

# Journal of Research in Indian Medicine

The Official Publication of Health Education Bureau.



## Technical Support & Queries:

For further queries & technical support mails us at:  
serviceheb@gmail.com  
Health Education Bureau  
www.heb-nic.in



## The Journal

Journal of Research in Indian Medicine (JRIM), Print ISSN No: 2582-0648 is peer-reviewed journal published on behalf of the Health Education Bureau. The Journal published articles on the subject of medicine. The Journal is published in Jan and July.

## Information for Authors

There are page charges for JRIM submissions, Please check. <http://heb-nic.in/jrim-issues/> for details. All manuscripts must be submitted online at <http://heb-nic.in/jrim-issues>

## Subscription Information

A subscription to comprises 2 issues. Prices include postage. Annual Subscription Rate- **INR 2410.00 for India (For Print)** **INR 1440.00 for India (For Online)**

For mode of payment and other details, please visit <http://heb-nic.in/jrim-issues/>

Claims for missing issues will be serviced at no charge if received within 60 days of the cover date for domestic subscribers, and 6 months for subscribers outside India. Duplicate copies cannot be sent to replace issue not delivered because of failure to notify publisher of change of address.

The journal's published issue will be distributed by Health Education Bureau Copies are sent to subscribers directly if a copy is received for personal use as a member of the association/ society, one cannot resale or give-away the copy for commercial or library use.

The copies of the journal to the members of the association are sent by ordinary post. The editorial board, association or publisher will not be ordinary for non receipt of copies. If any member/subscriber wishes to the copies the registered post or courier, kindly contract the publisher's office. If a copy returns due to incomplete, incorrect or changed address of a member/subscriber on two consecutive occasions, the names of such members will be deleted from the mailing list of the journal. Providing complete, correct and up-to-date address is the responsibility of the member/subscriber.

Non members : All change of address information to be sent to [serviceheb@gmail.com](mailto:serviceheb@gmail.com) (i.e not only for nonmembers.)

## Advertising Policies

The Journal accepts display and classified advertising. Frequency discounts and special positions are available. Inquiries about advertising should be sent to [serviceheb@gmail.com](mailto:serviceheb@gmail.com)

The Journal reserves the right to reject any advertisement considered unsuitable according to the set policies of the journal.

The appearance of advertising or product information in the various sections in the journal does not constitute an endorsement or approval by the journal and/or its publisher or the quality or value of the said product or of claims for it by its manufacture.

## Copyright

The entire contents of the Journal of Research in Indian Medicine are protected under Indian and International copyrights. The journal, however, grants to all users a free, irrevocable, worldwide, perpetual right of access to and a license to copy, use, distribute, perform and display digital medium for any reasonable noncommercial purpose, subject to proper attribution of authorship and ownership of the rights. The journal also grants the right to make small numbers of printed copies for their personal non-commercial use.

## Permissions

For information on how to request permissions to reproduce articles/Information from this journal, please visit:

<http://heb-nic.in/jrim-issues>

## Disclaimer

The information and opinions presented in the journal reflect the views of the authors and not of the Journal or its Editorial Board or the Publisher. Publication does not constitute endorsement by the Journal. Neither the Health Education Bureau, nor its publishers nor anyone else involved In creating, producing therein, assumes any liability or responsibility for the accuracy, completeness, or usefulness of any information provided in the Journal of Research in Indian Medicine nor shall they be liable for any direct, indirect, incidental, special, consequential or punitive damages arising out of the use of the Journal of Research in Indian Medicine. The Journal of Research in Indian Medicine, nor its publishers, nor any Journal of Research in Indian Medicine represents or warrants that the information contained herein is in every respect accurate or complete, and they are not responsible for any errors or omissions or for the results obtained from the use of such material. Readers are encouraged to confirm the information contained herein with other sources.

## Addresses

Editorial Office

Health Education Bureau, 55/20,Rajat Path, Mansarovar, Jaipur, Rajasthan - 302020

Mail Us at: [serviceheb@gmail.com](mailto:serviceheb@gmail.com)

Call Us at: Land Line: 0141-2782681

Mobile:91-07976447983

## Published By

Health Education Bureau, 55/20

Rajat Path, Mansarovar Jaipur, Rajasthan

India, Pin- 302020

Tel- 0141-2782681, Mob.- 09636348191



GST Reg. No: 08AJAPA7570J1.

## Bureau For Health And Education Status Upliftment

{Constitutionally Entitled As Health-Education, Bureau }

### SUBSCRIPTION FORM

I/WE WANT TO SUBSCRIBE BELOW MENTIONED PRODUCT, PLEASE ACCEPT MY/OUR SUBSCRIPTION APPLICATION WITH FOLLOWING PARTICULARS

Name of Organization/Institution/Individual .....	SUBSCRIPTION TARIFF				
	Particulars	Duration of Subscription	Price	Price Including GST 18%	Tick in Application Box
Mob. No. .... Email ..... Any Additional Information .....	<b>Journal of Research in Indian Medicine</b>	<b>1 Year (Print)</b>	<b>2410</b>	<b>GST-NA</b>	<input type="checkbox"/>
<b>Account Details</b>					
<b>Name of A/C Holder: Health Education Bureau</b> <b>Name of the Bank: UCO Bank</b> <b>Account Number:20960210003121</b> <b>IFSC code: UCBA0002096</b> <b>MICR Code:302028023</b> <b>Bank Branch Name &amp; Code: Mansarovar, Jaipur</b> <b>Branch Code:002096</b> <b>District &amp; State: Jaipur, Rajasthan</b>		<b>1 Year (Online)</b>	<b>1440</b>	<b>GST-NA</b>	<input type="checkbox"/>
	<b>AHMS (Ayu-Hosp- Manage - Soft) Software</b>	<b>Activation +1 Year Subscription</b>	<b>21016.95</b>	<b>24800</b>	<input type="checkbox"/>
		<b>1 Year (Renewal)</b>	<b>7457.63</b>	<b>8800</b>	<input type="checkbox"/>

I/We Hereby Enclose the Demand Draft/Cheque/NEFT/RTGS Transaction No. .... of Rupees..... Dated ..... Bank & Branch Name ..... in favor of "Health Education Bureau". Payable a Jaipur.

#### Address of Subscribing Organization/Institute/Individual

City: District: State: Pin Code:			
----------------------------------	--	--	--

Date:  
Place:

Signature:

PLEASE SEND US THE FILLED FORM WITH REQUISITE FEES AT FOLLOWING ADDRESS

Address: **HEALTH EDUCATION BUREAU**  
55/20, Rajat Path, Mansarovar,  
Jaipur, Rajasthan, India, Pin :302020  
Contact: 0141-2783681, 07976447983, 08690723563  
E-Mail: [support@heb-nic.in](mailto:support@heb-nic.in), [serviceheb@gmail.com](mailto:serviceheb@gmail.com)  
Website: [www.heb-nic.in](http://www.heb-nic.in)

**Material and Methods:** This section may be divided into sub-sections if it facilitates better reading of the paper. The research design, subjects, material used, and statistical methods should be included. Results and discussion shall not be drawn into this section. In human experimentation, ethical guidelines shall be acknowledged.

**Results:** This section may be divided into subsections if it facilitates better reading of the paper. All results based on methods must be included. Tables, graphic material and figures shall be included as they facilitate understanding of the results.

**Discussion:** Shall start with limited background information and then proceed with the discussion of the results of the investigation in light of what has been published in the past, the limitations of the study, and potential directions for future research. The figures and graphs shall be cited at appropriate places.

**Conclusion:** Here, the major findings of the study and their usefulness shall be summarized. This paragraph should address the hypothesis or purpose stated earlier in the paper.

**Acknowledgments. Acknowledgments should appear on a separate page.**

**Tables.** Each table should be given on a separate page. Each table should have a short, descriptive title and numbered in the order cited in the text. Abbreviations should be defined as footnotes in italics at the bottom of each table. Tables should not duplicate data given in

**The text or figure.** Only MS word table format should be used for preparing tables. Tables should show lines separating columns with those separating rows. Units of measurement should be abbreviated and placed below the column headings. Column headings or captions should not be in bold face. It is essential that all tables have legends, which explain the contents of the table. Tables should not be very large that they run more than one A4 sized page. If the tables are wide which may not fit in portrait form of A4 size paper, then, it can be prepared in the landscape form. Authors will be asked to revise tables not conforming to this standard before the review process is initiated. Tables should be numbered as Table No.1 Title....., Table No.2 Title.... Etc. Tables inserted in word document should be in tight wrapping style with alignment as center.

**Figures, Photographs and Images:** Graphs and bar graphs should preferably be prepared using Microsoft Excel and submitted as Excel graph pasted in Word. These graphs and illustrations should be drawn to approximately twice the printed size to obtain satisfactory reproduction.

**Resolution:** Drawings made with Adobe Illustrator and CorelDraw (IBM/DOS) generally give good results. Drawings made in WordPerfect or Word generally have too low a resolution; only if made at a much higher resolution (1016 dpi) can they be used. Files of scanned line drawings are acceptable if done at a minimum of 1016 dpi. For scanned halftone figures a resolution of 300 dpi is sufficient. Scanned figures cannot be enlarged, but only reduced. Figures/Images should be submitted as photographic quality scanned prints, and if possible attach an electronic version (TIFF/ JPEG).

**Chemical terminology** - The chemical nomenclature used must be in accordance with that used in the chemical abstracts.

**Symbols and abbreviations** - Unless specified otherwise, all temperatures are understood to be in degrees centigrade and need not be followed by the letter 'C'. Abbreviations should be those well known in scientific literature. In vitro, in vivo, in situ, ex vivo, ad libitum, et al. and so on are two words each and should be written in italics. None of the above is a hyphenated word. All foreign language (other than English) names and words shall be in italics as a general rule.

**General Guidelines for units and symbols** - The use of the International System of Units (SI) is recommended. For meter (m), gram (g), kilogram (kg), second (s), minute (m), hour (h), mole (mol), liter (l), milliliter (ml), microliter (µl). No pluralization of symbols is followed. There shall be one character spacing between number and symbol. A zero has to be used before a decimal. Decimal numbers shall be used instead of fractions.

**Biological nomenclature** - Names of plants, animals and bacteria should be in italics.

**Enzyme nomenclature** - The trivial names recommended by the IUPAC-IUB Commission should be used. When the enzyme is the main subject of a paper, its code number and systematic name should be stated at its first citation in the paper.

**Spelling**-These should be as in the Concise Oxford Dictionary of Current English.

**Health Education Bureau, 55/20, Rajat Path, Mansarovar, Jaipur, Rajasthan, India**

**Pin- 302020, Tel - 0141-2782681, Mob: 9636348191, 07976447983**

\*All documents can also be E-mailed in scanned form to [support@heb-nic.in](mailto:support@heb-nic.in), [serviceheb@gmail.com](mailto:serviceheb@gmail.com)

# JOURNAL OF RESEARCH IN INDIAN MEDICINE

## EDITORIAL BOARD MEMBERS

### Dr. A Sharma

Ex Professor, National Institute of Ayurveda, Deemed to be University, Ministry of AYUSH, Govt. of India  
Mail ID: support@heb-nic.in

### Dr. Mohan Kumar B N

Principal, Atreya Ayurvedic Medical College Hospital & Research Centre, Doddaballapura Karnataka, India  
Mail ID: principal@atreyainstitutions.com

### Dr. M.P. Eswara Sarma

Principal, PNNM Ayurveda Medical College, Kerala, India  
Mail ID: sarmaeswar@gmail.com

### Ms. Veena Gulappa Kanthi

Principal, LKR Ayurvedic Mahavidyalya Gadhinglaj Kolhapur, Maharashtra  
Mail ID: docveenasar@rediffmail.com

### Dr. Deepak Kulshrestha

Principal, Govt (auto) Ayurved College Rewa (M.P.)  
Mail ID: dr.deepak.kulshrestha@gmail.com

### Dr. Anura P. Bale

Principal, Gomantak Ayurveda Mahavidyalaya & Research Centre, Shiroda - Goa  
Mail ID baleanura@rediffmail.com

### Prof. (Dr.) Vidula Gujjarwar

HOD PG Deptt. of Rognidan Evum Vikruti Vigyaan New Delhi  
Mail ID: shreemahalaxmi1969@gmail.com

### Dr. Ravi Kumar Srivastava

Associate Professor & H.O.D Agad Tantra Department, Govt. (Auto) Ayurvedic College & Hospital, Gwarighat, Jabalpur (MP)  
Mail ID: draviksri2506@gmail.com

Disclaimer: *The executive editor does not claim any responsibility, liability for statements made and opinions expressed by authors*

## EDITORIAL OFFICE

### JOURNAL OF RESEARCH IN INDIAN MEDICINE (JRIM)

HEALTH EDUCATION BUREAU, 55/20, RAJAT PATH,  
MANSAROVAR, JAIPUR,  
RAJASTHAN,  
INDIA  
PIN- 302020

TEL - 0141-2782681, MOB: 9636348191, 07976447983



## ARTICLES

1. **Development of Standard Manufacturing Process and Process Validation of Gandhaka Shodhana Strictly Adhering to Classical Literature** 01  
*Dr. Lekshmi C S & Prof. B.J. Patgiri*  
Department of Rasashastra and Bhaishajya Kalpana, Institute of Teaching and Research in Ayurveda, Jamnagar
2. **An observational case study of Morquio syndrome in a pediatric patient – a rare disease** 08  
*Amisha Bavarva \* & Dr. Apexa G. Vyas*  
Department of Kaumarbhritya, Institute of Teaching and Research in Ayurveda, Jamnagar
3. **Ayurveda A Glimmer of Hope for Metabolic Syndrome** 15  
*Dr. Lalita Dushad, & Dr. Vaibhav Mishra*  
Department of Shalya Tantra, PIA, Parul University, Vadodara, Gujarat-391760
4. **A Conceptual Study on Prostatic Disease and Its Ayurvedic Management** 19  
*Dr Smrithy P R & Dr Asha Karunakaran K*  
Department of Kayachikitsa, Government Ayurveda College Tripunithura, Kerala
5. **A Clinical Significance of Stanya in Present Scenario- An Ayurvedic Review** 23  
*Dr Shashank Nautiyal, & Prof. Balkrishan Panwar*  
Department of Kriya Sharir, Uttarakhand Ayurved University Gurukul Campus Haridwar.
6. **Effect of Snehapana on Nidranasha in a Case of Ekakushtha** 29  
*Dr. Gayatri Gandhe, MD (Kayachikitsa), & Dr. C. H. Babaria, (Maulika Sidhhant)*  
Department of Panchakarma, G. J. Patel Institute of Ayurvedic Studies & Research, New Vallabh Vidyanagar, Anand, Gujarat, 388120
7. **Role of Kakubhādi Avacūrṇana In The Ayurvedic Management of Madhumehajanya Vraṇa (Diabetic Foot Ulcer) – A Case Study** 34  
*Gayathri Sulochana, K. Srinivasakumar*  
Department of Shalya Tantra, S.V. Ayurveda Medical College, Tirupati, Andhra Pradesh

## Instructions to Authors

Journal of Research in Indian Medicine, a quarterly publication is devoted to publishing reviews and research articles in the area of Pharmacy Practice. Articles in the areas of clinical pharmacy, hospital pharmacy, community pharmacy, pharmaceutical care, pharmacovigilance, pharmacoconomics, clinical research, clinical pharmacokinetics and other related issues can be sent for publication in JRIM. All manuscripts should be submitted in triplicate along with 'Authorship Responsibility Undertaking', signed by all the authors of the paper to, **The Editor,**

**Journal of Research in Indian Medicine,**

Health Education Bureau, 55/20 Rajat Path, Mansarovar, Jaipur, Rajasthan- 302020.

Authors should retain a copy of all materials submitted to the journal; the editor cannot accept responsibility for loss or damage to submitted materials.

Manuscripts will be subjected to peer review process to determine their suitability for publication, provided they fulfilled the requirements of the journal. After the review, manuscript will be returned for revision along with reviewer's and /or editor's comments. One original copy of the final revised manuscript should be submitted for publication within one month after receiving the comments. It is also desirable to submit the final revised manuscript on a CD prepared in MS word version 6.0/95 or a higher version.

Submission of a manuscript to ijopp for publication implies that the same work has not been either published or under consideration for publication in another journal.

Author/s publishing results from in-vivo experiments involving animal or humans should state whether due permission for conduct of these experiments was obtained from the relevant authorities /Ethics committee/Institutional Review Board.

