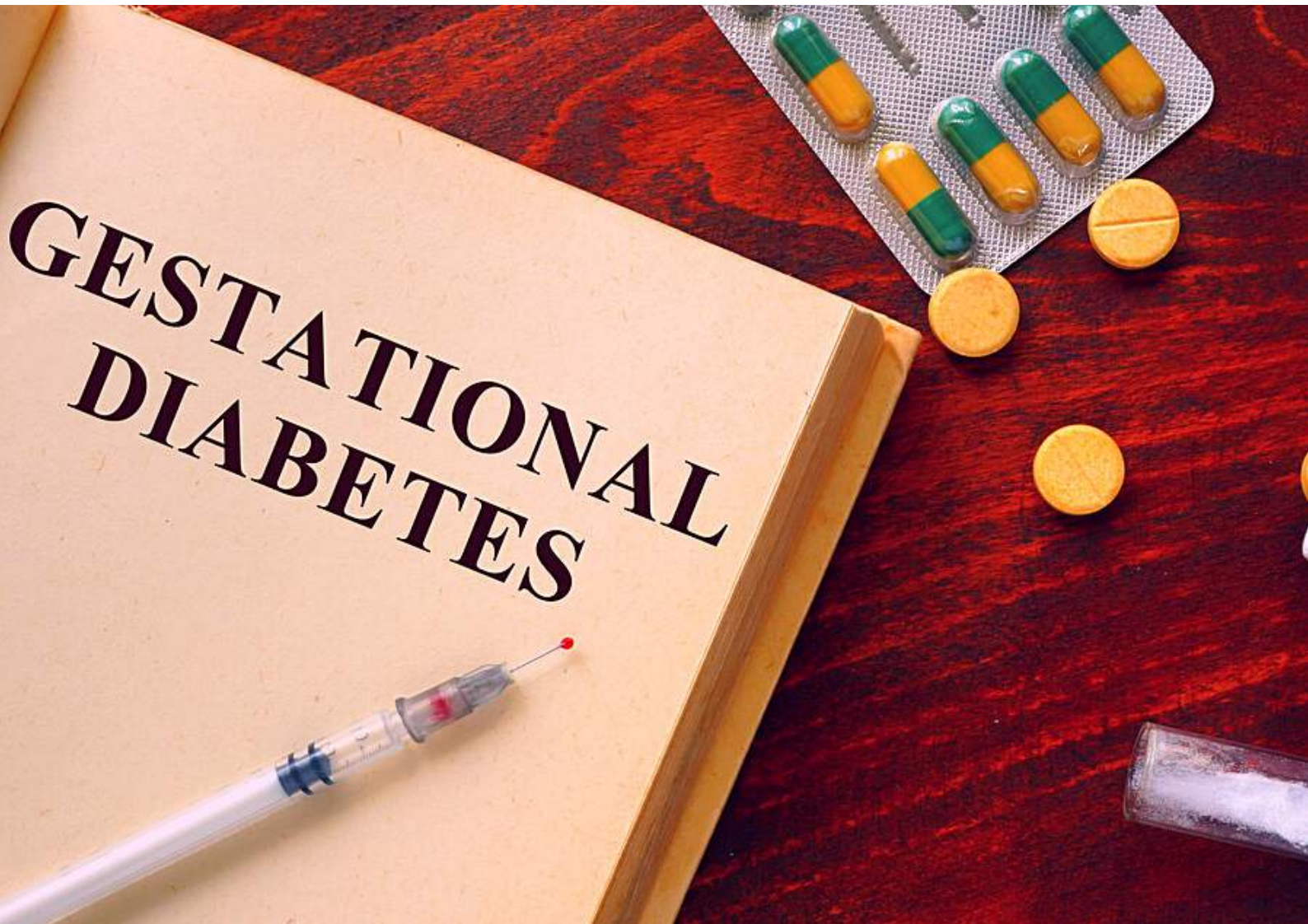




# DIABETES TIPS

Practising Yoga poses like Balasana, Adhomukha Swanasana, Sethu Bandhasana, Dandasana, Vrikshasana etc helps to maintain health in a diabetic patient.

