



AYURVEDIC MANAGEMENT OF SHITAMEHA (PHOSPHATURIA): A SINGLE CASE STUDY

Afroja Yeasmin Akhtar Roji ^{1*}, Abichal Chattopadhyay ²

¹ Ph.D. Scholar, Department of Samhita and Sanskrit, Banaras Hindu University, Varanasi, Uttar Pradesh, India

² Professor and HOD, Department of Ayurved Samhita and Siddhanta, Institute of Post Graduate Ayurvedic Education and Research, Shyamadas Vaidya Shastra Peeth Hospital, Kolkata, West Bengal, India

*Corresponding Author Email: rosyafroz89@gmail.com

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ABSTRACT

Classically it has been mentioned that Bahudrava kapha and Bahuabaddha meda are the causative factors in the disease prameha. Sedentary lifestyle is another causative factor of prameha now days. If prameha left untreated then it turns into Asadhya (incurable). Shitameha in terms of Phosphaturia is usually applied when the phosphate becomes visible as turbidity, deposited or as crystals visible microscopically. Here Ayurvedic management of Shitameha has been described. A five years male child had come to outpatient department with complaint of frequency of micturition (10-14 times) in a day with pain in glance penis during micturition, loss of appetite, muscle pain, turbid urine and site of micturition became white after sometimes along with attraction of ants towards it. He was treated with Deepan-pachan (digestion and metabolism enhancing) medicine such as Panchkola churna and tablet Amalaki (*Emblica officinalis* Gaertn), Arjuna (*Terminalia arjuna*), Punarnava (*Boerhavia diffusa* Linn) etc. with mutravirajaniya as (urine coloring drugs) herb (Padmapatra Swarasa- *Nelumbo nucifera* Gaertn) as Anupana (vehicle). He has been advised to follow some pathya-apathya (wholesome and unwholesome diet). After three months, significant result was noted. Phosphate and calcium were reduced from 8 mg/dl to 5 mg/dl and 12.5 mg/dl to 10.1 mg/dl respectively. Hence, it was concluded that ruksha (rough) and laghu (light) guna (attribute) play an important role to get relief from Shitameha.

Keywords: Prameha, Shitameha, Deepan-pachan, Mutravirajaniya, Pathya-Apathya.

INTRODUCTION

The term Phosphaturia ordinarily means presence of phosphate in urine. Normally 1 to 5 gm of phosphate excretes through urine per day. The amount depends principally on dietary protein. Phosphaturia is usually applied when the phosphate becomes visible as turbidity, deposited or as crystals visible in microscopically. Phosphate are less soluble in alkaline than the acidic solution and any condition causing an alkaline urine favoring precipitation¹.

Phosphaturia can be considered in Ayurveda under the broad spectrum of prameha (obstinate urinary disorder including Diabetes mellitus). Due to the simultaneously vitiation of tridosha, twenty types of Prameha as well as innumerable other diseases can be produced. Bahudrava Shleshma is the main dosha and Bahuabaddha meda (fat), mamsa (muscle tissue), sariraja kleda (body fluids), Vasa (muscle fat), majja (bone marrow), Shukra (sperm), Rakta (blood), lasika (lymph), rasauja are the dushya. Among them first four dhatu are increased in quantity and decreased in viscosity; remaining dhatus are of increased quantity only. Bahudrava Shleshma (aggravated kapha caused by intake of nidana-causative factors) spread all over the body and it combined with meda (Bahuabaddha meda) due to their identical quality. Vitiated Shleshma located in basti Pradesh (urinary bladder including kidney) afflicting the meda, mamsa and kleda, produce kaphaja prameha. Shitameha is one type of kaphaja prameha².

Shitameha (Phosphaturia) as disease has been described in Ayurvedic compendium along with its treatment. Appropriate Sanshodhana (elimination) and Sanshamana (alleviation) therapy

are indicated for prameha but diet also plays important role for the production of diseases. Prameha is also produced from Ajirna (indigestion)³.