**Manuscript preparation:**

Manuscripts should be concisely typewritten in double space in A4 sized sheets, only on one side with a 2 cm margin on all sides. The manuscript shall be prepared in

Times New Roman font using a font size of 12. Title shall be in a font size 14. All section titles in the manuscript shall be in font size 12, bold face capitals. Subtitles in each section shall be in font size 12, bold face lower case followed by a colon. The pages shall be numbered consecutively with arabic numbers, beginning with title page, ending with the (last) page of figure legends. The length of an Review/ Science Education article should not exceed 25 manuscript pages to include figures, tables and references. No abbreviations or acronyms shall be used in the Title or Abstract acronyms, except for measurements. All the references, figures (Fig.) and tables (Table) in the text shall be numbered consecutively as they first appear. No sentence shall start with a numeral. Abbreviations like "&" and "etc" shall be avoided in the paper. There shall not be any decorative borders anywhere in the text including the title page. The entire MS Word document with graphs and illustrations pasted in it shall not exceed 2 MB. Manuscripts must conform to the "Uniform Requirements for Manuscripts

Submitted to Biomedical Journals" <http://www.icmje.org/>.

The Content of the manuscript shall be organized in the following sequence and shall start on separate pages: title page (including author's name, affiliations and address for correspondence), abstract (including at least 4 key words), text (consisting of introduction, materials and methods, results, discussion, conclusion and acknowledgements), references, figure legends, tables and figures. Titles should be short, specific, and clear. Beginning with the first page of text, each page should be consecutively numbered.

**For the Review Articles,**

The author(s) is absolutely free to design the paper. The Abstract section is needed for review articles too. The article should not exceed 15 manuscript pages including figures, tables and references. References, figures, and legends shall follow the general guidelines described below.

**For all other Articles, the following format shall be strictly followed.**

**Title Page.** The following information should appear: title of article (A running title or short title of not more than 50 characters), authors' name, and last name. The author to whom all correspondence be addressed should be denoted by an asterisk mark. Full mailing address with pin-code numbers, phone and fax numbers, and functional e-mail address should be provided of the author for correspondence. Names of the authors should appear as initials followed by surnames for men and one given-name followed by surname for women. Full names may be given in some instances to avoid confusion. Names should not be prefixed or suffixed by titles or degrees.

**Abstract:** The abstract is limited to 250 words, and should describe the essential aspects of the investigation. In the first sentence, the background for the work should be stated; in the second sentence the specific purpose or hypothesis shall be provided; followed sequentially by summary of methods, results and conclusion. No references should be cited.

7. Acharya Sushruta. Sushruta Samhita, translated by Prof. K.R. Srikantamurthy, Vol.1 Sutra stana;Chapter 22;Sloka 7; Chaukambha Orientalia, Varanasi, reprint edition, 2010; Pg 166.
8. Acharya Sushruta. Sushruta Samhita, translated by Prof. K.R. Srikantamurthy, Vol.2; Chikitsa stana;Chapter 1;Sloka 8; Chaukambha Orientalia, Varanasi, reprint edition, 2010; Pg 6.
9. A) Caraka, Caraka Samhita of Agnivesa text with English Translation and critical exposition based on Cakrapani Datta's Commentary Ayurveda Dipika by Dr. Ram Karan Sharma and Vaidya Bhagwan Dash (Vol IV) (Ca. Ci. 25/113) Chowkambha Sanskrit series Office, Varanasi, India, Reprint Edition 2011, Pg.No.465  
B) Vagbhata, Astanga Hridayam with commentaries Sarvangasundara of Arunadutta and Ayurveda Rasayana of Hemadri collated by Dr. Anna Moreswar Kunte and Krishna Ramachandra Shastri Navre edited by Pt. Bhashagacharya Harishastri Paradkar Vaidya, Akola Berar; A.H.U.25/59; Rashtriya Sanskrit Sansthan, New Delhi, Reprint 2012; Pg. No.868
10. Acharya Sushruta. Sushruta Samhita, translated by Prof. K.R. Srikantamurthy, Vol.1 Sutra stana;Chapter 37;Sloka 26; Chaukambha Orientalia, Varanasi, reprint edition, 2010; Pg 263.
11. Acharya Sushruta. Sushruta Samhita, translated by Prof. K.R. Srikantamurthy, Vol.1 Sutra stana;Chapter 23;Sloka 7; Chaukambha Orientalia, Varanasi, reprint edition, 2010; Pg 171.
12. Semwal *et al*, Wound healing and anti-microbial properties of ingredients of Kakubhadi Churna – A Review; World Journal of Pharmacy and Pharmaceutical Sciences,2020; 9(12): 505-513.



HEB

**Journal of Research in Indian Medicine**  
An Official Publication of Bureau for Health & Education Status Upliftment  
(Constitutionally Entitled As Health-Education, Bureau)

JRIM

**Development of Standard Manufacturing Process and Process Validation  
of Gandhaka Shodhana Strictly Adhering to Classical Literature**

Dr. Lekshmi C S, Ph.D Scholar, Department of Rasashastra and Bhaishajya Kalpana,  
Institute of Teaching and Research in Ayurveda, Jamnagar  
Prof. B.J. Patgiri, Professor and HOD, Department of Rasashastra and Bhaishajya Kalpana,  
Institute of Teaching and Research in Ayurveda, Jamnagar

**Corresponding Author**

**Name: Dr. Lekshmi.C.S**, PhD scholar, Department of Rasa Shastra & Bhaishajya Kalpana, ITRA, Jamnagar, Gujarat-361 008, India.

**Email Id: [serviceheb@gmail.com](mailto:serviceheb@gmail.com)**

**Abstract**

Background: *Gandhaka*(Sulphur) is an important and commonly used drug in majority of herbo-mineral/herbo-metallic formulations used in *Ayurveda*. *Shuddha Gandhaka* (processed Sulphur) is used therapeutically externally as well as internally as a single drug or in combination with other drugs for a wide array of ailments especially for disorders affecting the integumentary system.

Objective: To establish the standard manufacturing procedure for *Gandhaka Shodhana* strictly adhering to classical literature and to develop an analytical profile of *Shuddha Gandhaka* prepared using this method using physicochemical parameters.

Materials and Methods: *Samanya Shodhana* of *Gandhaka* is done using two pharmaceutical processing steps namely, *Swedana* and *Dhalana*. A pilot batch along with three batches of 500 g batch size were prepared to standardise the procedure. *Shuddha Gandhaka* thus prepared was subjected to physicochemical analysis.

Results and Discussion: *Shodhita Gandhaka* from all the batches showed uniform organoleptic characteristics with bright yellow, lustreless, granules with no odour characteristic of Sulphur but with a slight milky odour.

Conclusion: The present study standardises the process of *Shodhana* of *Gandhaka* according to the Classical reference mentioned in *Rasa Ratna Samucchaya* and thus highlights the importance of adhering to the classical pharmaceutical process.

**Keywords:** Gandhaka, Shodhana, Ayurveda, Rasa Ratna Samucchaya

**Access this Article Online**

Website: <a href="http://heb-nic.in/jrim-issues/">http://heb-nic.in/jrim-issues/</a>	Quick Response Code:
Received on 16/02/2023 Accepted on 21/02/2023 © HEB All rights reserved	



**Introduction**

*Gandhaka* or raw sulphur, the drug of utmost importance in the branch of *Rasashastra* of *Ayurveda*, has been in therapeutic use in the form of a wide array of formulations in various ailments. As the preliminary and most important step for making raw sulphur eligible for therapeutic use, *Rasashastra* has specific pharmaceutical procedures termed as *Shodhana*. Six various types of procedures are adopted by Rasa classics for the *Shodhana* of *Gandhaka*, namely, *Dhalana*, *Swedana*, *Bhavana*, *Patana*, *Avapa* and *Mishrita.Swedana and Dhalana* are the most commonly used methods for purification of *Gandhaka*. Cow's milk and *Bhringaraja Swarasa* are used as the media. Even though, the classical method of *Gandhaka Shodhana* according to Rasa Ratna Samuchchaya consists of both *Swedana* and *Dhalana*, the commonly practiced method is the modified method mentioned by D.A.Kulkarni in the which involves *Dhalana* in cow's milk for seven times. None of the dissertations or publications has adopted the classical method of *Shodhana* for *Gandhaka* involving *Swedana* and *Dhalana*. Since the classical method for *Gandhaka Shodhana* which includes *Swedana* and *Dhalana* is not practiced in pharmaceutical processing at present, an attempt was made in the present study to develop an SMP for the same.

**Materials and methods**

Standard manufacturing Process of *Gandhaka Shodhana* according to the Classical reference mentioned in Rasa Ratna Samuchchaya was developed by preparing a pilot batch followed by 3 batches of *Shodhita Gandhaka* with the same batch size. Standardisation was done at each step of the same with reference to the equipment used, optimal conditions required for the process including temperature, pH, etc along with quantification of the product during each step to understand the percentage loss or gain of the final product.

**Process validation of Samanya Shodhana of Gandhaka :**

The whole process of *Gandhaka Shodhana* was carried out in 2 steps for 3 batches of *Gandhaka*:

1. *Swedana*
2. *Dhalana* and *Galana*

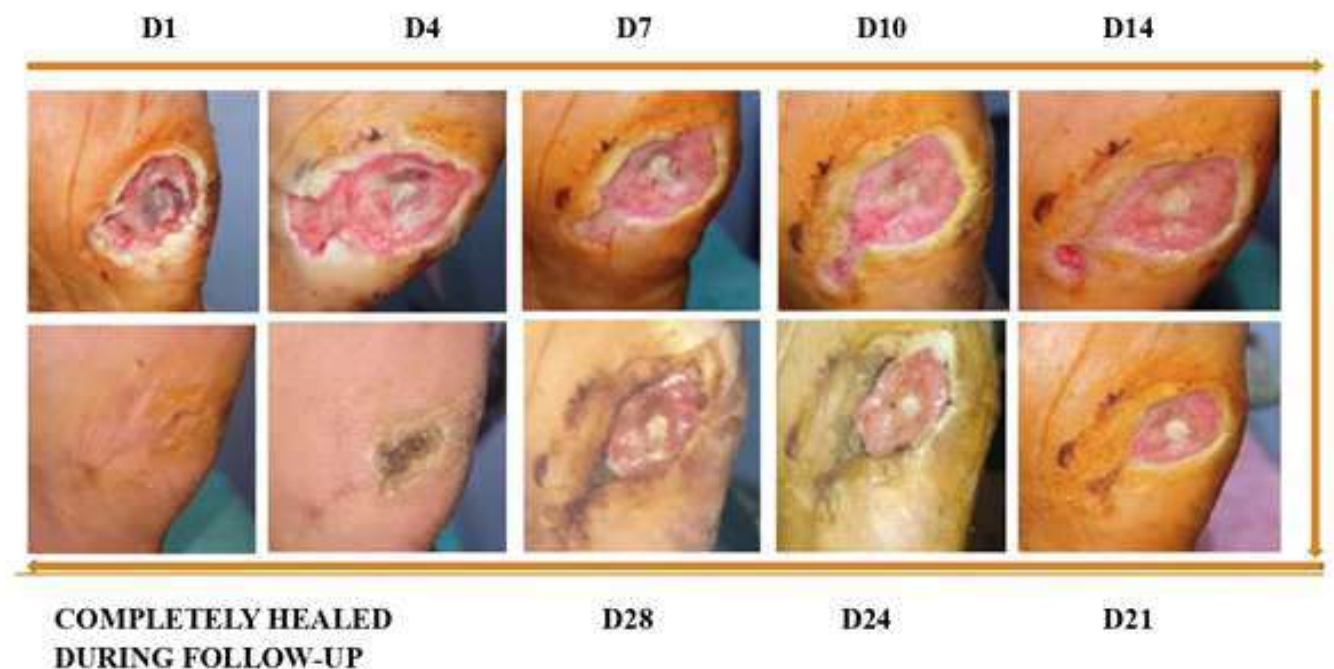
**Swedana :**

*Ashuddha Gandhaka*(Raw Sulphur) with all the desired characteristics was procured from Pharmacy of ITRA, Jamnagar and authenticated. Properly powdered fine powder of *Ashuddha Gandhaka* was accurately weighed and taken in a clean and dry crucible. 3 cotton cloth pieces of the desired dimensions was taken, washed with hot water and dried properly. These 3 cotton cloth pieces was then placed one above the other and powdered *Ashuddha Gandhaka* was kept as a heap in the middle of the cotton cloth. *Pottali* was then made using a thread and will be tied to the middle of an iron rod. The iron rod was then placed on the mouth of the mud pot with the *Pottali* inside the pot to ensure that the bottom of the *Pottali* doesn't touch the bottom of the pot. Then the iron rod was removed from the pot. Milk in the prescribed quantity was then taken in the mud pot and kept for boiling on the stove. Once the milk in the mud pot reached boiling temperature, the iron rod with the *Pottali* tied in the middle was placed over the mouth of the mud pot and *Pottali* was introduced into the boiling milk. The whole apparatus with the *Pottali* and milk was left for a period of 24 minutes over mild fire by maintaining the temperature between 90°C and 100°C. After 24 minutes, fire was turned off and the whole setup was left for self-cooling. Once the setup cooled down to room temperature, the *Pottali* was taken out of the milk, squeezed to remove the extra milk and then untied. *Gandhaka* after *Swedana* was collected from the *Pottali* and was accurately weighed. It was then washed in hot water. Then *Gandhaka* was subsequently transferred to a stainless-steel vessel containing boiling water and boiling was continued with continuous stirring using a ladle until all the milk content was removed from it. It was then dried on a clean and dry butter paper. On drying completely, the powder of the *Sweditha*

TABLE NO.3 SHOWING PARAMETERS BEFORE AND AFTER TREATMENT

PARAMETERS	<i>Vedanā</i> (Pain)		<i>Srāva</i> (Discharge)		Size of the ulcer		Wagner ulcer grade classification system	
	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.	B.T.	A.T.
B.T. – BEFORE TREATMENT								
A.T. – AFTER TREATMENT	2	0	2	0	2	1	2	1

IMAGE SHOWING PROGRESS OF TREATMENT



**REFERENCES**

1. S.Sacchidanand, Eswari L and Shilpa K(Editor); Leg Ulcers: Diagnosis and Management; Chapter 8, Diabetic Foot Ulcers, First Edition, New Delhi; Jaypee Brothers;2019;Pg 47.
2. International Diabetes Federation, IDF Diabetes Atlas, 7<sup>th</sup> Edition, Brussels, Belgium, International Diabetes Federation;2015.
3. Armstrong DG, Wrobel J, Robbins J M. Guest Editorial; are Diabetes related wounds and amputation worse than Cancer? Int. Wound J.2007; 4:286-7.
4. Singh N, Armstrong DG, Lipsky BA. Preventing Foot ulcers in patients with Diabetes. JAMA.2005;293(2):217-28.
5. Noor S, Zubair M, Ahmed J. Diabetic Foot Ulcer-a Review on Pathophysiology, classification and Microbial etiology. Diabetes Metab Syndr.2015;9:192-9.
6. Sumpio BE, Aruny J, Blume PA; the multidisciplinary approach to limb salvage. Acta Chir Belg.2004; 104:647-53.

TABLES AND FIGURES

TABLE NO.1 SHOWING TREATMENT GIVEN

Sl.No.	TYPE OF TREATMENT	MEDICINES	DOSAGE
1	Systemic Treatment ( <i>Samana Cikitsā</i> )	1. Tab.Yogaraja Guggulu	1gm BD
		2. Tab. Tarakeswar Ras	250mg BD
		3. Tab. Sudarshana churnam	1gm BD
		4. Yastimadhu churnam	5gm BD
2	Local Treatment ( <i>Sthānika Cikitsā</i> )	1. <i>Vraṇa Pariṣeka – Kaṣāya</i> prepared with <i>Kakubhādi cūrṇa</i> <sup>9</sup>	100 ml
		2. <i>Avacūrṇana - Kakubhādi cūrṇa</i>	10 gm

TABLE NO.2 SHOWING ASSESSMENT CRITERIA

Sl. No.	ASSESSMENT CRITERIA	GRADING
1.	<b>Vedanā (Pain)</b>	
	No pain	0
	Mild (localized feeling of pain during movement, no pain at rest)	1
	Moderate (localized pain at rest, sleep not disturbed)	2
	Severe (continuous localized feeling of pain that disturbs sleep)	3
2.	<b>Srāva (Discharge)</b>	
	No discharge	0
	Mild (Scanty, occasional discharge with little wet dressing)	1
	Moderate (Often discharge with blood on dressing)	2
	Severe (Profuse continuous discharge which needs frequent dressing)	3
3.	<b>Size of the ulcer</b>	
	Normal (Completely healed with acceptable scar)	0
	Wound size 2-3 cm (Reduced to 3/4th of the initial size)	1
	Wound size 4 – 6 cm (Reduced to 1/2th of the initial size)	2
	Wound size >6cm (Reduced to less than 1/4th of the initial size)	3
4.	<b>Wagner ulcer grade classification system</b>	
	No ulcer, but high-risk foot	0
	Superficial ulcer	1
	Deep ulcer, no bony involvement or abscess	2
	Abscess with bony involvement	3
	Localized gangrene	4
	Extensive gangrene involving the whole foot	5

*Gandhaka* was accurately weighed and stored in an airtight container.