# A REVIEW ON THE LINES OF PRAMEHA



Gestational Diabetes (GDM) has attained relevance due to its increased prevalence in the last few decades. GDM can often lead to undesirable complications to the gravid and the offspring including labour complications and abnormal growth pattern in the perinatal period. Though most of the cases subside after gestation, some may prevail and there is increased risk of developing type2 diabetes within a span of next 10-20 years in the mother. The intrauterine programming of the fetus places it at a high risk of developing metabolic syndromes including diabetes and obesity. That is, the development of gestational diabetes in a gravida affects the current generation as well as the future generations indirectly, which demands more discussions over the subject. Conventionally, GDM is managed initially with non-pharmacological measures like Medical Nutrition Therapy (MNT) including diet and physical exercise in such a way that excess weight gain and postprandial hyperglycemia are avoided ensuring adequate nourishment to the mother and fetus. Pharmacotherapy includes insulin and oral antidiabetic agents. Though there is no direct mention of Garbhini Prameha, there is an extensive description of Prameha Vyadhyavastha in ayurvedic literature.

The Intention of this paper is to review gestational diabetes from an Ayurvedic perspective.



## Current Scenerio

Gestational Diabetes Mellitus is defined as any degree of glucose intolerance with the onset or first recognition during pregnancy(1). Worldwide, one in 10 pregnancies is associated with diabetes, 90% of which are GDM. In India, one of the most populous countries globally, rates of GDM are estimated to be 10-14.3% which is much higher than the west. As of 2010, there were an estimated 22 million women with diabetes between the ages of 20 and 39 and an additional 54 million women in this age group with impaired glucose tolerance (IGT) or pre-diabetes with the potential to develop GDM if they become pregnant(2).

## Pathophysiology of gestational diabetes mellitus w.s.r physiology of pregnancy.

Physiologically, during early pregnancy glucose tolerance is normal or slightly improved and peripheral sensitivity to insulin is normal. This is brought about by the action of maternal estrogens and progesterone which induce B cell hyperplasia and increased production of Insulin.

In the second and third trimester placental hormones like human placental lactogen, human placental growth hormone decreases maternal insulin sensitivity, which increases the insulin resistance to three times normal, stimulating the maternal system to use other sources, other than glucose. Free fatty acids levels which are increased due to the insulin resistance aids for maternal functioning while glucose is preferentially diverted to the fetus. Fetal blood glucose is 10-20 mg lower than the maternal level ensuring glucose is transferred to the fetus across the placenta by simple diffusion. Along with this pancreatic cells normally increase their insulin secretion to compensate for the insulin resistance of pregnancy. As a result, changes in circulating glucose over pregnancy are small compared with the large changes in insulin sensitivity.

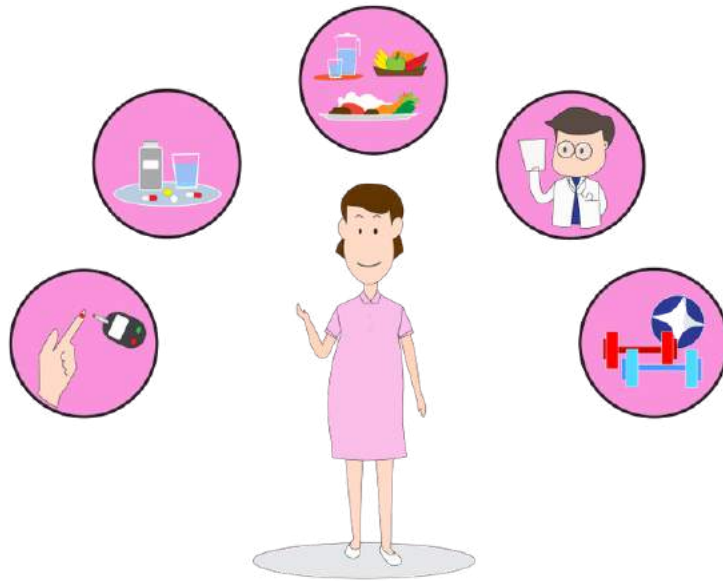
GDM is a form of hyperglycemia which results when the insulin secretion is unable to match this insulin resistance of pregnancy. Majority of women with GDM appear to have beta-cell dysfunction. They have chronic insulin resistance. The additive effect of insulin resistance that normally happens in pregnancy leads to the development of GDM in pregnancy. These women are generally obese and develop diabetes at a later age(3). 5-10% of cases of GDM develop due to autoimmune destruction of pancreatic cells and is characterized by the presence of anti-islet-cell antibodies and appear to evolve as type 1 diabetes and Monogenic diabetes which are Genetically transmitted either as Mutations in autosomes or Mutations in mitochondrial DNA.