Ayurvedic management is generally given with drugs like-digestive drugs, application of Sanshodhana therapy in terms of mutravirajaniya⁴ (the drugs which eliminate the doshas from the urine) and mutra-virechaniya and avoid of Apathya (unwholesome food) that acts on the root of pathology of prameha and breaking down the pathogenesis associated with fruitful result.

Case history

History of present illness

A male patient aged about 5 years (registration number-AYUR/RG 1900005656; date-19/03/2019) visited outdoor patient department of Basic principle of I.P.G.A.E and R at S.V.S.P, Kolkata, presenting with complaint of frequency of micturition 10-14 times within 12 hours in day times associated with pain in glance penis during micturition, loss of appetite, weakness, cloudy urine, site of micturition became white after sometimes of micturition and lots of ants were attracted to the site of micturition in spite of maintaining proper cleanliness of urinal (according to the history of patients party), last three years. This type of episodic symptoms was appeared in every 15 days interval for 1 year. For these complaints, patient had undergone treatment by a physician and was provisionally diagnosed as Phosphaturia with report of urine culture and blood where present of crystal triple phosphate in urine and change in the specific gravity of urine, serum phosphate and serum calcium were elevated. There

was no history of burning micturition and itching sensation during micturition.

Past history: No history of UTI, fever etc.

On examination

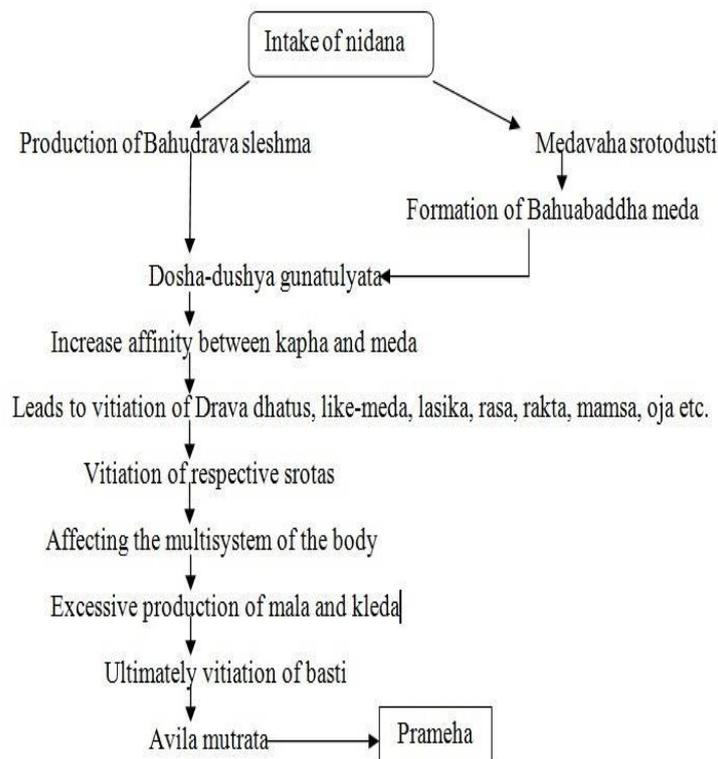
Glance penis coated with whitish substances and mild swelling present at glance penis. Pallor, jaundice and edema etc. were not present. Body temperature was 97.3⁰ F. Blood Pressure, respiratory rate, pulse all was within normal limits. Turbidity was also present in urine.

Investigation

Relevant objective parameters or laboratory investigations of before and after treatment have been described in the Table 3.

RESULT AND DISCUSSION

Classically it is mentioned that, Bahudrava Shleshma (aggravated kapha caused by intake of nidana) and Bahubaddha meda are the causative factors in the pathogenesis of Shitameha⁵. The pathogenesis of disease in the schematic diagram has been showed as follows