**Dhalana and Galana:**

Milk was taken 2 times that of the quantity of *Sweditha Gandhaka* and was made warm in a stainless-steel vessel which will be used for collection of *Gandhaka* after melting. A piece of cotton cloth, washed in hot water and dried was smeared with little quantity of cow's ghee at the centre. A stainless-steel vessel was kept on the stove and heated. Cow's ghee was accurately weighed and taken in a quantity 1/8<sup>th</sup> part of the quantity of *Sweditha Gandhaka*. This cow's ghee was taken in the stainless-steel vessel and heated. The weighed *Sweditha Gandhaka* was then melted in this heated cow's ghee with continuous stirring using ladle. Once the *Gandhaka* completely melted and attained a yellowish orange colour, the melted *Gandhaka* was poured into the stainless-steel vessel with warm milk through the cotton cloth smeared with cow's ghee. The stainless-steel vessel with milk was continuously shaken in circular motion throughout the process of pouring of the melted *Gandhaka*. Lumps of *Gandhaka* formed if any was broken down into small pieces using the ladle. The milk was then decanted into another stainless-steel vessel and the solidified *Gandhaka* was taken out. After washing with hot water for 2 to 3 times, it was then transferred to a stainless-steel vessel containing boiling water and boiling was continued with continuous stirring using a ladle until maximum amount of cow's ghee was removed from it. Then the water was decanted and the washed *Gandhaka* was dried properly on a butter paper.

*Swedana*, *Dhalana* and *Galana* of *Gandhaka* was done for 3 times in total for each batch to obtain *Shodhita Gandhaka*. The pictorial representation of the whole process has been illustrated in Figure 1.

Figure 1: Procedure of *Gandhaka Shodhana*;



**Results and Observations:**

The observations made during the procedures have been tabulated in Table 1.



Table 1: Results and observations of *Shodhana* of *Gandhaka*;

Procedure	Parameters	Results			
		Pilot Batch	Batch 1	Batch 2	Batch 3
First <i>Swedana</i>	Wt. of powdered <i>Gandhaka</i> before <i>Swedana</i> (g)	100 g	500 g	500 g	500 g
	Quantity of cow's milk taken for <i>Swedana</i> (l.)	1 l.	2 l.	2 l.	2 l.
	Temp. of cow's milk at the beginning of <i>Swedana</i> (°C)	90°C	90 °C	91 °C	90 °C
	pH of milk before <i>Swedana</i>	6	6	6	6
	Temp. of cow's milk at the end of <i>Swedana</i> (°C)	98 °C	98 °C	99 °C	98 °C
	pH of cow's milk after <i>Swedana</i>	6	6	6	6
	Time taken for <i>Swedana</i> (hrs.mins.)	24 mins.	24 mins.	24 mins.	24 mins.
	Time taken for self -cooling after <i>Swedana</i> (hrs.mins.)	1 hr	2 hrs. 10 mins.	2 hrs. 30 mins.	2 hrs. 8 mins.
	Wt. of <i>Gandhaka</i> obtained after removing the <i>Pottali</i> from milk(g)	130 g	530 g	528 g	533 g
	Quantity of cow's milk after <i>Swedana</i> (l.)	80 ml	1750 ml	1700 ml	1800 ml
	No: of washings with hot water	5	5	5	5
	Time taken for complete removal of cow's milk using boiling water(hrs.mins.)	12 min.	10 mins.	10 mins.	12 mins.
	Wt. of <i>Gandhaka</i> obtained after washing(g)	135 g	520 g	523 g	530 g
	Wt. of <i>Gandhaka</i> obtained after drying(g)	100 g	505 g	508 g	502 g
Time taken for drying(hrs.mins.)	1 ½ hrs	2 hrs.	2 hrs.	2 hrs.	
First <i>Dhalana</i>	Wt. of <i>Gandhaka</i> taken for <i>Dhalana</i> (g)	100 g	505 g	508 g	502 g
	Quantity of cow's ghee taken for <i>Dhalana</i> (g)	12.5 g	62.5 g	63.5 g	62.5 g
	Time at which <i>Gandhaka</i> started to melt(hrs.mins.)	8 mins.	2 mins. 4 sec.	3 mins.	2 mins. 30 sec.
	Time taken for complete melting of <i>Gandhaka</i> (hrs.mins.)	12 mins.	10 mins.	9 mins. 40 sec.	11 mins. 40 sec.
	Quantity of cow's milk taken for <i>Dhalana</i> (l.)	200 ml	1 l.	1 l.	1 l.
	Temp. of cow's milk at the beginning of <i>Dhalana</i> (°C)	50 °C	50 °C	52 °C	49 °C
	Quantity of cow's milk at the end of <i>Dhalana</i> (l.)	150 ml	750 ml	730 ml	800 ml
	Temp. of cow's milk at the end of <i>Dhalana</i> (°C)	48 °C	50 °C	51 °C	50 °C
	No: of washings with hot water	5	5	5	5
	Time taken for complete removal of cow's ghee using boiling water(hrs.mins.)	20 mins.	20 mins.	25 mins.	22 mins.
	Wt. of <i>Gandhaka</i> obtained after washing(g)	105 g	516 g	520 g	518 g
	Wt. of <i>Gandhaka</i> obtained after drying(g)	95 g	502 g	498 g	499 g
	Time taken for drying(hrs.mins.)	3 hrs.	4 hrs.	4 hrs.	4 hrs.

## ASSESSMENT CRITERIA

The Wound healing was observed based on the assessment criteria given in Table No.2.

## OBSERVATIONS

The characteristics of *Duṣṭa Vraṇa* like *Ativivṛta* (broad base), *Bhairava* (ugly looking), *Pūtipūyamāmsa* (pus discharge), *Durgandha* (foul smell), *Vedana* (pain), *Dīrghakālānubandhi* (Chronic) were noted in the wound. It was noted that the deep seated slough which was hard to remove, started to dissolve from the base and wound became clean and healthy. The healing started with the formation of healthy granulation tissue. The wound started to contract by filling of tissue from the base of wound day by day. By the end of 4<sup>th</sup> week, wound was completely healed with minimum scar tissue formation. The parameters before and after treatment are as given in Table No.3.

## RESULT

1<sup>st</sup> day wound which was having pale white granulation with mucopurulent discharge turned into red granulation and serous discharge on 7<sup>th</sup> day after the application of *Avacūrṇana* with *Kakubhādi Cūrṇa*, further wound was improved with healthy granulation tissue and mild serous discharge from 14<sup>th</sup> and 21<sup>st</sup> day to start with epithelization to get completely healed during follow- up with the continuation of same treatment. Patient was monitored for one year after complete healing of DFU and no recurrence of DFU was reported.

## DISCUSSION

According to *Suśruta*, Diabetic ulcer can be correlated with *Madhumehajanya Vraṇa*. Prameha is said to be a *Mahā Gada*, due to involvement of tridoshas and most of *drava dhātus* in the body, thus making the treatment *Kaṣṭha Sādyā*.<sup>11</sup> Occurrence of *Piḍaka* in *Madhumehi* makes the prognosis worst and are said to have affinity for *Adhokāya* due to local *Rasavāhini dourbalya*, involvement of *Meda*, *Vasa* and *Ojas* along with tridoshas. So *Vraṇa* is the resultant of *Madhumeha Piḍaka* considered as endogenous. Thus formed *Vraṇa* can be categorized under *Duṣṭa Vraṇa*, which exhibits features of *Klinnatā*, *Kāṭinya*, *Vaivaranya*, *Pūti-Puya Māmsa*, *Amanogna Gandha- Darsana* and *Dīrgha Kālānubandhi*. General line of treatment for *Duṣṭa Vraṇa* is *Kāya Śodhana* and *Sthānika Cikitsa* including *Śodhana* and *Ropana*, which is true with *Vraṇa* in *Madhumehi*. *Vraṇa Śodhana* can be done by *Sapta Kalpas*. *Kakubhādi Cūrṇa* is a reference from *Brhatrayi* advised for *Avacūrṇana* purpose having *Śodhana* property. All oral medicines used in this case-study are classical Ayurvedic formulation and have *Srotoviśodhana*, *Śothahara*, *Kledahara*, *Raktaprasādana* and *Pramehaghna* properties.

The ingredients of *Kakubhādi Cūrṇa* are *Kakubha*, *Udumbara*, *Aśvattha*, *Lodhra*, *Jambu* and *Kaṭphala* which are *Kaṣāya-Tikta Rasa Pradhāna* and thereby *Rūkṣa* and *Śoṣaṇa* in quality. Overall effect of *Kakubhādi Cūrṇa* can be attributed to the synergistic effect of the ingredients resulting in anti-bacterial and anti-inflammatory action. Because of the presence of tannins and several other phyto-constituents it promotes the production of collagen. When used externally for *Avacūrṇana* it also shows *Lekhana* property, which removes the dead skin, and in turns encourages the formation of epithelium and also stops the production of pus and debris, hence helps in the quick and complete healing of the wound.<sup>12</sup>

## CONCLUSION

The case-study established that such a case of Wagner's Grade-II Diabetic Foot Ulcer was successfully treated by Ayurvedic line of treatment especially using *Avacūrṇana kriya* explained by *Suśruta* in *Ṣaṣṭi Upakramas*. It is an easy procedure with minimal expenditure, at the same time does not require hospital stay.



- **PPBS** - 288 mg/dl
- **HbA1c** - 11.06%

**SYSTEMIC EXAMINATION**

- **CVS** – S1 S2, normal
- **CNS** – normal
- **RS** – normal

**LOCAL EXAMINATION**

**Diabetic Foot Examination**

- **Inspection** - Dry & stiff skin
- **Palpation** - Increased Local Temperature, insensate, Peripheral Pulses present
- Restricted ROM of joints

**ULCER EXAMINATION**

- **Site** – Plantar aspect of Left Foot; Under fifth metatarsal head
- **Size & Shape** – 4.5x3x2 cm<sup>3</sup>; Irregular
- **Number** – One
- **Edge** – Punched out, with calloused border
- **Margin** – Regular
- **Floor** – Slough
- **Discharge** – Purulent and foul smelling
- **Surrounding skin** – Thickened(callus)
- **Tenderness** - ++
- **Touch on bleed** – Absent
- **According to Wagner's Ulcer Classification System** – Grade II

**METHODOLOGY / TREATMENT GIVEN:**

Along with oral hypoglycemic drugs, treatment was given to the patient on OPD basis for *Vraṇa Śodhana - Ropana* as given in Table No.1.

**Avacūrṇana(Dusting) of Kakubhādi Cūrṇa:**

- *Vraṇa Prakṣāḷana* with *Kvātha* prepared from *Kakubhādi Cūrṇa*.
- After cleaning the part and drying it thoroughly, *Avacūrṇana(Dusting)* of *Kakubhādi Cūrṇa* over the entire surface of floor of ulcer.
- A dry sterile pad is kept over affected area and bandaging is done.

The treatment was given for a period of 1 month. Patient was treated on OPD basis and follow-up was done for 3 months at the interval of 1 week till complete wound healing attained.

<b>Second Swedana</b>	Wt. of powdered <i>Gandhaka</i> before <i>Swedana</i> (g)	95 g	502 g	498 g	499 g
	Quantity of cow's milk taken for <i>Swedana</i> (l.)	1 l.	2 l.	2 l.	2 l.
	Temp. of cow's milk at the beginning of <i>Swedana</i> (°C)	91 °C	91 °C	91 °C	92 °C
	pH of milk before <i>Swedana</i>	6	6	6	6
	Temp. of cow's milk at the end of <i>Swedana</i> (°C)	98 °C	98 °C	97 °C	98 °C
	pH of cow's milk after <i>Swedana</i>	6	6	6	6
	Time taken for <i>Swedana</i> (hrs.mins.)	24 mins.	24 mins.	24 mins.	24 mins.
	Time taken for self -cooling after <i>Swedana</i> (hrs.mins.)	1 hr 10 mins.	3 hrs.	2 hrs. 45 mins.	3 hrs. 10 mins.
	Wt. of <i>Gandhaka</i> obtained after removing the <i>Pottali</i> from milk(g)	120 g	520 g	512 g	517 g
	Quantity of cow's milk after <i>Swedana</i> (l.)	75 ml	780 ml	770 ml	785 ml
	No: of washings with hot water	5	5	5	5
	Time taken for complete removal of cow's milk using boiling water(hrs.mins.)	10 mins.	30 mins.	28 mins.	20 mins.
	Wt. of <i>Gandhaka</i> obtained after washing(g)	118 g	522 g	515 g	520 g
	Wt. of <i>Gandhaka</i> obtained after drying(g)	93 g	492 g	498 g	500 g
	Time taken for drying(hrs.mins.)	2 hrs. 15 mins.	4 hrs.	4 hrs.	4 hrs.
<b>Second Dhalana</b>	Wt. of <i>Gandhaka</i> taken for <i>Dhalana</i> (g)	93 g	492 g	498 g	500 g
	Quantity of cow's ghee taken for <i>Dhalana</i> (g)	11.6 g	61.5 g	62.25 g	62.25 g
	Time at which <i>Gandhaka</i> started to melt(hrs.mins.)	9 mins.	2 mins.	2 min. 45 sec.	3 mins.
	Time taken for complete melting of <i>Gandhaka</i> (hrs.mins.)	11 mins.	6 mins.	5 mins. 30 sec.	6 mins. 20 sec.
	Quantity of cow's milk taken for <i>Dhalana</i> (l.)	186 ml	1 l.	1 l.	1 l.
	Temp. of cow's milk at the beginning of <i>Dhalana</i> (°C)	52 °C	50 °C	49 °C	48 °C
	Quantity of cow's milk at the end of <i>Dhalana</i> (l.)	160 ml	780 ml	750 ml	795 ml
	Temp. of cow's milk at the end of <i>Dhalana</i> (°C)	50 °C	51 °C	50 °C	49 °C
	No: of washings with hot water	5	5	5	5
	Time taken for complete removal of cow's ghee using boiling water(hrs.mins.)	30 mins.	30 mins.	25 mins.	28 mins.
	Wt. of <i>Gandhaka</i> obtained after washing(g)	118 g	518 g	519 g	521 g
Wt. of <i>Gandhaka</i> obtained after drying(g)	92 g	493 g	497 g	500 g	
Time taken for drying(hrs.mins.)	4 hrs. 20 mins.	3 hrs. 45 mins.	4 hrs.	4 hrs.	