## Ayurveda View

Ayurvedic view Prameha has been simply described as Prabhoota-Aavilamootrataa(4)(~passage of excessive turbid urine ). Mootra- the mala which aids the karma of Kleda Vahana in the body is taken as the pointer of the disease manifestation of Prameha. To make the idea of Kleda clear we may put it into two statements:1. Fundamentally, Rasadhātu is responsible for the replenishment of Kleda and the other Dhatus are formed from kleda 2. The mala which are formed as the derivative in the transformation processes are in the form of Sneha and these mala are added on to the pool of Kleda existing in the body which later gets expelled out from the body through well-controlled and structured mechanisms(5).



Basically, this mechanism is also deranged at a point in the Samprapthi of Prameha which in turn makes Prameha a Vasthyasritha Roga. The causation includes Beejadushti, Aharaja and Viharaja factors.



As per classics, the incidence of Prameha is reduced in females due to the presence of Arthava. Arthava is the Upadhatu of Rasadhatu itself. Arthavapravrthi during each month helps to eliminate the Vatadi Doshadushti and Kledanirharana which in turn helps in prevention of Prameha. Absence of Arthava-which is a Upadhatu of rasa –in Garbhini can lead to the accumulation of Dushtakleda incidence, the Samprapthi of Prameha.

In Garbhini there is a physiological alteration of Dhatus, which is essential for harbouring the Garbha.

a) Rasadhatu: Soon after the conception of Garbha, it starts to derive Poshana from the mother. Sampanna Ahara rasa is responsible for Sthiti, Utpathi and Vinasa (6). Ahara Rasa of Garbhini is divided to perform three functions(7).

1. Nourishment of Garbhini
2. Nourishment of the Garbha
3. Formation of Stanya

b) Arthava: Arthava is considered as the Upadhatu of Rasadhatu as well as Rakthadhatu. In the context of the formation of Aparā, it is described as Arthavavaha Srotases are obstructed by Grihitha Garbha and hence Arthava is not visualised.

This Arthava traverses upwards and forms Aparā. Rest part goes up again resulting in the formation of Stanya(8). From the above verses, it is clear that functions of rasa as well as Arthava are very much altered in the period making Garbhini more susceptible to be afflicted by Prameha.

Maintenance of Agni-Rasadhatu- Kleda balance of the body via Garbhini Paricharya is pivotal in avoiding this. Management of Prameha involves Sodhanakriya as well as Samanaprayogas according to the Rogi and Rogabala.

Agni Deepana-Kledahara-Sleshma Medohara Chikitsa has to be adopted. Physical and psychological disorders in Garbhini are similar to any other individual due to similarity in Dosha and Dooshya, but the treatment differs in context of Garbhini(9). Hence the treatment protocol has to deviate from the general Prameha Chikitsa. Sodhana kriyas are never an option since Garbhini is Sodhana Anarha. While resorting to Samana Chikitsa, Samavastha of Rasadhatu has to be ensured so as to ensure the well being of the Garbha as well as the Garbhini. Mrdu, Sukha-Atheekshna drugs, diet and regimens should be adopted.