Bahuso (frequency of micturition), Madhura (sweet in nature) and shita (coldness) urine are the sign and symptoms of shita meha⁶. The term phosphaturia ordinarily means presence of phosphate in urine. Normally 1 to 5 gm of phosphate is excreted through urine per day. The amount depends principally on dietary protein. Phosphaturia is usually applied when phosphate became visible as turbidity, deposited or as crystals visible in microscopically. Phosphate are less soluble in alkaline than the acidic solution and any condition causing an alkaline urine favoring precipitation. Phosphate is moved across the apical membrane of the cell, against a steep electro chemical gradient (mainly due to the negative intracellular pressure). Extracellular volume expansion increased the filtrated phosphorus load and dilutes the luminal concentration of phosphorus resulting phosphaturia. Amorphous phosphate crystals (calcium and magnesium phosphate) are found in urine with pH 6.5. The formation of calcium phosphate crystal can be caused by combination of factors including decreased urine volume, urine alkalization (increased pH) or diet reached in calcium. They are also found in individual with calcium levels that are too high following prolonged immobilization, overactive parathyroid glands or bone metastasis⁷. Hence, Shitameha in terms of Phosphaturia is presenting with the Bahudrava

(frequency of micturition), Madhura (sweet-diagnosed with pipilikavisarpana i.e. attraction of ants toward the urine-anumana pramana-inference), shita (absence of burning sensation during micturition) in nature⁸.

This patient was treated on the line of treatment of Santapanaja vyadhi (diseases due to over nutrition) in terms of prameha. Serum phosphate level varies by as much as 50% on a normal day due to intake of some specific food such as dairy products, excessive meat, legumes etc. Ajirna (indigestion) is the one of cause of prameha. Panchkola churna was administered for Deepan and Pachana (digestion and metabolism enhancing) to correct Mandagni (diminution of Agni)⁹. Apart from the Deepan-pachana drug, tablet form of Punarnava, Amalaki and Arjuna has been administered for three consecutive months. Checkup was done in regular interval of one month. After administration of drug for one month there was relief in symptoms partially. Laboratory investigations were repeated only after complete relief from sign and symptoms. The treatment schedule of patient (continuing for three months) has been depicted in the following Table 1.

Table 1: Treatment schedule

Date	Medicine	Dose	Anupana	Time
19/03/2019 to 10/04/2019	1. Panchkola churna 2. Tab-Punarnava	10 gm 1 tab	1. Dissolved in one-liter boiled water -Luke-warm form. 2. Padmapatra Swarasa	Consumed it within 12 hours.
11/04/2019 to 10/05/2019	1. Panchkola Churna 2. Tab-Punarnava Tab-Amalaki	10 gm 1 tab 1 tab	1. Dissolved in one-liter boiled water - Luke-warm form 2. Padmapatra Swarasa	Combinedly one dose Twice daily
11/05/2019 to 18/06/2019	1. Panchkola churna 2. Tab-Amalaki Tab-Arjuna Tab-Punarnava	10 gm 1 tab 1 tab 1 tab	1. Dissolved in one-liter boiled water - Luke-warm form 2. Padma Patra Swarasa	Combinedly one dose Twice daily

The drugs which had been selected for the treatment were due to its cost effectiveness. Now a days, many compound Aushadhi (medicine prepared by herbs) and Rasa-Aushadhi (herbo-mineral drugs) are being used but if we administered the single herbs in combined or single form according to their pharmacodynamics and pharmacokinetics then the treatment will be more effective. Here Amalaki, Arjuna and Punarnava were used for the treatment. Therefore, said drugs have been mentioned in Kaphaja prameha nashaka yoga and having the laghu (light) and ruksha (dryness) guna (attribute) along with vata-kapha nashaka activity. By ruksha guna (roughness) it may help in reduction of Bahudrava Shleshma and in reduction of vitiated meda and kleda. Mutraviranjaniya means excretion of doshas from the mutra. Padma has laghu guna and kapha -vata hara property. When it is consumed as Anupana (vehicle), it accelerates the action of other drugs. Arjuna has been mentioned in Charaka Samhita for combating kaphaja prameha¹⁰ and as per Ashtanga Hridaya it is used for mutraghata (retention of urine)¹¹. According to Bhaishajya Ratnavali it is used for Bahu