<b>Third Swedana</b>	Wt. of powdered <i>Gandhaka</i> before <i>Swedana</i> (g)	92 g	493 g	497 g	500 g
	Quantity of cow's milk taken for <i>Swedana</i> (l.)	1 l.	2 l.	2 l.	2 l.
	Temp. of cow's milk at the beginning of <i>Swedana</i> (°C)	90 °C	91 °C	92 °C	92 °C
	pH of milk before <i>Swedana</i>	6	6	6	6
	Temp. of cow's milk at the end of <i>Swedana</i> (°C)	98 °C	97 °C	97 °C	98 °C
	pH of cow's milk after <i>Swedana</i>	6	6	6	6
	Time taken for <i>Swedana</i> (hrs.mins.)	24 mins.	24 mins.	24 mins.	24 mins.
	Time taken for self -cooling after <i>Swedana</i> (hrs.mins.)	1 hr. 40 mins.	2 hrs. 55 mins.	3 hrs. 5 mins.	3 hrs.
	Wt. of <i>Gandhaka</i> obtained after removing the <i>Pottali</i> from milk(g)	126 g	510 g	515 g	520 g
	Quantity of cow's milk after <i>Swedana</i> (l.)	950 ml	785 ml	775 ml	780 ml
	No: of washings with hot water	5	5	5	5
	Time taken for complete removal of cow's milk using boiling water(hrs.mins.)	20 mins.	35 mins.	25 mins.	30 mins.
	Wt. of <i>Gandhaka</i> obtained after washing(g)	122 g	595 g	520 g	500 g
	Wt. of <i>Gandhaka</i> obtained after drying(g)	94 g	474 g	483 g	488 g
Time taken for drying(hrs.mins.)	4 hrs. 12 mins.	4 hrs. 10 mins.	4 hrs.	4 hrs. 15 mins.	
<b>Third Dhalana</b>	Wt. of <i>Gandhaka</i> taken for <i>Dhalana</i> (g)	94 g	474 g	483 g	488 g
	Quantity of cow's ghee taken for <i>Dhalana</i> (g)	11.75 g	59.2 g	60.37 g	61 g
	Time at which <i>Gandhaka</i> started to melt(hrs.mins.)	6 mins.	53 sec.	1 min.	58 sec.
	Time taken for complete melting of <i>Gandhaka</i> (hrs.mins.)	9 mins. 35 sec.	2 mins. 30 sec.	3 mins.	2 mins 45 sec.
	Quantity of cow's milk taken for <i>Dhalana</i> (l.)	188 ml	1 l.	1 l.	1 l.
	Temp. of cow's milk at the beginning of <i>Dhalana</i> (°C)	48 °C	51 °C	50 °C	51 °C
	Quantity of cow's milk at the end of <i>Dhalana</i> (l.)	170 ml	790 ml	780 ml	785 ml
	Temp. of cow's milk at the end of <i>Dhalana</i> (°C)	46 °C	50 °C	48 °C	49 °C
	No: of washings with hot water	5	5	5	5
	Time taken for complete removal of cow's ghee using boiling water(hrs.mins.)	35 mins.	38 mins.	40 mins.	35 mins.
	Wt. of <i>Gandhaka</i> obtained after washing(g)	128 g	495 g	500 g	498 g
	Wt. of <i>Gandhaka</i> obtained after drying(g)	92 g	470 g	481 g	483 g
	Time taken for drying(hrs.mins.)	4 hrs.	4 hrs. 15 mins.	4 hrs. 10 mins.	4 hrs.

### INTRODUCTION

Diabetic foot disease poses a growing global public health challenge and a major financial burden on healthcare systems worldwide. The prevalence of Diabetes is exploding worldwide and is expected to involve more than 500 million people in the next 10-15 years.<sup>1</sup> India is home to 69.1 million patients with diabetes mellitus with an overall prevalence of 9.3%.<sup>2</sup> The annual incidence of Diabetic Foot ulcer (DFU) in population-based studies is 1.0-4.1% and prevalence of 4.5-10%, with an overall lifetime incidence of up to 25%.<sup>3,4</sup> The etiology of Diabetic Foot Ulceration is a well understood, but multifactorial and complex process. Major risk factors associated with DFU formation are Diabetic Peripheral Neuropathy and PAD, which acts either in isolation or concurrently. Other important risk factors include soft tissue infection, biomechanical abnormalities, peripheral edema, plantar callus formation, neuropathy, poor glucose control, age and a prolonged Diabetic Course.<sup>5</sup> The integration of knowledge and experience through a multidisciplinary team approach promotes more effective treatment, thereby improving outcomes and limiting the risks of lower extremity amputations.<sup>6</sup> *Ācārya Suśruta* has described *Vraṇa* and explained that all the *Vraṇa* if not properly treated turn into *Duṣṭa Vraṇa*. *Pramehajanya Vraṇas* mostly fall into the category of *Duṣṭa Vraṇa*.<sup>7</sup> The principle of management of *Vraṇa* is described in Ayurveda in a classical way. After the observation of different stages, *Doṣa* and situation of *Vraṇa*, the principle of the treatment is decided. *Suśruta* described a variety of *Vraṇa* - management therapies, which are broadly divided into two – *Vraṇa śodhana* and *Vraṇa rōpaṇa*. *Kashaya*, *Varti*, *Kalka*, *Sarpi*, *Taila*, *Rasakriya* and *Avacūrṇana* are seven measures coming under these.<sup>8</sup> The present case study is of a diabetic ulcer managed through Ayurvedic principles of *Vraṇa Cikitsā*.

### CHIEF COMPLAINTS

A 60-year-old male patient came to the Shalya OPD of S.V. Ayurvedic Hospital, Tirupati presenting with the complaints of painless, non-healing ulcer on Left foot with foul smell and discharge since 6 months.

### HISTORY OF PRESENT ILLNESS

The patient suffered from corn on the same site of the present ulcer 6 months back and had done excision for the same. The resultant wound failed to heal and got infected. As conventional wound care failed to heal the ulcer, the patient was referred for further management.

### HISTORY OF PAST ILLNESS

The patient was a k/c/o DM for past 16 years and was on Oral Hypoglycemic agents.

### PERSONAL HISTORY

- **Pulse** - 82/min
- **B.P.** - 140/90 mm of Hg
- **Weight** - 75kg
- **Height** - 167cm

### LAB INVESTIGATIONS

- **Hb** - 11.8 gm/dl
- **ESR** - 62 mm/hour
- **FBS** - 220 mg/dl





HEB

Journal of Research in Indian Medicine  
An Official Publication of Bureau for Health & Education Status Upliftment  
(Constitutionally Entitled As Health-Education, Bureau)

JRIM

## ROLE OF *KAKUBHĀDI AVACŪRṆANA* IN THE AYURVEDIC MANAGEMENT OF *MADHUMEHAJANYA VRAṆA* (DIABETIC FOOT ULCER) – A CASE STUDY

Gayathri Sulochana<sup>1</sup>, K. Srinivasakumar<sup>2</sup>

<sup>1</sup>P.G. Scholar, Department of Shalya Tantra, S.V. Ayurveda Medical College, Tirupati, Andhra Pradesh

<sup>2</sup>Professor & HOD, Department of Shalya Tantra, S.V. Ayurveda Medical College, Tirupati, Andhra Pradesh

Corresponding Author – Gayathri Sulochana, P.G. Scholar, Department of Shalya Tantra, S.V. Ayurveda Medical College, Tirupati, Andhra Pradesh

Email Id: [serviceheb@gmail.com](mailto:serviceheb@gmail.com)

### ABSTRACT

“The destruction / break / rupture / discontinuity of body tissue / part of body, is called '*Vraṇa*.’” The healing of wound is a natural mechanism of the body which happens within one week if no Doshic invasion takes place. Wounds in lower extremity are generally caused by venous insufficiency and Diabetic neuropathy which may hamper the quality of life of the patient by ending up in lower limb amputation. *Madhumehajanya Vraṇa* (Diabetic Foot Ulcer) mostly fall in the category of *Duṣṭa Vraṇa* and is considered *Kricchra Sādhya* or *Yāpya*. Management of such ulcer falls into three parts - removal of callus by debridement, eradication of infection by use of antibiotics and reduction of weight bearing forces, often requiring bed rest. Here is being reported a case of non-healing wound after Clavus removal surgery. A 60-year-old male patient with a history of uncontrolled Diabetes mellitus more than 15 years consulted to OPD of Department of Shalya Tantra, S.V. Ayurvedic Hospital, Tirupati with non-healing, irregular shaped wound on the Left foot plantar aspect developed since 6 months' post-surgery. The treatment resulted in complete wound healing within 4 weeks with Ayurvedic internal and external medicines at OPD level. This case concluded that the regular local application of *Kakubhādi Avacūrṇana* is helpful in Post-Surgical Diabetic Non-Healing wound.

**Keywords:** *Madhumehajanya Vraṇa*, Diabetic Foot Ulcer, *Duṣṭa Vraṇa*, *Kakubhādi Avacūrṇana*.

### Access this Article Online

Website: <http://heb-nic.in/jrim-issues/>

Quick Response Code:

Received on 20/05/2023  
Accepted on 23/05/2023 © HEB All rights reserved



Figure 2: Samples of *Gandhaka* during different stages of *Shodhana*;



### Discussion

In the present study, it was observed that the milk which was used for both *Swedana* and *Dhalana* became concentrated and more viscous after the procedure which might be due to the temperature at which the media is heated resulting in evaporation of water in it. An average of 4.4 % of loss was found after *Shodhana* of *Gandhaka* in all the procedures. This might have occurred due to the loss during manual handling of the material especially during washing with hot water and during the procedure of *Dhalana* due to sticking of plastic sulphur to the vessel. In all the previous research works, the amount of cow's milk was taken 2 times that of *Gandhaka* while *Goghrita* was taken in different quantities i.e; 1/4<sup>th</sup>, 1/8<sup>th</sup> or 1/16<sup>th</sup> part of *Gandhaka*. The physical nature of Sulphur changed from lustrous powder to a lustre free granular form. The continuous melting and quenching processes might have resulted in the change of raw sulphur which is crystalline in nature to an amorphous form. The addition of Ghee or other lipid components to sulphur during the processing might have resulted in the increase in weight. This can be substantiated by the loss of weight soon after washing and drying of the material. The changes in the physical appearance is illustrated in Figure 2. *Shodhita Gandhaka* from all the batches showed uniform organoleptic characteristics with bright yellow, lustreless, granules with no odour characteristic of Sulphur but with a slight milky odour.

### Conclusion

This paper is only an attempt to standardise the classical method of *Shodhana* mentioned in classics. Further studies must be conducted on the final products obtained using sophisticated analytical tools in order to decipher the most probable changes happening during the pharmaceutical processing.

### References

- Panigrahi, D. (2019). SULPHUR (GANDHAKA) PURIFICATION METHODS W.S.R. TO RASA CLASSICS. *Journal of Biomedical and Pharmaceutical Research*, 8(6), 92-98.
- Duttatreya Ananda Kulkarni, Commentator. *Rasa Ratna Samuchchaya* of Vagbhatacharya, Volume one, Ch. 3, Ver. 20-22, Reprint edition, New Delhi: Meherchand laxmandas publications;2010. p. 45.
- Vagbhatacharya. *Rasa Ratna Samuchchaya* of Vagbhatacharya, Volume one, Ch. 3, Ver. 20-22, Reprint edition, New Delhi: Meherchand laxmandas publications;2010. p. 45.
- Dr. Malavi Shayan, & Dr. Praveen Kumar H. (2020). Recapitulation of Gandhaka Shodhana. *Journal of Ayurveda and Integrated Medical Sciences*, 5(04), 177-181.



HEB

**Journal of Research in Indian Medicine**  
**An Official Publication of Bureau for Health & Education Status Upliftment**  
 (Constitutionally Entitled As Health-Education, Bureau)

JRIM

**An observational case study of Morquio syndrome in a pediatric patient  
 – a rare disease**

*Amisha Bavarva \* & Dr. Apexa G. Vyas*

Department of Kaumarbhritya, Institute of Teaching and Research in Ayurveda, Jamnagar

1. Dr. Amisha A. Bavarva- 3<sup>rd</sup> year MD Scholar, Department of Kaumarbhritya - Institute of Teaching & Research in Ayurveda, Jamnagar.
2. Dr. Apexa G. Vyas – Reader, Department of Kaumarbhritya - Institute of Teaching & Research in Ayurveda, Jamnagar.

**Email Id: [serviceheb@gmail.com](mailto:serviceheb@gmail.com)**

**Abstract:**

Mucopolysaccharidosis type IV (MPS IV), also known as Morquio syndrome, is a progressive condition that mainly affects the skeleton. The first signs and symptoms of MPS IV usually become apparent during early childhood. Affected individuals develop various skeletal abnormalities including short stature, [knock knees](#), abnormalities of the ribs, chest, spine, hips and wrists. People with MPS IV often have restricted movement in certain joints. Here, we present a case of Morquio syndrome. A 14-year-old girl presented with multiple skeletal abnormalities. The physical appearance was characterized by short stature, protuberant chest, scoliosis, deformed knees and bowing of both lower extremities.

**KEY WORDS:** Kubjata, Morquio syndrome, MPS IV A, Mucopolysaccharidosis.

**Access this Article Online**

Website: <http://heb-nic.in/jrim-issues/>

Quick Response Code:

Received on 03/04/2023  
 Accepted on 14/04/2023 © HEB All rights reserved



Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C. Su. 21/51, Page 119

- (7) Sushruta Samhita of Sushruta with Naibandhasangraha Commentary of Shri Dalhanacharya, edited by Vaidya Yadavai Trikamji & the rest, Chaukhambha Orientalia, Varanasi, 8<sup>th</sup> edition, S. Sha. 4/34, Page 358
- (8) Sushruta Samhita of Sushruta with Naibandhasangraha Commentary of Shri Dalhanacharya, edited by Vaidya Yadavai Trikamji & the rest, Chaukhambha Orientalia, Varanasi, 8<sup>th</sup> edition, S. Sha.4/33, Page 358
- (9) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C.Su.9/4, Page 62
- (10) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C.Vi.8/89, Page 275
- (11) Sushruta Samhita of Sushruta with Naibandhasangraha Commentary of Shri Dalhanacharya, edited by Vaidya Yadavai Trikamji & the rest, Chaukhambha Orientalia, Varanasi, 8<sup>th</sup> edition, S. Chi. 31/3, Page 507
- (12) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C.Su.22/15, Page 120
- (13) Sushruta Samhita of Sushruta with Naibandhasangraha Commentary of Shri Dalhanacharya, edited by Vaidya Yadavai Trikamji & the rest, Chaukhambha Orientalia, Varanasi, 8<sup>th</sup> edition, S.Chi.31/56, Page 512
- (14) Mahesh TS, Shreevidya M. A review on balya action mentioned in Ayurveda. J Ayurveda Integr Med. 2014 Apr;5(2):80-4. doi: 10.4103/0975-9476.133796. PMID: 24948857; PMCID: PMC4061594
- (15) Hirotsu C, Rydlewski M, Araújo MS, Tufik S, Andersen ML. Sleep loss and cytokines levels in an experimental model of psoriasis. PLoS One. 2012;7(11):e51183. doi: 10.1371/journal.pone.0051183. Epub 2012 Nov 30. PMID: 23226485; PMCID: PMC3511390
- (16) Sleep Problems Common in Psoriasis, By David Ozeri, M.D, Dermatology Times, September 2019 (Vol. 40, No. 9)
- (17) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C. Su. 21/52-54, Page 119
- (18) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C.Su.13/9-11, Page 81-82
- (19) Mahamahopadhyay ShriGovinddas Virachita Bhaishajya Ratnavali, Bhashatikasahit by Pandit Sarayuprasad Tripathi edited by Kaviraj Pan. Gopalprasad Sharma Kaushik, Tejkumar Press Printing, Third edition *Kushtha Chikitsa Prakarana* 361-364, Page 672
- (20) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C. Su. 13/41-43, Page 84



Ayurveda has described various measures to combat *Nidranasha* as<sup>17</sup>:

1. Allied Panchakarma therapies eg *Abhyanga, Utsadana, Akshitarpana, Shirolepa, Mukhalepa, Samvahana* (gentle massage)
2. Consumption of foods like curd rice, milk, *Sneha, Madya, Mamsarasa, Ikshu* etc
3. Pleasing fragrances & music
4. Comfortable bedding and resourceful house
5. *Kala* (young age and winter season)

In general practice, various drugs like *Brahmi, Ashwagandha, Tagara, Sarpagandha, Jatamansi & Parasika Yavani* etc are successfully used for promoting sleep. But in the *Nidranasha* associated with *Dhatukshaya*, a deeper approach for *Sampraptibhanga* and establishing *Dhatusamy* is needed.

Ayurveda has described various types of *Sneha* like *Ghrita, Taila, Vasa, Majja, Dugdha, Navneet, Dadhi, Mamsa* etc<sup>18</sup>. *Chikitsa* of almost every disease contains *Sidhha Sneha* to be used for *Shodhana, Shamana & Brumhana* purpose to achieve *Sampraptibhanga* and create *Dhatusamy*.

Considering overall disease condition of the patient, *Panchatikta Ghrita* was selected in the above case. *Panchatikta Ghrita*<sup>19</sup> contains *Tikta- Kashaya- Madhura Rasatmaka* drugs like *Patol, Nimba, Vasa, Guduchi & Kantakari* which act on *Rakta, Pitta & Kapha*. *Ghrita* is especially *Pitta & Vatahara* in properties. It is indicated for enhancing *Bala* (immunity) and for *Pushti* (tissue nourishment)<sup>20</sup>. After securing *Dhatupushti & Vata-shamana* of sufficient grade, patient started getting sound sleep.

**Conclusion**

Etiological factors that lead to *Dhatukshaya* cause reduction in the *Snigdhatata & Guruta* of certain grade that leads to *Nidranasha*. Use of *Sidhha Sneha* of appropriate origin and in appropriate condition of the patient can augment these elements to reinstate sleep.