## Conclusion

Gestational diabetes mellitus is evolving as a major health problem in the perinatal period which compromises the quality of life of both the current and future generations. Designing safe and effective methods for its prevention as well as management is the need of the hour. Understanding the Nidana – Samprapthi – Chikitsa of Prameha and superimposing it on the Garbhinyavastha to meet the situational needs is a challenging task. The Praakrthavastha of pregnancy itself harbours to the Agni-Kleda –Rasa Dushti which prepares the background for the evolution of Prameha Vyadhi. Identifying women who are more prone to, the Nidanas that accelerates and the point of conversion of this Praakrthavastha to the Vaikrthavastha can bring about tremendous possibilities in the prevention of GDM. The efficacy of preconception care and antenatal care should be studied in this regard. Conversion of general principles of management of Prameha to suit the Garbhini without hampering the Garbha, identification of safe and ideal Oushadha-anna-viharas can contribute to successful management.

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**Dr Surya Lekshmi P.B**

# ROLE OF RASAYANA CHIKITSA IN DIABETES



Dr Mythri H S

Diabetes mellitus is a chronic disease caused by inherited and/or acquired deficiency in production of insulin by the pancreas, or by the ineffectiveness of the insulin produced. Such a deficiency results in increased concentrations of glucose in the blood, which in turn damages many of the body's systems, in particular the blood vessels and nerves(1). The term "diabetes" was first coined by Aretaeus of Cappadocia (81-133AD) which means to siphon. Later, the word Mellitus (honey-sweet) was added by Thomas Willis in 1675 after rediscovering the sweetness of urine and blood of patients (first noticed by the ancient Indians). It was only in 1776 that Dobson firstly confirmed the presence of excess sugar in urine and blood as a cause of their sweetness. An important milestone in the history of diabetes is the establishment of the role of the liver in glycogenesis, and the concept that diabetes is due to excess

glucose production by Claude Bernard in 1857(2). Indian scientific literature identified the disease as Madhumeha / Kshaudrameha or honey urine noting that the urine would attract ants, a vataja(3) subtype of Prameha, which is also a Santarpanajanya roga(4). Madhumeha is the appropriate term for diabetes mellitus type 2 (DMT2). Presently, in Ayurveda, two terms are interchangeably being used in the context of diabetes viz. Prameha and Madhumeha. The International Diabetes Federation has estimated that globally there are 415 million people with diabetes in 2015 and is predicted to increase to 642 million by 2040. In the world, India stands second with 69.2 million people with diabetes and another 36.5 million with prediabetes which is a high-risk condition for diabetes and cardiovascular disease(5). The Cost of Diabetes in India (CODI) study was a large community-based survey of diabetes costs.

According to the results of the CODI study, ambulatory care constitutes 65% of the cost, whereas hospitalization cost is 35%. Therapy cost is 31% of which specific antidiabetic drug cost is only 17%. Ambulatory care including monitoring and doctor visits constitute 34% costs(6).

## MADHUMEHA

The patients of Prameha inherently carry the risk of impaired Agni and depleted Ojas status, that is, hypometabolic, and immuno-compromised state. State of Kshaya of all the Dhatus and Ojus in patients of Diabetes is very evident. Ayurveda considers diabetes as Kaphaja disease in which Medas (adipose factor) and Ojas (bio-strength cum immune strength) have been described as the main factors in the pathogenesis of the disease. Agni and Ama, that is, autotoxins, play a major role in disease manifestations and complications.