mutra. Arjuna poses glycosides, alkaloids, terpenoids, flavonoids etc. by which its acts against diabetes to regenerate the damaged β cells and inhibits the glucose transport across the intestine by inhibiting sodium glucose co-co-transporter 1. It has laghu (light) and ruksha (roughness) guna (attribute), kapha-pitta hara property. Ruksha is one of the essential vata guna¹² which performs the action of shoshana karma. The actual implication of the term shoshana is the act of absorption mechanism. In broad perspective shoshana may take as the exchange of various materials in between the cells and respective environment. Laghu guna an essential vata guna¹³ and also the conjugate of guru guna and accountable for langhana i.e. the reduction activity of body mass. Application of langhana may be described as some cellular component which produces inhibitory activities on the growth factors. Growth, though an essential cellular property requires some definite inhibitory regulation to sustain the state of physiological homeostasis. Description of Drugs has been depicted in the Table 2.

Table 2: Information about drugs

Name of the drugs	Scientific name	Company	Dosha karma ¹⁴	Guna ¹⁵
Tab-Amalaki	<i>Emblca officinalis</i> Gaertn.	Himalaya	Tridosha Shamaka	Laghu, ruksha, shita guna
Tab-Arjuna	<i>Terminalia arjuna</i>	Himalaya	Mainly Kapha-vata shamana; tridosha hara	Laghu, ruksha guna,
Tab-Punarnava	<i>Boerhavia diffusa</i> Linn	Himalaya	Ruksha, Vata-kapha nashaka	Laghu, ruksha guna,
Padmapatra Swarasa	<i>Nelumbo nucifera</i> Gaertn.	Mutra viranjaniya Maha kashaya.	Kapha pitta- hara	Laghu, snigdha, Picchila,
Panchakola ¹⁶	1. Pippali - <i>Piper longum</i> Linn, 2. Pippali Moola (roots of pippali), 3. Chavya - <i>Piper chaba</i> Hunter, 4. Chitraka - <i>Plumbago zeylanica</i> Linn 5. Nagara - <i>Zingiber officinalis</i> Rose.	Deepaniya yavagu (gruel which stimulates digestion)	Kapha-pitta nashaka, Deepan-pachana	Pippali and Pippalimula -Laghu, Snigdha, Tikshna; Chavya -Laghu, Snigdha, Tikshna; Chitraka -Laghu, Ruksha, Tikshna; Nagara -Laghu, Ruksha, Snigdha;

Pathya and apathya (wholesome and unwholesome diet) plays most important role in the field of treatment. So, intake of milk, Payasa (a type of milk preparation), kshira (gruel preparation of

milk), Swapna Sukha (indulgence in sleep), dairy products and red meat etc. were stopped during therapy.

After treatment of three consecutive months results are follows

Table 3: Investigation reports of before and after treatment

Parameters	Before treatment (20/03/2019)	After treatment (18/06/2019)
Phosphate	8 mg/dl	5 mg/dl
Serum calcium	12.5 mg/dl	10.1 mg/dl
Urea	27.5	24.3
Creatinine	1.34 gm/day	1.02 gm/day
FBS	93.4 mg/dl	99.3 mg/dl

Report of urine REME		
Transparency	Hazy	Slight hazy
pH	7.4	6.3
Specific gravity	1020	1015
Crystal Amor phosphate	+++	Nil

Symptoms relief = 100%



Before Treatment



After Treatment

Symptoms relief = 99%

CONCLUSION

There is no direct correlation between Phosphaturia and Shitameha (subtype of Kaphaja prameha) as such in Ayurveda. But seeing the clinical features of patient it can be compared with Shitameha. Medadusti (vitiation of fat) is an essential phenomenon in the pathogenesis of Shitameha. Arjuna, Amalaki and Punarnava have been mentioned in kapha prameha nashaka yoga. These drugs also have laghu and ruksha guna. Both ruksha and laghu guna helps to reduce kleda and Bahudrava Shleshma by Shoshana karma. Hence, from this study it can be concluded that laghu and ruksha guna have the capability to combat Bahuabaddha meda and Bahudrava Shleshma.

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