**References**

- (1) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C. Su. 21/36, Page 118
- (2) Perry GS, Patil SP, Presley-Cantrell LR. Raising awareness of sleep as a healthy behavior. *Prev Chronic Dis*. 2013 Aug 8;10: E133. doi: 10.5888/pcd10.130081. PMID: 23928458; PMCID: PMC3741412
- (3) Worley SL. The Extraordinary Importance of Sleep: The Detrimental Effects of Inadequate Sleep on Health and Public Safety Drive an Explosion of Sleep Research. *P T*. 2018 Dec;43(12):758-763. PMID: 30559589; PMCID: PMC6281147
- (4) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C. Su. 21/55-57, Page 119
- (5) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of Chakradatta, edited by Vaidya Yadavji Trikamji Acharya, Chaukhambha Prakashana, Reprint edition, C. Su. 21/35, Page 118
- (6) Charaka Samhita by Agnivesha revised by Charaka & Dridhabala, with Ayurveda-Dipika commentary of

**Introduction:**

Mucopolysaccharidosis (MPS) is a skeletal dysplasia that is characterized by a group of inherited disorders caused by a deficiency of mucopolysaccharide degrading enzymes or also called glycosaminoglycans (GAGs). This disease is characterized by excessive lysosomal storage of partially degraded GAG in connective tissue and elevation of GAG fragments in urine, blood and cerebrospinal fluid. Eleven different types of enzyme deficiencies have been identified that have been associated with seven different types of MPS (MPS I to IV, VI, VII and IX) whose clinical manifestations and severity vary from one MPS to another, but also within the same type of MPS.

Mucopolysaccharidosis type IV (MPS IV), also known as Morquio syndrome, is a rare inherited autosomal recessive lysosomal storage disease characterized by the accumulation of mucopolysaccharides (Glycosaminoglycans) in various body tissues.

The exact worldwide incidence of Morquio syndrome is unknown but is estimated to be between 1 in 75000 population in Northern Ireland, 1 in 200,000 population in British Columbia and 1 in 640,000 live births in Western Australia. In India, MPS accounts for 22% of all the lysosomal storage disease (LSD). MPS IV is the most common, comprising 26% out of a total of 85 MPS cases identified in India in a study conducted by Khan et al in 2017.

A case report of a Mucopolysaccharidosis syndrome, precisely Morquio syndrome or MPS 4 A with typical radiological manifestations is detailed in this article.

**Chief Complain**

A 14 years old female child, born out of a non-consanguineous marriage with was having medical history of inability to stand with and without support; and unable to sit on floor. She was apparently normal at birth till the age of 3 years then complain is gradually progressed. Now since last 4 years patient is also having complaint of severe pain during movement of lower extremities. Upward movement of upper extremities is also restricted and patient is unable to do her daily routine activity by herself. The physical appearance was characterized by short stature, protuberant chest, scoliosis, deformed knees and bowing of both lower extremities. There are no any significant findings in birth history. Family history was found positive for some skeletal deformity and pain in B/L leg other two sibling one 10 years old sister and 8 years old brother.

Observation of all available medical documents and examination details of the patient are tabulated as below.

**Investigation**

The radiographic evaluation indicated Mucopolysaccharide/skeletal dysplasia. i.e.

Table 1. Investigation details of patient

MRI study of right knee joint: 11/02/2016	Suggestive multiple (4 in number) well defined oval shaped altered signal intensity lesions (hypointense on T2W1, T1W1 and heterogeneously hypointense with peripheral hyperintense rim on PDFS) is noted involving subchondral epiphyseal location of both femoral condyles, both tibial plateau, largest measuring (9×3) mm in medial femoral condyle. Bone marrow oedema (hyperintense on PDFS) is noted surrounding above mentioned lesions and medial femoral epiphyses. Overlying cartilage appears unremarkable.
---	---

	Patella: Normal Plica: Absent Anterior Cruciate ligament: Minimal increased signal intensity is noted involving tibial attachment of anterior cruciate ligament. Posterior Cruciate ligament: Appear normal Medial Collateral ligament: normal Lateral Collateral ligament: normal Medial Meniscus: Appears normal Lateral Meniscus: Appears normal Very minimal joint effusion is noted. Few subcentimeter sized lymph nodes are noted involving popliteal region. Changes of grade -1 osteochondritis dissecans involving both femoral condyles and both tibial plateau as described above.
MRI study of right knee joint: 05/07/2016	Above mentioned MR findings, as compared to previous scan dated 11/02/2016 are suggestive of:- no significant interval changes is noted
MRI study of right knee joint: 22/07/2016	There is evidence of persistent oval shape altered signal intensity lesion in subchondral location in bilateral femoral condyle and tibial plateau, appearing hypointense on T1W images and hyperintense on PDFS images with adjacent bone marrow oedema. Findings are consistent with changes of Osteochondritis dissecans.
Screening of both hip and pelvic bone: 22/07/2016	Minimal fluid seen in bilateral hip joint.
Haemogram Parameter: 31/10/2017	Hb-13.10 gm/dl, Polymorphs-43.00%, Lymphocytes-45.00%.
APTT Test 31/10/2017	APTT test value- 27.5 (Biol. Ref. Range: 30-40.5) APTT control- 29.80 (Nephelometry)
Prothrombin time 31/10/2017	PT test – 11.3 sec (Bio.Ref.Range: 8.1-14.5) PT Control – 11.80 sec (Nephelometry) INR – 0.95 (Nephelometry)
MRI of Dorso-Lumber Spine: 11/11/2017	Bullet shape multiple thoraco-lumber vertebra with superior endplate irregularity and central and beaking involving multiple thoraco-lumber vertebra. Spinal cord appear normal. No evidence of posterior element spinal vertebral defect. Findings are in favour of possibility of skeletal dysplasia. Possibility of multiple epiphyseal dysplasia or mucopolysaccharidoses (MPS-IV: Morquio syndrome) should be ruled out.
X-ray: 18/11/2017	X-ray – Chest: Normal X-ray – Foot: Normal X-ray – Wrist: Normal X-ray – Skull: Normal X-ray – Spine: Anterior central beaking of D11 and D12 vertebral body is noted. Adv: Clinopathological correlation to rule out mucopolysaccharidosis.

in a day with warm water in the dosage of 10 g.

After consuming *Ghruta* for about 15 days, there was added relief in the symptoms of *Kandu*, *TvakJadya* and *Tvak Dalana* etc; but *Nidranasha* was constant. After about a month's time of regular consumption of *Panchatikta Ghruta*, patient reported of getting sound sleep from 12 am to 5 am every night. It also helped in *Balavrudhhi*, *Bharavrudhhi*, *Kshudhavrudhhi* & overall wellness.

### Discussion

Exhausted *Mana* and *Indriya* refrain from their corresponding subjects & *Nidra* is induced<sup>5</sup>. *Nidra* is an important asset besides *Ahara* in the maintenance of health and sustenance of life<sup>6</sup>. A person sleeps due to *Snigdha* & *Guruta* tendered by dominance of *Kapha* and *Tamo Guna*<sup>7</sup>. Hence to induce sleep in a person, one needs to focus on increasing *Kapha Bhava* in the body.

Conditions of *Ksheena Shleshma* (diminished *Kapha* & *Kaphaguna*), *Vata-Pitta* predominance (acceleration of *Vata* & *Pitta* & their respective *Guna* in the body), *Kshaya* (*Dhatukshaya* – malnourishment) & *Vikara* (illness) are mainly registered as causes of sleep deprivation<sup>8</sup>. Careful observation of the causes of *Anidra* suggest that some lead to short term *Nidranasha* and once the cause is removed, body resumes to function normally eg. *Chinta*, *Bhaya*, *Krodha*, *Upavasa*, *Asukha Shayya* and *Karya*. Some causes display pathogenesis of complex origin and hence demand a different approach eg. *Dhatukshaya* occurring due to *Panchakarmiya Shodhana* procedures, *Vikara*, *Vataprakruti* and *Vatapradhanya*.

*Vikara* is defined as *Dhatuvaishamya* (anatomical & physiological disparity in *Dosha*, *Dhatu* & *Mala*)<sup>9</sup>. *Dhatu* is the objective to be obtained by using appropriate measures to bring in *Ruja Upashamana* (recovery from the disease symptoms), *Sharira Upachaya* (increase in body mass along with nourishment), *Balavrudhhi* (enhancement of physical strength & immunity), *Ahara-Ruchi* (good appetite & desire to eat), *Samyak Jarana* (proper digestion), *Yathakala Nidralabha* (timely sleep induction), *Vaikarika Swapna Adarshana* (sound sleep without inept dreams), effortless waking in the morning and smooth evacuation of *Vata*, *Mala* & *Mutra*<sup>10</sup>.

*Dhatukshaya* is noticeable as *Kshaya* of particular *Dhatu* in some diseases eg of *Rakta Dhatu* in *Pandu*, of other *Dhatu* than *Meda* in *Medoroga* or of all *Dhatu* as in *Ekadasha Rupa Rajyakshma*. *Chikitsa* of such conditions includes use of *Siddha Sneha* & *Rasayana* to establish *Dhatu*.

*Sneha* is crux of the human body and vitality of the body is maintained due to characteristics of *Sneha*. It also acts as the medium to nurture the body tissues<sup>11</sup> (9). *Snehana* drugs mainly possess *Snigdha*, *Guru*, *Drava*, *Sukshma*, *Sara*, *Pichhila*, *Sheeta*, *Manda* & *Mrudu Guna* which bring about *Snigdha* (moistening), *Mruduta* (softness), *Agnivrudhhi*, *Koshthashudhhi* (clean bowels), *Pratyagrathatu* (healthy tissues), *Drudhendriya* (invigorated sensory organs), *Bala* (strength & immunity) & *Varna* (improved complexion) in the body<sup>12,13</sup>.

*Bala* is another important factor influenced by sleep. *Bala* is assessed in the form of *Kapha*, *Oja*, physical strength as well as *Vyadhikshamatva* (immunity)<sup>14</sup>. All these facets are likely to have concurrent effects of sleep deprivation.

In the study on psoriasis, experimental model showed significant increase in specific pro-inflammatory cytokines (IL-1 $\beta$ , IL-6 and IL-12) and decrease in the anti-inflammatory cytokine (IL-10) after paradoxical sleep deprivation of 48 hrs, which were normalized after 48 h of sleep rebound. Thus, modulation of immune system in the epidermal barrier was observed due to sleep deprivation which can be considered as risk factor for development of psoriasis<sup>15</sup>.

Sleep deprivation is a common occurrence in psoriatic cases. Chronic sleep dysfunction prevalence was found in up-to 90% of patients by a study conducted by the department of dermatology, University of California, through Citizen Scientist (CP), online portal developed by NPF<sup>16</sup>.



**Introduction**

*Nidra* is one of the three finest pillars of life that paves way to the health and longevity. Duos like *Sukha* (health)-*Dukhha* (disease), *Pushi* (nourishment)-*Karshya* (emaciation), *Bala* (physical strength & immunity)- *Abala* (weakness & immunosuppression), *Vrushata* (vitality)-*Kleebata* (dullness & impotency), *Gnyana* (intellect) -*Agyana* (impaired mental & intellectual functions) and ultimately *Jivita* (life)- *Mrutyu* (death) are all reliant on the quality sleep<sup>1</sup>

Modern science also believes sleep to be critical to health, equally as diet and physical activity<sup>2</sup>. Newer studies on sleep have strengthened relationships between inadequate sleep and a wide range of disorders, including hypertension, obesity and type-2 diabetes, impaired immune functioning, cardiovascular disease and arrhythmias, mood disorders, neurodegeneration and dementia, and even loneliness<sup>3</sup>.

*Vamana*, *Virechana*, *Shirovirechana*, & *Raktamokshana* (biopurification through Panchakarma), *Bhaya* (fear), *Chinta* (anxiety), *Krodha* (agitation), *Dhooma* (smoke), *Vyayama* (exercise), *Upavasa* (starvation), *Asukha Shayya* (rough bed), *Satvabahulya* (Satva Guna predominance), *Tamojaya* (conquering *Tamoguna*), untimely sleep, *Karya* (engagement in work), *Kala* (aging), *Vikara* (different illness), *Prakruti* (Vatal constitution), *Vatapradhanya* (*Vata* dominance in the body) are cited as the causes of *Nidranasha* (insomnia)<sup>4</sup>.

**Case Details**

A male patient of 65 yrs suffering from *Ekakustha* (plaque psoriasis as diagnosed in modern science) (UHID: 20220629204, OPD:9956) visited the S. G. Patel Ayurveda Hospital & Maternity Home of GJPIASR, Anand, Gujarat 388120, for the treatment. The spread of *Kushtha* was extensive covering almost whole body. He presented with the history of irresistible & intense *Kandu* (itch), *Daha* (burning sensation of the skin), *Tvakdalana* (scaling), *Tvak-jadya* (lichenification), *Tvak Araktata* (redness of the skin), *Daurbalya* and *Vibandha* for about 5 years. He suffered from *Jvaravega* every evening with temperature ranging between 100<sup>o</sup> to 101<sup>o</sup>F. *Nidranasha* was conspicuous & patient could hardly sleep for ½ an hour to maximally one hour throughout 24 hours. He was initially treated with the following medicines:

Medicine	Dosage
Sudarshana Ghana Vati	500 mg twice a day after food
Rasayana Vati	500 mg twice a day after food
Gandhak Rasayana	250 mg thrice a day after food
Manjishthadi Kwatha	50 ml twice on empty stomach
Avipattikar Churna	5 g twice with warm water
Medhya Churna	5 g twice with warm water

After allaying the habit of *Jvaravega*, patient was subjected to *Sarvangadhara* with combination of *Manjishthadi* & *Panchavalkala Kwatha* & *Shirodhara* with *Brahmi oil* for 7 days. *Brahmi Vati* was given to relieve stress and induce sleep for about 15 days. With all the above combinations, there was reduction in the symptoms of *Kandu*, *Daha*, *Tvak Jadya*, *Tvak Dalana* and *Vibandha*. Appetite was also increased; but inadequate *Nidra* made patient to feel weak & anxious. Furthermore, due to persistence of *Tvak-dalana*, patient was advised to take *Panchatikta Ghrita* as *Shamana Sneha* twice

USG Local (Left Hip): 19/04/2018	No evidence of any sonologically detectable lump or collection noted at local site.
USG Abdomen : 19/10/2018	No evidence of free fluid in peritoneal cavity at present.
USG Local (Right Hip, Knee and Ankle): 19/10/2018	No evidence of any sonologically detectable lump or collection noted at local site.
X-RAY: 21/01/2023	B/L hip joint & Pelvic: Severe decreased joint space with at Hip joint with angulation deformity, move on right side. B/L wrist joint & Hand Both wrists show decreased joint space with soft tissue swelling. L-S Spine: Significant osteoporosis with moderate degenerative changes. Multiple level disc compression & vertebral body compression. Anterior central beaking seen in lower dorsal and upper lumbar vertebrae. B/L knee joint: Significant decreased joint space. (R>L) Significant osteoporosis. (R>L) Bowing seen in right femur-lower end. Soft tissue swelling. (R>L) Root of the X-ray not recommended due to excessive osteoporosis Changes are increased as compared to 2016. Known case of Mucopolysaccharide/skeletal dysplasia.
25-HYDROXY-VITAMIN D (D3+D2)03/02/2023:	11.70 ng/ml (Deficiency: <10; Insufficiency: 10-30) A diagnosis of mucopolysaccharidosis type IVA was reached based on the clinical and radiographic findings of the patient.
CBC 03/02/2023	Hb: 12.8 gm%; Total RBC: 4.64 mill/c.mm; Total WBC: 8800 /cu mm; Platelet Count: 359000 Differential count: N-32.6, L-49.1, E-12.3, M-5.5, B-0.5 Absolute Eosinophil Count: 1082.4 /ul Blood Indices: PCV-39.3%, MCV-84.7fl, MCH-27.6pg, MCHC- 32.6%, RDW-14.4% ESR- 42

**Examinations**

Medical examination of all major systems revealed no dysfunctional changes.

**Table 2. General Examination:**

Pallor	Eye- Conjunctiva normal, No pallor, No corneal haziness Palm- Normal Tongue- Normal
Icterus	Not present
Clubbing	Not present
Cynosis	Not present
Lymphadenopathy	No any Lymphnode enlargement

**Table 3. Systemic Examination:**

CNS	Conscious, Alert and Oriented with time, place and person
CVS	S1, S2 Heard Normal
RS	Chest clear, AEBE
GIT	P/A – Soft, No organomegaly

**Table 4. Musculo-skeletal Examination:**

Power	Right upper limb was 4/5 and left upper limbs was 3/5. Left lower limb was 3/5 and left lower limb was 2/5.
Tone	Hypertonia
Swelling	On B/L Elbow, B/L knee, B/L Hip and B/L Ankle joint
Pain	During touch & movement in B/L knee, B/L Hip and B/L Ankle joint.