These ancient observations are outstanding information regarding the nature of the disease. It is now well-known that DM results due to metabolic derangement. Similarly, it is being now gradually conceived that there is strong evidence of immune disorder and immunodeficiency in all diabetics and its related complications. Possibly, because of such morbid factors, the propounders of Ayurveda considered Ojas as an important Dushya (morbid factor) of Madhumeha, hence it is also termed as Ojomeha. Treatment for Diabetes in Ayurveda treats the cause and also helps in maintaining the Agni and Ojas status, that is, metabolic stability and immunity in diabetic patients. Rasayana Chikitsa is a unique branch of Ayurveda. The word Rasayana means the way for attaining excellent Rasadi Dhatus. The improved nutritional status and the better qualities of Dhatus lead to a series of secondary attributes of Rasayana(7), which bestow longevity, impart strength, Ojabala etc. In Sushruta Samhita the word Bala refers to Ojus, which has a function of maintaining the Bala. In fact, many authors of Ayurveda are of the opinion that Bala should be referred to as Ojus. The word Bala also denotes normal Kapha as it has the function of providing Bala to the body. The emergence of concepts of immunity, bioenergy and nutritional supplements in contemporary science has given an opportunity for the scientific validation of the concept of Bala and related actions. The very lifestyle that Ayurveda advocates, like Dinacharya, Ritucharya are based on the principles of maintaining Bala.

Rasayana drugs are the medications which help in proper circulation and nourishment of Rasadi Dhatus. It brings stability in the Ayu. It helps an individual to attain and maintain a healthier state of body<sup>8</sup>. Naimittika Rasayanas are the class of drugs which are disease-specific rejuvenators. In Diabetes, hyperglycemia promotes the auto-oxidation of glucose to form free radicals. The generation of free radicals beyond the scavenging abilities of endogenous antioxidant defences results in macro- and microvascular dysfunction<sup>9</sup>. Many studies on oxidative stress, antioxidant treatment, and diabetic complications have shown that oxidative stress is increased and may accelerate the development of complications through the metabolism of excessive glucose and free fatty acids in diabetic and insulin-resistant states. Traditionally, Rasayana drugs are used against a plethora of seemingly diverse disorders with no exact etiopathological connections as per conventional medicine. Though this group of plants generally possesses strong antioxidant activity, only a few have been investigated in detail. 'Rasayana' plants with potent antioxidant activity have been reviewed for their traditional uses, and mechanism of antioxidant action. In the Sushruta Samhita, a separate chapter has been dedicated for the Rasayana Kalpa Chikitsa indicated for the management of Madhumeha<sup>10</sup>. It describes four different medications which can be used singly, in a dose titrated manner to get the best results in controlling Diabetes. It includes Shilajathu, Makshika, Tugaraka and Kahadira. Shilajathu is scientifically identified as Asphaltum Punjabiannum. It is commonly called as Kanmadam in Malayalam and Mineral Pitch in English. Shilajathu has also been highlighted by other authors owing to its Shoshana (parching) and Chedana (Splitting) properties. Shilajathu gives best results when triturated with Shalasaradi Gana Dravyas. It should be consumed in the empty stomach by mixing well with Sarodaka.



A Tula measure of this drug when gradually taken, in adequate doses, tends to improve the strength and complexion of the body, cures Madhumeha and enables the user to witness a hundred summers on earth, free from disease and decay. Each Tula weight of this medicine, adds a century to the duration of human life, while ten Tula measures extend it to a thousand years. Any of the Rasayana therapies should follow a complete Shodhana therapy including Vamana, Virechana in order to obtain the best results. Other Nighantus of Ayurveda like Bhavaprakasha, Kaiyadeva etc describe some more drugs to have rejuvenating effects in a patient of Madumeha. These disease-specific rejuvenators include Haritaki, Amalaki, Guggulu, Raupya, Naga, Abhraka etc.

It is generally accepted that overproduction of nitric oxide is associated with oxidative stress, which is involved in the pathogenesis of cardiovascular diseases, diabetes, etc. In one study, guggulsterone isomers (Z- and E-forms) exhibited potent inhibitory activity against the production of nitric oxide-induced by bacterial lipopolysaccharides (LPSs) in macrophages<sup>11</sup>. Abhraka Bhasma has been found to modulate the activity of superoxide dismutase and catalase enzymes as well as the total reduced glutathione (GSH) content. Larvae and adults feeding on a diet supplemented with it exhibit significantly lower levels of total GSH content and without any conclusive effect on GSH: oxidized glutathione ratio, free radical scavenging capacity, and extent of lipid peroxidation<sup>12</sup>. Madhumeha is one of the major conditions where depletion of Ojus is notable. Thus, Rasayana Chikitsa is an imperative requirement to manage the disease and to prevent complications. Diabetes is a chronic inflammation-induced disorder where reactive oxygen species tend to damage the tissues by the process of oxidation. Hence, Rasayana Chikitsa would prove to be the best possible management towards treating Diabetes.