**Table 5. Observation**

	Symptoms	Observation
1.	Short stature	Height: 131 cm Weight: 37 kg
2	Stand without support	Not able to standing
3.	Bending (Hand feet touch)	Not able to bending
4.	Butterfly position	Not able to do
5.	forward bending in sitting position (half <i>Paschimotanasana</i> )	Unable for forward bending at all (half <i>Paschimotanasana</i> )
6.	<i>Vajrasana</i> position	Not able to do at all
7.	Daily activities	
	A) Hair comb	Unable to combing hair by herself
	B) To wear socks	Unable to wear socks by herself
	C) Change dress	Unable to Change dress by herself
Joint	Observation	
Wrist joint	No swelling, No pain	
Elbow joint	Swelling in B/L elbow joint, No pain Not able to straight and bend from elbow. Carrying Angle – 60	
Shoulder joint	Fully straight upward movement of hand not done.	
Knee joint	Swelling & pain during touch & movement in B/L knee	
Ankle joint	Swelling & pain during touch & movement in B/L Ankle joint	
Hip joint	Swelling & pain during touch & movement in B/L Hip joint	



HEB

**Journal of Research in Indian Medicine**  
An Official Publication of Bureau for Health & Education Status Upliftment  
(Constitutionally Entitled As Health-Education, Bureau)

JRIM

### Effect of Snehapana on Nidranasha in a Case of Ekakushtha

<sup>1</sup>Dr. Gayatri Gandhe, MD (Kayachikitsa), & <sup>2</sup>Dr. C. H. Babaria, MD, PhD (Maulika Sidhant)

<sup>1</sup>Professor & HOD, Department of Panchakarma, G.J. Patel Institute of Ayurvedic Studies & Research, New Vallabh Vidyanagar, Anand, Gujarat, 388120

<sup>2</sup>Director & Medical Superintendent, G. J. Patel Institute of Ayurvedic Studies & Research, New Vallabh Vidyanagar, Anand, Gujarat, 388120

#### Name of Department & Institution:

Department of Panchakarma, G. J. Patel Institute of Ayurvedic Studies & Research,  
New Vallabh Vidyanagar, Anand, Gujarat, 388120

#### Corresponding Author:

Dr Gayatri S Gandhe, Chandan Vila, Mahadev Road, Vallabh Vidyanagar, near Manish Corner, Anand, Gujarat, 388120

[Email Id: serviceheb@gmail.com](mailto:serviceheb@gmail.com)

#### Abstract

*Nidra* is one of three important pillars of life that paves way to health & longevity. *Nidra* is brought about by *Shleshma Dhatu & Tamoguna*. *Vata Vrudhhi* of any origin developing in the body can lead to *Nidranasha*. *Dhatukshaya* is a form of *Dhatuvaishamyia* also termed as *Vikara*. *Dhatukshaya* is an important cause as well as result of vitiation of *Vata* in the body. Management of *Nidranasha* in any pathological condition needs correction of *Dhatukvaishamyia* either in the form of *Kshaya* or *Vridhhi* & establishing *Dhatusamyia*. Hence, *Yathakala Nidralabha* (timely sleep) has been cited as one of the standards in the attainment of *Dhatusamyia*. In a case of *Ekakushtha* (plaque psoriasis), *Nidranasha* of longstanding origin was successfully managed with the use of *Panchtikta Ghrita* as *Shamana Sneha* that also helped to alleviate other symptoms like *Kandu*, *Daha*, *Tvakdarana*, *Araktata & Vibandha* & overall wellbeing. *Sneha* could be of great help in conditions of *Nidranasha* to restore sleep.

**Keywords:** *Nidranasha*, *Tamoguna*, *Shleshma*, *Dhatukshaya*, *Panchatikta Ghrita*

#### Access this Article Online

Website: <a href="http://heb-nic.in/jrim-issues/">http://heb-nic.in/jrim-issues/</a>	Quick Response Code:
Received on 10/01/2023 Accepted on 18/01/2023 © HEB All rights reserved	



**REFERENCES**

1. Tripathi R.D 'Charaka Samhita' of Agnivesh elaborated by Charaka & redacted by Dradhabala Volume 1 Shareer sthan, 8/54 'Vaidyamanorama' Publication- Choukhambha Sanskrit Samsthan Delhi.2009.
2. Shastri AD Sushruta-Samhita: with Nibandha Sangraha comm.. of Dalhanacarya and Nyayacandrika Panjika Chaukhambha Krishnadas Academy. Varanasi. U.P. India. Reprint 1998.
3. Murthy K.R Vagbhata Acharya. Ashtanga Hridayam. Chaukhambha Krishnadas Academy. Varanasi. U.P. India. Reprint 1998.
4. Shastri AD 'Sushruta Samhita' Pratham bhag Publication Sutrasthan 45,49 Choukhamba Sanskrit Samsthan, Varanasi 12th edition 2001.
5. Murthy K.R Bhavaprakash. Choukhambha Krishnadas Academy, Varanasi. Edition 2004.
6. Shastri L, Yogaratnakara: Vidyotini Hindi comm. by Kshirdoshchikitsa Chaukhmbha Sanskrit series office, Varanasi, 1955
7. Tripathi R.D 'Charaka Samhita' of Agnivesh elaborated by Charaka & redacted by Dradhabala Shareer sthan, 6/23 Publication Choukhambha Sanskrit Samsthan Delhi, 2008.pp.144
8. Murthy K.H Bhela-Samhita. Text with English Translation, commentary, and critical notes Sharira Sthan 5/7 Chaukhambha Vishvabharati. Oriental Publishers and Distributors. Varanasi. Reprint- 2003 .pp.146
9. Shastri AD 'Sushruta Samhita' Pratham bhag, Sutrasthan 14/10 Choukhamba Sanskrit Samsthan, Varanasi 12th edition 2001.
10. Tripathi R.D 'Charaka Samhita' of Agnivesh elaborated by Charaka & redacted by Dradhabala Volume 1 Shareer sthan, 6/23 Choukhambha Sanskrit Samsthan Delhi,2008.
11. Murthy K.R Sharangadhara. Sharangadhara Samhita- A treatise on Ayurveda. Pu/k (5/16-17) Chaukhambha Orientalia, Golghar Varanasi 2008.pp.53
12. Tripathi H. Harita Samhita (With Hindi Commentary) Chaukhambha Krishnadas Academy, Varanasi. 1st Edition 2005.pp.86
13. Murthy K.R, Vagbhata. Acharya. Astanga. Samgraha. Sharira 5/98 Chaukhambha Orientalia, Varanasi. 9th Edition 2005
14. Murthy K.H Bhela-Samhita. Text with English Translation, commentary, and critical notes Sutra sthan17/2 Chaukhambha Vishvabharati. Oriental Publishers and Distributors. Varanasi. Rep
15. Shastri AD 'Sushruta Samhita' Pratham bhag, Edited Sharira sthan10/14.Choukhamba Sanskrit Samsthan, Varanasi 12th edition 2001rint- 2003.
16. Horton S, Sanghvi T, Phillips M, et al. Breastfeeding promotion and priority setting in health. Health Policy Plan. 1996;11(2):156-168. doi:10.1093/heapol/11.2.156
17. Tanwar K, Tanwar A.K "Understanding the Concept of Stanya and Its Need In Context To Breastfeeding" IRJAY. [online]2022;5(2);179-183.

**Discussion**

Here is a case of Morquio Syndrome compared to *Kubjata*. *Kubjata* is one of the *VatajaNanatmajaVikaraVyadhi*. Main features of this disease include skeletal abnormalities. There are two variants of marquis syndrome of MPS IV A and MPS IV B, which results from mutations in galactosamine-6-sulfatase genes and due to beta-galactosidase deficiency respectively. The gene for N- acetylgalactosamin e-6-sulfatase is located on chromosome 16q 24.3 whereas gene for beta galactosidase on chromosome 3p21.33.

Patients with MPS IV-A appear normal at birth, but initial presenting symptoms often manifest after 1 year of age. Musculoskeletal features are the most common presenting features of MPS IV-A.MPS IV-A does not have any neurological manifestation and patients exhibit normal intelligence. Common patient-reported initial skeletal symptoms include short stature (height-131 cm), abnormal gait and spinal abnormalities, cervical instability, kyphosis/gibbus, and scoliosis. Gibbus is often the first sign noticed in MPS IVA.

Based on clinical and radiological studies, MPS 4A and MPS 4B, both are difficult to differentiate clinically. They are spondyloepiphysio-metaphyseal dysplasia generally diagnosed in the second year of life when the child starts walking.

Clinical & radiological findings might be helpful to identify and confirm the diagnosis of Morquio syndrome in this patient. *Samvahana* of the body depends on dhatu. Irregularity in the body shape mainly because of malformation of *AsthiDhatu* and body stature indicates malformation of *MamsaDhatu*. These two dhatu are essential for physical activities like walking, jumping, running etc. Since there is no evidence of appropriate etiology, a suspicion of *Janmabalapravruttavyadhi* is made. *Kubjata* is one amongst *Janmabalapravruttavyadhi* and *Vatajananatmajavikara*. According to acharya Madhavakara, *Kubjata* refers to elevated chest or back. Acharya Vagbhata explained it as *Avanamai*.e. bowing of the body. Considering the subtypes of this condition is diagnosed as *BahirayamaKubjata*. As the child was able to walk at the beginning while achieving developmental milestones and presence of skeletal deformities, the differential diagnosis for *Phakkaroga* was ruled out.

**Acknowledgments**

The author is grateful to the mother of the child for giving us the consent for this paper to be published.

**Conflicts of Interest**

The authors have no conflict of interest to declare

**Ethical Approval**

A written informed consent was obtained from the patient for this case to be reported for publication. The patient's mother was assured of absolute confidentiality and anonymity. Ethical clearance was not required for this study.

**References**

1. Mucopolysaccharidosis type IV: report of 5 cases of Morquio Syndrome Jorge Alejandro Cadena Arteaga,MD; Retrived on dated 11.3.23
2. Saloni Gupta;J Lab Physicians.Morquio Syndrome Presenting with Dural Band Pathology: A Case Report; 2020, Dec; 12(4): 285–288; Published online 2020 Dec 30. doi: 10.1055/s-0040-1722548;Retrived on dated 15.3.23
3. KamleshunRamphul, Morquio Syndrome: A Case Report;Published online 2018 March 5. Doi:10.7759/cureus.2270; Retrived on dated 15.3.23

4. Dr.RuchiDudeja;  
[https://www.researchgate.net/publication/342531248\\_MORQUIO\\_SYNDROME\\_A\\_CASE\\_REPORT;Original Research Paper,Pediatrics;Volume : 6 | Issue : 2 | February – 2017;ISSN - 2250-1991 | IF : 5.215 | IC Value : 79.96; Retrived on dated 18.3.23](https://www.researchgate.net/publication/342531248_MORQUIO_SYNDROME_A_CASE_REPORT;Original%20Research%20Paper,Pediatrics;Volume%20%3A6%20Issue%20%3A2%20February%20-%202017;ISSN%20-%202250-1991%20IF%20%3A5.215%20IC%20Value%20%3A79.96;Retrieved%20on%20dated%2018.3.23)
5. Fauci A.S. kasper DL, Braunwald E, Hauser SL, Longo DL, Jameson JL et al, Harrison's principles of Internal medicine, 18th ed, United states of America, McGraw-Hill; 2012.p.1392; Retrived on dated 18.3.23
6. Acharya Agnivesha, Charaka samhita. Vaidya YadavajiTrikamjiAcharya,editor Varanasi: Chaukhambhaorientalia, reprint,2011 p.113
7. Sharma A. Madhavanidanam with Madhava Vimarshini Commentary. 1st \_edition, Varanasi: Chaukambha Sanskrit pratishthan; 2007.p.403
8. Vagbhatacharya, Astangasangraha. Indu, Dr. Shivprasadsharma, editor, Varanasi, chaukambha press, reprint, 2012 p.330
9. Acharya Agnivesha, Charaka samhita. Vaidya YadavajiTrikamjiAcharya,editor Varanasi: Chaukhambhaorientalia, reprint,2011 p.618

diet) from two years on. Children's diets primarily consist of milk. Even during the Vedic era, breastfeeding was regarded as one of the best foods for young children. After giving birth, Rigveda encouraged nursing while reciting mantras. Skanda, who is recorded in the Dharma Grantha, only gained notoriety as "Kartikaya" because he was nursed by six "kritikas". This allusion highlights the significance of breast milk.<sup>13</sup>

- Milk, which offers complete nutrition, boosts stamina, and promotes good health, is one of Charaka's standards for a healthful diet.

- According to Sushruta, milk is the first natural food that all animals, including humans, consume.

Milk gives vigor to the body in its overall condition. It has aphrodisiac properties and boosts immunity; during the illness stage, it is congenial and aids in maintaining the balance of the dosas. Like Charaka and Sushruta, Kashyapa has stated a similar viewpoint. Milk cleanses srotas, maintains dosas in a balanced condition, promotes appetite, and helps digestion, according to Harita, who also discussed the function milk plays in keeping a person free from numerous maladies.<sup>14</sup>

### DISCUSSION

Breastfeeding is the process of feeding a newborn or young child breast milk directly from a woman's breasts (via lactation) as opposed to a bottle or other container. Because they have a sucking reflex, newborns can swallow and suck milk. Most mothers may breastfeed for six months or more without using baby formula or solid meals. Human breast milk is the healthiest type of milk for newborn humans. There are a few exceptions, including when the mother is on a certain drug, has HIV infection, or has active, untreated TB. Breastfeeding improves health, aids in illness prevention, and lowers expenditures associated with feeding and medical care.<sup>15</sup>

Artificial feeding has been related to an increase in infant fatalities from diarrhea in both poor and industrialized nations. Although experts generally agree that breastfeeding is advantageous, they may vary on the optimal duration of nursing and the dangers of using artificial formulas. Choosing to breastfeed is a highly personal choice. Regarding whether or not they want to, many women have their own opinions and sentiments. The BEST source of newborn nutrition, according to the American Academy of Pediatrics and the American Dietetic Association, is nursing.<sup>16</sup>

According to the World Health Organization (WHO) and the American Academy of Pediatrics (AAP), breastfeeding is crucial for both moms and newborns. Both advocate for six months of exclusive breastfeeding followed by at least one year and maybe two years or more of supplementation. Regulating bodies aim to lessen the risks of artificial feeding while simultaneously recognizing the advantages of breastfeeding.<sup>17</sup>

### CONCLUSION

Every living thing's foundational element and primary source of sustenance is breast milk. Every culture values it, and every branch of medicine honors it. The ancient science of life, Ayurveda, continues to emphasize its significance as it has for the last 5000 years. Breastmilk is known as Stanya in Ayurveda. Balajeevana is another name for stanya, which is also known as ksheera, dugdha, piyusha, and payas. The word "balajeevana" refers to something that nourishes and revitalizes children. Ancient Ayurvedic academics have provided much-needed details regarding stanya's development, ejection (stanya pravritti), characteristics of excellent stanya (stanyaSampatt), weaning (stanya apanaya kala), and other topics. Let's go more deeply into the stanya facts according to Ayurveda. Ayurvedic provided a thorough and scientific explanation of Stanya and its significance that may be used in the modern period to lower infant mortality. Many medications, dietary practices, and behavioral regimens that are thought to enhance breast milk are described in Ayurveda.

### IMPORTANCE OF BREAST-FEEDING

It is now well accepted that breast milk is the best milk for newborns of all socioeconomic backgrounds, that colostrum is crucial for the newborn, and that complementary foods must be introduced after the age of six months.<sup>9</sup>

It is recommended to maintain breastfeeding for at least two years, and nursing moms should receive the right nutrients. The most frequent cause of mothers failing to initiate breastfeeding within one hour of birth, maintaining exclusive breastfeeding for the first six months, interrupting breastfeeding prematurely, or starting complementary feeding before it is nutritionally necessary is anxiety related to the unfounded fear of lactation failure (the inability to produce milk) and milk insufficiency (the inadequacy of breast milk to meet the nutritional needs of the normal infant). The most prevalent justification for non-exclusive breastfeeding is the mother's mistaken perception that she is not producing enough milk. The ideal newborn feeding regimen includes six months of just nursing, followed by the gradual introduction of semi-solid and solid meals. Healthy growth and development of a newborn depend on proper nourishment.<sup>10</sup>

### ADVANTAGE OF BREAST FEEDING

Because mother's milk is closest in composition to the nutrition the newborn obtains while in the womb—menstrual blood that is converted into milk—the infant should be fed as much of it as possible. This milk is quickly accepted by and well-liked by the newborn.<sup>11</sup>

### QUALITY OF GOOD MILK

The newborn must be fed high-quality milk. The existence of breast milk can reveal a lot about the health of both mother and child. When breast milk is poured into water, it rapidly dissolves and has a typical flavor, fragrance, and consistency, according to Acharya Charaka. According to Acharya Susrutha, breast milk will have the color of a conch shell, or a yellowish-white, cool liquid that is somewhat pleasant, free of streaks, and that never floats or sinks when a drop is placed in water. According to all academics, breast milk is readily digested, promotes a child's long life and good health, and is free from contaminants or discoloration.