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# DIABETES TIPS

Use of Indian spices at the right amount helps in the aid of digestion and metabolism, hence helping fat burn.



# DAL WITH AVARTAKI

## Easy & Healthy Recipe

Avartaki or Cassia auriculata is known as Aveeram / Ponnaveeram in Malayalam is acclaimed as an anti-diabetic herb. Pramehahara properties of Avartaki, are mentioned in detail in Kaiyadeva Nighantu. The drug is Tikta, Kashaya in rasa and has Laghu, Rooksha and Sheeta Guna. The dosha karma of Avartaki is Pitta Kapha Hara. The flowers, leaves and young pods are the edible parts. Daal with Avartaki flowers is a flavoursome diabetic-friendly recipe.

### Ingredients:

1. **Avartaki Pushpa - 2 cup**
2. **Aadhaki (Pigeon Pea) - ½ cup**
3. **Mudga (Green gram) - ½ cup**
4. **Shallots - ½ cup (chopped)**
5. **Green chilli - 3 sliced**
6. **Tomato - 1 (chopped)**
7. **Garlic - 3-5 cloves (crushed)**
8. **Turmeric powder - 1 tsp**
9. **Dried red chilli - 2**
10. **Cumin seeds - 1 teaspoon**
11. **Mustard seed - 1 teaspoon**
12. **Black Gram - 1 teaspoon**
13. **Oil - As required**
14. **Salt - As required**

The soft petal of the flower is used. Fresh Avartaki flowers if not available can be substituted with dried ones.

**Preparation:**

- Cook Aadhaki and Mudga with required salt separately.
- Heat oil and add mustard, cumin and dried chillies, crushed garlic and saute well.
- Add chopped onion, tomato, green chilli and cook for 5 min to blend well. Add Ponnaveeram flowers and saute well.
- Add the Ponnaveeram mixture into the daal and cook for another 10 min.

**Medicinal Value:**

- Avartaki flowers are highly beneficial for persons with diabetes and also in dyslipidemia. The drug is indicated in urinary tract infections and skin disorders.
- Relieves constipation and promotes digestion.
- C. Auriculata is a rich source of antioxidants, tannins, flavonoids, and phytosterols.



**Dr Reshmi M Nair**



# IMPORTANCE OF IDENTIFICATION IN THE PRE DIABETIC STAGE

Type 2 Diabetes Mellitus, the silent killer disease has been a subject of attention over the years. It is a heterogeneous group of disorders, characterized by variable degrees of insulin resistance, impaired insulin secretion, and increased hepatic glucose production. Once established, this condition stays long and progressive, disturbing the entire body metabolism, eroding the quality of life of the subjects.

Latest studies show that chronic low-grade inflammation induced by overeating, physical inactivity and psychological stress are the major pathophysiology behind diabetes, obesity, insulin resistance and many related metabolic disorders. However, the exact mechanism linking them is yet to be revealed.

Analysing facts and figures published by the International Diabetes Federation in 2019, it is estimated that approximately 463 million adults are living with diabetes, which may get doubled in the coming two decades. The proportion of people with Type 2 Diabetes Mellitus is increasing at an alarming rate. 79% of adults with diabetes are living in low and middle-income countries and 1 in 2 people with diabetes remain undiagnosed(1). This very fact is significant that our attention should go into the early or premonitory stage of this disease and should emphasize on tackling it there itself before the pathology roots become strong.

Prediabetes is an intermediate state of hyperglycemia with glycemic parameters above normal but below the diabetes threshold(2).

## **Blood parameters indicating Pre – diabetes<sup>3</sup>**

- HbA1C level between 5.7% and 6.4%.
- Fasting blood sugar level from 100 to 125 mg/dL.
- Oral glucose tolerance test – Blood sugar level from 144 to 199 mg/dL is considered prediabetes.

## **Importance of identification at the pre-diabetic stage**

Type 2 Diabetes mellitus is considered to be a disease of a life-time, demanding lifelong medication. So, identifying at the earlier stage and making adequate lifestyle modifications may free millions from such an awful life. This disease often goes undiagnosed and, in many cases, it is identified too late, where the complications are popping up or there lies a mosaic of comorbidities.

## Prameha in Ayurveda

Ayurveda considers Prameha as a spectrum of disorders characterized by polyuria or excessive urination. Ayurvedic texts give elaborate discussions on Prameha and it says that Prameha can be innumerable depending upon the various permutations and combinations of the three Doshas and the ten Dooshyas, in response to the varying external and internal causative factors.

Physician Charaka in his Nidana sthana has quoted 'Nidana Dosha Dooshya Visesha' - the multiplicity and specificity of etiopathological factors and 'Vikara Vighata Bhava'- the innate disease resistance which makes heterogeneity in the whole Prameha population(4). 20 specific types of Prameha from the possible innumerable manifestations have been identified and detailed in Ayurvedic texts.

Even though the three Doshas and ten Dooshyas are involved in the various stages of the disease, the most prominent Dosha in Prameha is Kapha and Dooshya is Medo Dhathu. Their impairment can be traced from the premonitory stage itself.

Polyuria, Polyphagia and Polydipsia are considered to be the suggestions of Type 2 DM in modern medicine. However, in Ayurveda, the Poorvaroopa covers a larger number of signs and symptoms. Awareness of these can help people for self-health analysis and also seek medical aid on time.

Premonitory Signs & Symptoms of Prameha <sup>5</sup>	Dosha & Guna involved <sup>6</sup>
· Matting of the hair	· <i>Kapha dosha, Pichila guna</i>
· Sweet taste in the mouth	· <i>Kapha Vridhi, the involvement of rasa Dhatu</i>
· Burning sensation in hands and feet	· <i>Pitta dosha, Ushna guna</i>
· Dryness in mouth, palate and throat	· <i>Vata vridhi, Ap dhatu kshaya</i>
· Thirst	· <i>Pitta vridhi, Udaka kshaya</i>
· Laziness	· <i>Kapha vridhi, Sthira guna</i>
· An increased amount of excreta from the body, Adherence of excreta in the orifices of the body	· <i>Mamsa Mala vridhi, Srothorodha, Mamsa kshaya</i>

· An increased amount of excreta from the body, Adherence of excreta in the orifices of the body	· <i>Mamsa Mala vridhi, Srothorodha, Mamsa kshaya</i>
· Numbness in hands and feet	· <i>Vata dosha, Seetha guna</i>
· The emanation of foul smell from the body	· <i>Pitta dosha, Visra guna</i>
· The attraction of insects and ants by the body and urine	· <i>Kapha vridhi, the involvement of Rasa Dhatu</i>
· Flabbiness of the body	· <i>Kapha Dosha, Mridu Guna</i>
· Excessive growth of hair & nails	· <i>Kapha Vridhi, Asthi Mala Vridhi</i>
· Excessive sleep and continuous drowsiness	· <i>Kapha Dosha, Guru guna</i>

## Etiological Factors

Ayurveda emphasises on the principle of 'Prevention is better than cure' on dealing with all diseases. The factors which disturb the ideal functioning of Kapha dosha and Medo Dhathu are the foremost culprits in Prameha, which is primarily a lifestyle disease. Identifying and rectifying them at an early stage can save one from the illness. The various etiological factors to be considered are:

### Genetic factors

A hereditary background of Type 2 Diabetes Mellitus always increases the chance in the coming generation too. Kulaja Vyadhi 7refers to that genetic predisposition for this disease.