According to Ayurveda, the vata, pitta, and kapha doshas might become imbalanced, which will affect the stanya's flavor, aroma, color, and consistency. Dushta stanya is a kind of vitiated stanya that is harmful to the unborn child. Dushta stanya can result from a variety of maternal factors, such as a mother who is physically or mentally ill, who represses her natural urges, who consumes too much meat, fish, curd, jaggery, and alcohol, who consumes too much acidic, hot, and salty food, who wakes up at night, who frets a lot, who exercises too much, who is under pressure, who is angry, etc. By engaging in the aforementioned actions, the mother might affect her body doshas, causing these vitiated doshas to mingle with the stanya in stanyavahi siras.

### CLINICAL SIGNIFICANCE OF STANYA

feeding a baby: eating is one of a person's most fundamental necessities. Children's nutritional issues are different from adults. All nutrients must offer not only energy and tissue repair, but also growth, which entails an increase in the size of all bodily tissues. Infancy is when growth increases at its fastest pace. Therefore, this time is when dietary issues are most likely to arise. It is crucial to provide the infant with sufficient nourishment.<sup>12</sup>

According to their nutritional needs, children are categorized into three age groups in ancient Ayurvedic literature: ksirapa (milk is the major diet) up to one year, ksirannada (milk and cereals both) from half a year, and Annada (cereal as the main



HEB

**Journal of Research in Indian Medicine**  
An Official Publication of Bureau for Health & Education Status Upliftment  
(Constitutionally Entitled As Health-Education, Bureau)

JRIM

## Ayurveda A Glimmer of Hope for Metabolic Syndrome

*Dr. Lalita Dushad<sup>1</sup>, & Dr. Vaibhav Mishra<sup>2</sup>*

1. PG Scholar Department of Shalya Tantra, PIA, Parul University, Vadodara, Gujarat, 391760
2. PG Scholar Department of Shalya Tantra, PIA, Parul University, Vadodara, Gujarat, 391760

[Email Id: serviceheb@gmail.com](mailto:serviceheb@gmail.com) \*

#### Abstract:

Metabolic disorders are serious health difficulties in today's world, and the prevalence of metabolic diseases is increasing due to a disordered lifestyle pattern. The word "Santarpanjanya Vikaras" is used in Ayurvedic writings to denote disorders caused by faulty tissue metabolism. According to Ayurveda, bad food habits and a sedentary lifestyle alter the condition of Agni, which leads to Ama formation and, ultimately, metabolic syndrome. Dosha vitiation, Dhatu deficiency, channel obstruction, and other factors can all contribute to the pathophysiology of metabolic diseases. Internal medicine was advised by the Kayachikitsa branch of Ayurveda for the treatment of numerous metabolic problems. Given the rising societal health burden caused by metabolic syndrome, the current research investigates the significance of ayurvedic internal medicine in the therapy of metabolic syndrome.

**Keywords** metabolic syndrome , madhumeha , obesity, sathoulya , rasayan , Agni

#### Access this Article Online

Website: <a href="http://heb-nic.in/jrim-issues/">http://heb-nic.in/jrim-issues/</a>	Quick Response Code:
Received on 21/05/2023 Accepted on 29/05/2023 © HEB All rights reserved	



## INTRODUCTION

Metabolic disorders are today considered one of the major health difficulties, and the incidence of such diseases is increasing day by day due to the disrupted pattern of daily regimen. Sthaulya/Medoroga, Prameha, and Hridroga are important metabolic illnesses that afflict people all over the world. Pathogenesis of metabolic illnesses can begin with the activation of Medadhatu, Medodhatvagni, and Rakta. Indigested food occasionally generates Ama, and when this Ama interacts with Medadhatu, Sama Medadhatu (unhealthy fats) are created. When Ama travels throughout the body, it blocks micro-channels and disrupts normal circulation processes, triggering the pathogenesis of metabolic illnesses.

According to Ayurveda, Snigdha, Pichhila, GuruAharaSevana, Madyapana, and Atiasanbehavior, among others, can induce metabolic issues.

The vitiation of Kaphaplays a crucial part in the accumulation of Amadosa, which can lead to diseases such as dyslipidemia, obesity, and hyperglycemia, among others. Pittacan vitiation causes Medovridhi, which is connected with Srotosanga, and Vata&Vata vitiation can cause Avrita Vata.

The creation of aberrant Medadhatu exceeds in metabolic illnesses, however its use reduces the ensuing fat buildup inside the body (atherosclerotic). Hormonal imbalances can also lead to disorders such as hyperglycemia and hyperthyroidism or hypothyroidism. According to Ayurveda, Dusya in Rasa, Meda, and Mamsa can cause the pathophysiology of metabolic illnesses.

The importance of Srotasa in metabolic syndrome cannot be overlooked; Srotasadusti in Raktavaha, Rasavaha, Medovaha, and Mamsavaha Srotasa is thought to play a significant role in the development of metabolic illnesses.

Approaches for dealing with such issues include maintaining a healthy daily routine, exercising, meditating, avoiding stress, and using herbal medication, among other things. Internal medicine derived from natural sources plays an important role in the therapy of metabolic disorders.

The Ayurvedic notion of 'Rasayana' appears to encapsulate not only the main components of a novel hypothesis centred on an immuno-endocrine psycho-neuro axis, but also to go beyond it by incorporating the complete human system with its diverse and complex immunoendocrine pathway (Handa, 1993). Ayurvedic physicians were well aware that trauma to the body's delicate cellular machinery results in wear and tear on various body structures and degradation of functional ability.

## AYURVEDA MANAGEMENT OF METABOLIC SYNDROME

It is Santarpanajanyavyadhi, although Atparpanachikitsa alone is insufficient for Sthoulya treatment. Because Sthoulya's key etiological variables are vitiated Meda, Kapha, and Vata. As a result, treatment should be planned with vitiated Vata, Meda, and Kapha in mind. Charak Samhita recommended using Rukshana, Ushna, and primarily Kapha-Vata shamanadrugs to treat Sthoulya. Obesity treatment is described quite comprehensively in Ayurveda. Several single herbs, compound formulations, exercises, and lifestyle changes have been mentioned. Ayurvedic treatment of any ailment is broken into three sections.

1. Nidana Parivarjana (Prevention of causal factors)
2. Shodhana (Purification therapy for removing poisons from the body)
3. Shaman (Medical Treatment)

According to Ayurveda, the main concepts of treating metabolic syndrome comprise the use of medications that ease Vata, lower Kapha, and aid to regularise the circulatory and hormonal functions of the body. The medicine, which metabolises extra fat and improves digestive fire, is also effective in cases of metabolic diseases. Atparpana, Vanaspati

compared to rasa, and this includes breastmilk as well; it is stated that when it is time, some of the ahara rasa (nutrients absorbed from food) travels to the breast and creates stanya. Even current science will concur that a mother's diet has an influence on the production of breastmilk! Some Acharyas speak of stanyavahi siras, which is unquestionably comparable to the milk-conveying ducts and lobes of the breast.

According to Sushruta, the rasa is produced following the digestion of food. The stanya, or pleasant essence, of this rasa, which is being circulated throughout the body as a result of the action of vyana vata, reaches the breast. Rasadhatu's essence is the source of both stanya and rasa. The idea of garbhaposhana states that the Aahara that garbini consumes serves three purposes. These are what they are:

- Matru pusti
- Garbha pusti and
- Stana Pusti.

According to Ayurvedic literatures Rasadhatu cultivates stanya. Acharya Sarangadhar saw stanya as an updhatu of rasa dhatu. Whatever the ladies eat, according to Harita, goes via the kshiravahi sira and is blended with pitta before arriving at Jathara. It passes via the siras of the breast after being digested by the agni and is subsequently ejected. Agni and soma are both present in the secretion known as milk. The action of the pitta causes the blood to become suppurated and white. Young girls' lack of dhatu strength and vandhya (infertile) women's vayu-filled milk-carrying channel are the reasons why milk does not develop in either case.<sup>5</sup>

Acharya Vriddha Vagbhata asserted that stanya is created from the Aahara rasa itself when talking about garbhaposhana. Rasa serves as the foundation for both raja and stanya, with stanya serving as the upadhatu of rasadhatu. one of the eleven pranayatanas (the seat of life). Stanya has been added by Bhela.<sup>6</sup>

## STANYA PRAVRITI (MILK EJECTION)

According to Ayurvedic Teeka's on the physiology of milk secretion, once a woman gives birth, her physiological channels become clear, and rasa in the form of stanya fills the breasts. Another theory holds that the milk ejection reflex is set off by the hridaya region's channels opening up so that the milk may be pushed out. The name piyusha, which loosely translates to "elixir," refers to the first milk that is rich in the kapha dosha.

In a normal state, Sukra is dispersed throughout the body, but when she recalls anything, touches a body part, or performs sexual activity, it gathers in Sukrasaya and ejaculates from the penis. When the mother is stimulated by the substances listed below, milk secretion occurs similarly to how Sukra does.<sup>7</sup>

- The youngster stroking her body.
- Watching the kid
- The youngster's memory
- Constantly holding the youngster in her lap.
- When the kid touched her breast
- The mother's love for her kid is the most crucial element.

Breast milk production and ejaculation are significantly influenced by the mother's love for her child. Many psychogenic factors can reduce milk ejection by preventing the release of oxytocin. The Oxytocin "Milk ejection" response is inhibited by anxiety, tension, discomfort, and uncertainty, while it is enhanced by loving thoughts of the baby, hearing the infant, seeing the baby, and the mother feeling at ease, comfortable, and confident.<sup>8</sup>

## INTRODUCTION

For newborns, breast milk is a fantastic source of nutrients. The World Health Organization recommends exclusively breastfeeding during the first six months of life, beyond which time "infants should receive nutritionally appropriate and safe supplemental meals while nursing continues for up to two years of age or beyond". The American Academy of Pediatrics advises mothers should breastfeed their infants exclusively during the first six months of life. In addition, breastfeeding should continue for at least the first year of life and thereafter for as long as the mother and child see fit. The National Health Service recommends exclusive breastfeeding for the first six months (26 weeks) of your baby's life. Following that, adding breast milk to your baby's diet will aid in their growth and development. Breastfeeding is beneficial for any quantity. The benefits and duration of the protection increase with breastfeeding duration.<sup>1</sup>

Reduced breast milk production is a common problem we find in about 40% of women in our clinical practice. As a result of their integration into Western society, women experience stress and pressure. A person's psychological condition and lifestyle are connected to the physiological process of lactation. According to Sushruta, stanyaksaya (reduced milk production) is brought on by the mother's psychological state (Krodha, shoka, Bhaya, Irsha, and Avatsalyatwa), food, and physical state. The most common reason for early breastfeeding termination is the belief that there would not be enough milk to go around. Today's fast-paced lifestyle, stress, demanding daily activities, and unhealthy eating habits are the main contributors to lactation failure. The concepts of Aahar (diet), vihara (activities), and Aushadha in ayurveda offer natural, all-encompassing assistance in such circumstances. The Ayurvedic concept of stanya and its significance in the modern period were the subject of the current review.<sup>2</sup>

## MATERIAL AND METHOD

The classic literature of Ayurveda is used to study this subject. To get a thorough understanding of the notion of stanya in relation to breastfeeding, materials on stanya, its significance, and other pertinent subjects were acquired, reviewed, and discussed.

## CONCEPT OF STANYA

The best food for babies is breast milk, or stanya. Charaka claims that it is energizing (Snigdha), wholesome (satmya), anabolic (Brahmana), and unctuous. Additionally, it can be injected to treat ocular, pitta, and rakta diseases. In addition to its physiological properties, Sushruta has spoken on the physical characteristics of breast milk.<sup>3</sup>

Breast milk is chilly and sweet, but it also includes a secondary flavor that is astringent. laghu (light), energetic, and an appetizer the fact that breast milk should never be boiled is also specified by him. Vagbhata and other academics contend that nursing promotes a child's development in a healthy way.<sup>4</sup>

## PRAMANA – 2 Anjali

## FORMATION OF STANYA

When it comes to the makeup of a living organism, Ayurveda has a very distinctive theory. According to this theory, the body is made up of five components (the panchamahabhutas, or five forces—Prithvi, Ap, Tejas, Vayu, and Akasha) and is governed by three bioenergies—Vata, Pitta, and Kapha—as well as seven tissues—Rasa, Rakta, Mamsa, Medas, Asthi, Majja, and Shukra. These seven tissues, or sapta dhatus, stand in for various parts of the body. For instance, rakta stands in for blood, asthi for bones, majja for bone marrow, and mamsa for muscles. All bodily fluids other than blood may be

Kashaya, Lekhana Kashaya, and KaphaharaChikitsa were prescribed by Ayurveda for the treatment of metabolic problems, particularly those involving excess fat accumulation.

## AYURVEDA MEDICINE FOR MADHUMEHA

Diabetes is a disorder in which the body fails to adequately metabolise carbohydrates or the sugar level rises. Ayurvedic herbs have various health benefits in diabetes, including suppressing the fundamental cause of the condition, building immunity, improving digestion, regulating hormone levels, and improving general circulatory function. Jamuna (Syzygium Cumini), Daruharidra (Berberis lyceum), Gudmaar (Gymnema Sylvestre), Karela (Momordica Charantia), and Haridra (Curcuma Longa), among others, can be utilised as natural diabetic treatments.

Compound formulations of herbs and formulations used to treat metabolic problems Medohara guggulu, Nisamlaki ChurnaGuggulu, Punarnavadi guggulu, Sapragandha ghanavati Rasona, Puskarabramhi guggulu, Triphaladi guggulu, Amritadi guggulu.

## STHAULYA/MEDOROGA AYURVEDA MEDICINE

Obesity is one of the most frequent metabolic disorders, and it is caused primarily by a poor daily regimen and a disordered food pattern. Ayurveda identified several herbs for the treatment of obesity, including Triphala, Guggul, Kalonji, Punarnava, Aloe vera, and Pepper, among others. Fruits such as Shyamaka, Yavaka, Kulatha, Makustha, and Patola can be used to treat obesity.

## DISCUSSION

Obesity, metabolic syndrome, and diabetes mellitus are reaching pandemic proportions around the world. There are 400 million clinically obese individuals in the world, and over 220 million people with diabetes. In terms of human misery and economic hardship, the worldwide impact of these illnesses is enormous. There is an urgent need for a better knowledge of these disease processes and their management, including the adoption of natural, cost-effective solutions. In this aspect, the Ayurvedic health care system has a lot to offer. Ayurveda defines Prameha as a group of complex clinical diseases characterised by frequent inappropriate micturition. Obesity, metabolic syndrome, and diabetes mellitus are among clinical disorders related with Prameha. The Ayurvedic texts go into great detail about the aetiology, classification, pathophysiology, and treatment of Prameha. The theoretical foundation and extensive set of strategies used by Ayurveda to treat Prameha may be useful in effectively and cost-effectively controlling obesity, metabolic syndrome, and diabetes mellitus.

## CONCLUSION

According to Ayurveda, metabolic diseases can be caused by faulty Agni functioning, Ama generation, Dosha and Dhatu vitiation, channel obstruction, and other factors. Diseases such as Madhumeha, Ati Sthoulya, Srotsam Lepa, Dhamani pralepa, and dyslipidemia are examples of metabolic illnesses. Kayachikitsa, an Ayurvedic branch, recommends the use of internal medicine for the therapy of various metabolic illnesses, as well as the implementation of a healthy daily regimen, meditation, exercise, and Yoga, among other things. Herbs such as Vrikshamla Guggulu, Meshshringi, Arjuna, and Haridra, among others, can be used in conjunction with formulations such as Medohara Guggulu, Nisamlaki, and others. These are all natural medications that provide numerous health benefits in the treatment of metabolic problems. These internal medicines' Atparpana, Vanaspati Kashaya, Lekhana Kashaya, Kaphahara, and Vatahara effects serve to

disrupt the aetiology of metabolic illnesses and can be utilised as alternative therapy.