### Food habits (8)

Unhealthy diet habits play a major factor in the increase of diabetes to a great extent. Consuming oily, heavy food, milk products, pastries, so-called Abhishyandi Ahara always contribute to this.

### Lifestyle and occupation

Sedentary lifestyle is a major villain in the case of Prameha. The extra calories people intake piles up in the body as fat deposits, evident from an unhealthy BMI and Waist Hip Ratio, which is common to many metabolic disorders with insulin resistance in the background. Kapha Medo dushti is the Ayurvedic pathology behind this.

## Mental health

Studies show that psychological stress and depression reflects on hyperglycemia badly. Negative emotions influence negatively on glucose control and quality of life.<sup>9</sup> Work pressure and lack of sleep are the major reasons for contracting metabolic disorders among young people these days.

## Geographical location

Prameha being a Kaphaja Vyadhi is seen more concentrated in zones of humid climate (Anoopa Desa) than in arid zones (Jangala desa). For example, the state of Kerala is known as the 'diabetic capital of India', and according to Ayurveda the geography of Kerala also contributes to this high incidence and prevalence of the disease. Adding to this, Kerala is a consumer state, where many people are doing jobs requiring less physical activities and have a tendency to consume more junk foods, alcohol etc which worsens the situation. The heavy and oily food culture of Arabs is copied by Keralites as such, forgetting the difference in the land, as a Jangala region requires Snigdha and Guru Ahara, which in turn works as Abhishyandi for people of Anoopa Desa.

## Metabolic syndromes

Those diseases arising as a result of over nourishment (Santarpanotha Vyadhi) may cause Prameha as a comorbidity in the future. The pathology of insulin resistance has identified common to many metabolic disorders. Females with PCOS and those suffering from hypothyroidism and obesity are having higher chances of getting Diabetes.

## MANAGEMENT

Diagnosis at an earlier stage improves the prognosis. Every disease when detected in Poorvaroopo Avasta, and suggesting proper management at that stage, checks its full-fledged manifestation and avoids the risk of complications. According to Ayurveda, Diet and Regimen are considered equally or more important than medications and procedure-based therapies in case of Prameha.

## Diet

Ayurveda considers "Ahaara as Mahabhaishajya". Food is responsible for both disease and health. It is very important to know what to eat, how to eat, when to eat and where to eat. Ayurveda clearly explains the Pathya to be followed for each disease. Food items including milk, milk products, sugar items, curd etc should be strictly avoided as they may increase Kleda in the body as is Abhishyandakari. Low glycemic index food items like Yava (Barley) is advised in Prameha. Several medicated drinks (Toya preparations) are mentioned in Prameha which includes Ekanayaka Toya, Kusodaka (water boiled with Kusa), Madhoodaka (water mixed with honey) Sarodaka (taking water in vessels prepared of Asana)<sup>10</sup>. Including Gooseberry and turmeric in diet is also ideal.

## Regimen

Ayurveda gives immense importance for exercise in its advice on daily and seasonal regimen. Exercise is also given a major role in the management of Prameha. Proper exercise always reduces the excess Kapha and Medo Dhatu and channelizes their proper functioning. Strenuous physical workouts are prescribed for Prameha patients, which is accepted as the best-cost free treatment itself.







## CONCLUSION

Identification in the prediabetes stage is very important in the case of Type 2 Diabetes Mellitus. Looking up for the subjective parameters and routine blood check-up is essential in monitoring this disease. Lifestyle modifications including a healthy diet, regimen and adequate physical activity can prevent the pathogenesis of disease and thus can avoid lifelong medications

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**Dr Vaishnavy P M**



A close-up photograph of a woman with dark hair sleeping peacefully in a bed. She is lying on her side, resting her head on a white pillow. Her eyes are closed, and she has a slight smile on her face. The lighting is soft and warm, creating a calm and restful atmosphere. A white rectangular box is superimposed over the center of the image, containing the text "DIABETES TIPS" in white, uppercase, sans-serif font.

# DIABETES TIPS

Good sleep helps to manage blood sugar spikes and dip.

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*The food we choose makes a difference*