As the majority of people have sedentary lifestyles, high socioeconomic position, high BMI, and are overweight, lifestyle modification remains the primary strategy of choice. As a result, lifestyle changes combined with specialised Ayurvedic therapies such as palliative (Shaman), panchkarma (Shodhan), Sadhvrit (good conduct/ethical regimen for balanced state), exercise and diet, Yogic practises, and so on, may be useful in the management of Metabolic Syndrome.

#### REFERENCE

1. Gaddam K.K, Ventura H.O, Lavie C.J “Metabolic syndrome and heart failure” the risk, paradox, and treatment. Current Hypertension Rep. 2011;13:142-8.
2. Reaven G.M and Banting L “Role of insulin resistance in human disease” Diabetes 1988; 37:1595-1607.
3. Chakradutta. Chakrapanidutta, Vaidyprabha Hindi Commentary by Tripathi, Indradev Chaukhabha Sanskrit Sansthan Varanasi. 1997.
4. Madhav Nidan, Shastri Sudarsana, Vidyotini Hindi Commentory, Chaukhambha Sanskrit Sansthan Varanasi. 2006.



HEB

**Journal of Research in Indian Medicine**  
An Official Publication of Bureau for Health & Education Status Upliftment  
(Constitutionally Entitled As Health-Education, Bureau)

JRIM

### A Clinical Significance of Stanya in Present Scenario- An Ayurvedic Review

*Dr Shashank Nautiyal<sup>1</sup>, Prof. Balkrishan Panwar<sup>2</sup>*

1. Assistant Professor, Department of Kriya Sharir, Uttarakhand Ayurved University Gurukul Campus Haridwar.
2. Professor, Department of Kriya Sharir, Uttarakhand Ayurved University Gurukul Campus Haridwar.

**Corresponding Author** - Dr Shashank Nautiyal, Assistant Professor, Department of Kriya Sharir, Uttarakhand Ayurved University Gurukul Campus Haridwar.

**Email Id:** [serviceheb@gmail.com](mailto:serviceheb@gmail.com)

#### ABSTRACT

Food is one of the most essential elements for human life. The dietary needs change as people gets older and older. Infant mortality is higher in underdeveloped nations like India because of inadequate infant nutrition. Therefore, it is essential to provide them enough food. The most essential food for kids is milk since it not only offers them energy but also supports healthy growth and development throughout this period. Breast milk was regarded as the best food for neonates even during the Vedic Period. After delivery, nursing is advised while reciting Mantras, according to the Rigveda. Numerous ayurvedic writings on the subject of jatakarma emphasize the value of nursing. According to Ayurvedic literature, breast milk is one of the updhātu of rasa. For both the mother and the kid, breast milk offers a number of positive health effects. The infant should be breastfed as soon as possible after birth. The most efficient way to care for a newborn is to breastfeed. In addition to the intense relationship it promotes, breast milk is the best nourishment for them. The focus of the current review was on the idea of stanya, or breast milk, as it is known in Ayurvedic literature, and its relevance today.

**KEYWORDS** - Stanya, breastfeed, updhātu, Ayurveda, etc.

#### Access this Article Online

Website: <http://heb-nic.in/jrim-issues/>

Quick Response Code:

Received on 13/05/2023  
Accepted on 06/06/2023 © HEB All rights reserved





product of *sopha* on prostate gland i.e., *kapha vata dushti*. So, *Chikitsa* should be performed with the correct and methodical assessment of *dosha*, *dushya lakshana*, etc. It is inevitable that the right diet and routine will be followed along with this. Therefore, avoiding foods that promote constipation, urinating as soon as the urge strikes, drinking lots of water, sitting on hard seats or chairs, long trips, abstaining from alcohol and cigarettes, managing stress, and engaging in pelvic floor muscle exercises and *yoga* etc should be carried out.

Therefore, an important step in the management of prostatic disease is the correct management and adherence to *pathya ahara* and *vihara*.

### Conclusion

Correlating BPH with *Ayurveda* concepts like *apana vaigunya*, *vatakundalika*, *vatasteela*, *sopha*, *antarvidradi*, etc can be taken into account. Treating BPH based on the above concepts considering *nidana panchaka* will lead to symptomatic relief of the problem. So *kapha vata hara*, *vatanulomana*, *sopha hara chikitsa* along with follow *pathyaapathya* gives a good outcome.

### References

1. International journal of herbal medicine Case report: Management of *mootraghata* (benign prostatic hyperplasia) with Bala Taila Matra Basti Joyal Patel, Tukaram Dudhamal, Sanjay Kumar Gupta, Vyasadev Mahanta IJHM 2014; 3(1): 37-39
2. Short Practise of Surgery, Bailey's and Love's. 23 rd. edition. London and Oxford University. New York: Hodder Headline group, 2000, 1247.
3. Campbell, Walsh, Campbell's urology, W.B. Saunders Company, 9th Edition 2007 Tubaro et al., 2001; Varkarakis et al., 2004  
www.researchgate.net/publication/23387354\_Benign\_prostatic\_hyperplasia\_Is\_it\_a\_g
4. rowing\_public\_health\_concern\_for\_India
5. Mayo clinic, Prostatitis – symptoms and causes, syc-20355766
6. Longo, Fauci, Kasper, Kausa, Jameson and Loscalzo, Harrison's principles of internal medicine, 18<sup>th</sup> edition, vol 1, copyright @2012, 804 P
7. Prashanth Rawla, epidemiology of prostate cancer, world J oncol. 2019 April, PMID: PMC 6497009
8. Dr T. Sreekumar. *Ashtangahridayam sutrastanam*, vol 1 cp12/63, publication department harisree Hospital Thrissur, 308P
9. Dr T. Sreekumar. *Ashtangahridayam sutrastanam*, vol 1 cp 12/ 1, publication department harisree Hospital Thrissur, 261 P
10. Dr Ramakrishna sharma and Vaidya Bhagavan Dash, Caraka Samhita Vimana stana, vol 2 cp 5/7-8, chowkamba Sanskrit series office, reprint 2015, 174P
11. P M Govindan Vaidyar, Ashtanga hridayam Nidana stana, cp 16/27, devi book stall kodungallur- 16<sup>th</sup> reprint, July 2013, 294 P
12. Dr T. Sreekumar. *Ashtangahridayam sutrastanam*, vol 1 cp12/64-65, publication department harisree Hospital Thrissur, 308P
13. Dr T. Sreekumar. *Ashtangahridayam sutrastanam*, vol 1 cp11/15, publication department harisree Hospital Thrissur, P 248



HEB

**Journal of Research in Indian Medicine**  
An Official Publication of Bureau for Health & Education Status Upliftment  
(Constitutionally Entitled As Health-Education, Bureau)

JRIM

## A Conceptual Study on Prostatic Disease and Its Ayurvedic Management

Dr Smrithy P R

Final year PG scholar, Department of Kayachikitsa, Government Ayurveda College Tripunithura, Kerala

Dr Asha Karunakaran K

Associate Professor, Department of Kayachikitsa, Government Ayurveda College Tripunithura, Kerala

[Email Id: serviceheb@gmail.com](mailto:serviceheb@gmail.com) \*

### Abstract

A momentous number of men over 50 years of age suffer from prostatic diseases. The prostate gland is a male gland situated at the base of the urinary bladder and around the beginning of the urethra. Benign prostatic hyperplasia (BPH) is the most prevalent type of prostatic illness, characterized by an enlarged prostate that compresses the urethra and irritates the bladder walls, interfering with proper urination. There are two warning signals to indicate the possibility of prostate disorder. The first is the interference with the passage and the second is the recurrent voiding during the night. In modern medicine, the management of BPH is either by conservative treatment using drugs (e.g., hormonal therapy, chemotherapy, etc.) or through a surgical approach (e.g., open prostatectomy, transurethral resection of prostate-TURP, cryotherapy, etc.)<sup>1,2</sup>. In old age, surgery is associated with complications like postoperative morbidity, impotence, and retrograde ejaculation<sup>3</sup>. The pathology can be correlated with *sanga of mutravaha srothas*. Considering it as *apana vaigunya*, *vasti*, *avagaha* etc can be performed. Concepts like *sopha*, *antervidradi* also can be taken here. Treatment based on the above provides at least symptomatic relief. Here *yukti pramana* is the base for all these concepts. Proper use of *nidana panchaka* and treatment according to the *lakshana* will give good results. *Vasthi* is one of the *trimarma*, and the illness it brings on comes under *madhyama rogamarga*. BPH leads to derangement in the normal function of *Vasthi* and improper voiding of urine from *vasthi*.

Key words: Benign prostatic hyperplasia, *Mutra vaha srothas*, *Apana vaigunya*, *Sopha*, *Antar vidradi*.

### Access this Article Online

Website: <a href="http://heb-nic.in/jrim-issues/">http://heb-nic.in/jrim-issues/</a>	Quick Response Code:
Received on 27/05/2023 Accepted on 31/05/2023 © HEB All rights reserved	

## Introduction

Prostatic diseases in one form or another affect a sizable portion of the male population over 50 years of age. The prostate is an accessory gland of the male reproductive system that lies in the lesser pelvis below the neck of the urinary bladder behind the lower part of the pubic symphysis and upper part of the pubic arch and in front of the ampulla of water with an inverted cone shape. Age and change in hormones play a major role in the causation of disease.

The spectrum of prostatic disorders includes prostatitis, benign prostatic hyperplasia (BPH), prostatic cancer, etc. According to epidemiological studies conducted on BPH in India, the incidence rate for benign and malignant prostatic hypertrophy is 92.97% and 93.3%, respectively<sup>4</sup>.

Prostatitis is an inflammation of the prostate gland that presents as several syndromes with varying clinical features. Men with prostatitis typically have persistent pain between the scrotum and rectum that may also occur with urination and it may be accompanied by urgency and frequency of urination and painful ejaculation<sup>5</sup>. Inflammation can be due to an infection as well as other various causes.

BPH is a common condition in men above 50 years of age and is characterized by a non-malignant enlargement of the prostate resulting from excessive cellular growth of both glandular and stromal elements of the gland. The clinical features of BPH include incomplete emptying, increased frequency, intermittency, weak stream, and nocturia<sup>6</sup>.

Prostate cancer is one of the significant causes of death in elderly men and is one of the most common cancers originating from an enlarged prostate. In the beginning stage, there won't be any clinical features<sup>7</sup>. A timely diagnosis of prostate enlargement is important to stop its progression towards cancer. These can be mainly assessed by digital rectal examination.

Every issue associated with prostatic illnesses affect urine flow, such as obstruction symptoms, storage symptoms, voiding symptoms, consequences, etc.

*Ayurveda*, the science of life, addresses every part of the human body, including its social, mental, and physical aspects. The accurate and methodical evaluation of *dosha*, *dushya*, *srothas*, *nidana*, *lakshana*, *upasaya*, and other factors has been proven to be extremely relevant in both diagnosing and treating diseases.

BPH is clearly recognised as a urogenital disorder, i.e., *mutravaha srothodushti vikara*, based on its location and symptoms. *Ayurveda* has a great role in urogenital disorders. Due to the position of the prostate, structural changes in the gland will lead to obstruction of the urethra again leads to *sanga* of *mutra vaha srothas*. So *apana vata* will get affected, leading to symptoms related to *mutra pravrti*. These changes are the outcome of structural and functional adjustments.

## Objectives

- 1) To explore and identify concepts of BPH in *Ayurveda* keeping in view of preventing BPH
2. To state importance of concepts of *Ayurveda* in the study.
3. To elaborate scope for research in such concepts of *Ayurveda*
4. To develop standard protocol to help physician for easy access

## Ayurveda and prostate

None of the *acharyas* make any reference of prostate-related illnesses. We can therefore consider prostatic disease to be an *Anukta vyadhi*. The disease does not need to be named because it is considered under *anukta vyadi*<sup>8</sup>. The site of the disease is the prostate, which is near to *vasti*, the *vata sthana*<sup>9</sup>. *Karma* of *vasti* is the collection and voiding of urine properly which is carried out by the *apana vata*. Here, an enlarged prostate puts pressure on the *vasti*, which in turn impairs *apana* and causes a difficulty with the *mutra's nishkramana*. *Mutra vaha srothodushti lakshanas*<sup>10</sup> like

*atibadha*, *alpalpa pravrti* of *mutra* can be correlated with incomplete and intermittent voiding of urine. According to *acharya vagbhada ruksha*, *guru anna*, *vega udheerana dharana*, *yana yana*, *asana*, *chankramana*, etc are the *nidana* for these *apana dushti*<sup>11</sup>. which leads to the manifestation of diseases related to *mutra*. All these *nidanas* can be correlated with increased consumption of junk food, continuous sitting (sedentary lifestyle), improper sexual life, etc. This *apana vaigunya* is the main cause for *lakshana* like *sanga* of *mutra vaha srothas* which leads to all the associated symptoms. So, the correlation of prostatic disorders with *apana vaigunya* makes sense.

Although it can be challenging to pinpoint the disease's specific correlation in *Ayurveda*, the symptoms can be linked to *mutravaha srotho dushti lakshana* (connected to a *rodha* of *mutra*). Understanding the disease based on *lakshana* is much more useful than searching for exact correlations.

As the site is related to *vasti* and *lakshana* is a problem is with *mutra nishkramana*, it can also be correlated to *mutraghata rogas* such as *vata kundalika* and *vatshteela*. In the case of BPH, there is an enlargement in prostate, which leads to distention of urinary bladder which makes it palpable. It can be correlated to *vatakundalika* because of the presence of *gati sanga* in *mutra* and also due to the distention of bladder. Because of the obstruction of urine by *vata* and the presence of tender and elevated mass it can also be correlated to *vatashteela*.

Hyperplasia can also be correlated with *sopha* (*utseda* and *samhata* of prostate gland), *vidradi* due to its enlarged nature. The aim of *chikitsa* is to provide relief to the patient, i.e., pacifying the *dosha* mainly *apana vata*, strengthening of urinary system, and relieving the symptoms of urinary system. For that assessment of patient based on *nidana*, *dosha* involved, *lakshana* etc. are essential. So, treatment can be done by considering the nature of *Prakriti*, site of disease, and specific etiology<sup>12</sup>. Here *prakriti* changes according to the patient to patient. The specific reason here is hyperplasia i.e., enlargement of the organ.

Even though there is no exact correlation we have a wide range of options i.e., concepts like *mutraghata chikitsa*, *gulma chikitsa*, *sopha chikitsa*, *vidradi chikita*, etc can be applied here according to *yukti* of *vaidya*. *Yukti vyapasraya chikitsa* one among *thrivida chikitsa* shows significant role in treating *anukta vyadhi's*. So, the physician can manage the disease based on predominant *dosha* and *lakshanas*.

The majority of the symptoms are *kapha-vata*-predominant, thus any therapy methods that calm *kapha* and *vata* both inside and externally can be used.

*Vasti* with *pippalyadi anuvasana taila* can be thought of as advantageous in this situation due to the existence of *viguna apana*. *Avagaha* with *vata samana* medicines are also beneficial in this situation.

When considering hyperplasia as *sopha*, *kleda hara* medications exhibit excellent results. The *marga* for *kleda nirharana*<sup>13</sup> is *mutra*. Therefore, *sopha hara vasti* and *sopha hara* medications work well. One of the key medications used frequently in this situation is *dasamoola hareetaki lehya*, which functions as *kapha vata samana vatanulomana srothovishodhana* in action. Other effective alternatives include *pathya punarnavadi kashayam* and *punarnavadi kashayam* etc.

Considering as *antar vidradi*, *varanadi grtha* in *brhatyadi Kashaya* gives good results. *Varanadi gana* is best for *antar vidradi*. Here *brhatyadi Kashaya* is the vehicle for the action in *vasti*.

After taking the stage and severity of the condition into consideration, *avapeedaka sneha pana*, a remedy for *mutra dosha*, can be utilised appropriately as *shodhananga* or as *samana* by consuming *grithas* such *vastyamayantaka gritha*, *virataradi ghritha*, *varanadi ghritha*, etc.

Although there are many possibilities, the proper and exact application of *nidana panchaka* by the use of *yukti vyapasraya chikitsa* should be given top priority. Elaborating *nidana panchaka*, *nidana* is *apana vaigunya kara ahara* and *vihara*, *purva rupa* and *rupa* are *mutra vikrti*, *samprapti* is *sanga* of *mutra vaha srothas* by *viguna apana* as a by-