A STUDY TO DESIGN PROSPECTIVE ALGORITHMS OF DISEASES BY SCREENING VARIATIONS IN SRISHTAMOOTRATA

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ABSTRACT
The concept of health is discussed in various ways in different streams of medicine. But Ayurveda has described health in a broader way. The *dhatusamyalakshana* mentioned in Charaka Samhitha Vimanasthana serves as a perfect definition of health. It reflects the proper functioning of all systems of body together with mind. *Vata mutra pureesha retasam mukti* (proper elimination of flatus, urine, faeces, semen or menstrual blood) is one among the 18 factors in *dhatusamya lakshana* mentioned in Charaka Samhitha. Here the *lakshana- srishtamootratwam* (proper elimination of urine) is selected and its important variations are studied. If there is any defect in proper elimination of urine, it may indicate any present disease or upcoming pathology. The important variations of *srishtamutrata – bahumootratha, krichramootratha and moootra-apravrithi* are studied in this perspective & algorithms of probable diseases indicated by these symptoms are prepared.

Keywords: bahumootrata, krichramootrata, moootra-apravrithi, algorithm

INTRODUCTION
Acharya Charaka in *Vimanasthana* explain *dhatusamya lakshana* which serves as a comprehensive definition of health comprising 18 symptoms such as absence of any discomfort, appearance of normal voice & complexion, nourishment of body, proper strength, desire for taking food, appetite for food during meal time, proper digestion of the food at the proper time, getting sleep at the appropriate time, pleasant sleep & awakening, absence of dreams indicating morbidity, proper elimination of flatus, urine, stool & retas, un-impairment of mind, intellect and sensory faculties and association of all healthy symptoms which are relevant in the assessment of health status.

If *dhatusamyalakshana* indicate health, then deviations expressed as signs & symptoms are indicators of a future disease or underlying pathology. Here the *lakshana- srishtamootratwa* (proper elimination of urine) and its variations are studied.

Aim and Objectives
1) To design a prospective algorithm for early diagnosis of disease by noting down the variations like *bahumootrata, krichramootrata and moootra apravrithi*
Materials and Methods
Literature search – Review of literature regarding variations of proper elimination of urine and the symptoms like bahumootrata, krichramootrata and mootra-apravritti are collected from classics, journals and related research works. The collected data was arranged, analysed and presented in the form of an Algorithm2.

Review of Literature
Srishta Mootratwam
Proper elimination of urine is considered as arogyalakshana. The main symptoms related to mootravahasrotas are atipravritti, apravritti, krichramootrata, dahamootrata and sarujamootrata. Here we selected Bahumootrata, Krichramootra, Mooatra apravritti as they are the most relevant symptoms in the clinical aspect. Before going to the variation, normalcy of moostra, mootrapravartana and mootravega is to be studied. Moostra is the one of the major waste products of body. Its main function is kledavahana5. The rasa of normal urine is katu & lavana. It is drava,sara and laghu. It is vishada i.e. transparent in nature. Its parimaana is 4 anjali. Moostra6 is the liquid portion of Aharakitta, which is brought to Vasti through mootravahasiras. The vasti is continuously getting filled by mootra through mootravahanaadi. The mootra is passed out by the Apanavayu which produces vega.

The symptoms of increased quantity of urine5 (mootravrdhii) are pain in the bladder and sensation as if one has not passed urine, even after passing urine. The symptoms of decreased quantity of urine6 (mootrakshaya) include scanty urine, dysuria ,pain in the bladder ,abnormal colour or blood stained urine, thirst and dryness of mouth. Mootravega (micturition reflex) is one among Adharameeya Vega. The symptoms of suppression of urge for micturition7 include pain in the bladder & phallus, abdomen, mootrakrichra, bending of body, distention of lower abdomen. Mootravegarodha become the most important causative factor for Mootraghata, mootrakrichra, Amsrari etc

Abnormality of Urine: Abnormality of urine can occur in different ways i.e. change in the physical characteristics or problem with proper production of urine, its elimination etc. The abnormality in colour and appearance includes arunam (redness), bhasmodakabham (ashy appearance), haridram (yellowish), etc. The abnormality in character and consistency include pichilam (slimy), saraktha (with blood) etc. The abnormality in smell include bastagandham (smell of goat), pootigandha (foul smell) etc. The abnormality in quantity like alpa (diminished), prabhoota moostra (increased). The abnormality in micturition includes apravartana (urine retention), daahavati (burning micturition) krichraam (painful micturition) etc. Here we are taking three lakshanas due to clinical importance relating to Srishtamoostra
• Bahumootrata
• Krichramootrata
• Mootra-apravritthi

RESULTS & DISCUSSION
Bahumootrata: Bahumootrata is not an independent disease. It mostly occurs as a symptom. Bahumootrata (polyuria) is a condition where the body urinates more than usual and passes excessive or abnormally large amounts of urine. Prabhootamootratwam is the main symptom of Prameha. It can be seen in other diseases like Amajwara, Amavata, Purvaroopa of Arsas, Sahaja arsas, Mamsadhatugata jwara, Ajeerna8 etc

When patients come with symptom of bahumootrata first evaluate urine for organoleptic examination. If avilathwa (turbidity) is present, Prameha may be the diagnosis. If a patient presents with fever, increase in salivation, tastelessness, heaviness of body amatva should be understood and chances of getting amajwara is suspected. If along with these symptoms, pain and swelling over joints are present then Amavata may be the diagnosis. If a patient comes with constipation or loose motion and cutting pain while defecation, per rectum examination should be done, if pile mass (which is present from birth) is present, Sahaja Arsas may be the diagnosis. If pile mass is not present, it may be indicative of purvaroopaa of Arsas. If the jwara patient is having tiredness, muscle cramps, convulsions it may be indicative of Mamsadhatugata jwara. If patient is having bahumootrata or non-elimination of urine along with faeces, associated with
abdominal distention and weakness Ajeerna may be the diagnosis.

1.1) Algorithm of disease from the symptom Bahumootrata

Krichra Mootrata
Difficulty in passing urine, usually associated with pain is termed as krichramootrata. Krichramootrata occurs as a swaroopa in Mutrakrichra (independent disease) as well as a symptom in other diseases. According to Susruta and Charaka, mutrakrichra is of 8 types, Vagbhata 4 types.

The characteristics of urine (colour) and the associated symptoms helps in the diagnosis of types of mutrakrichra. In Abhigataja type, history of trauma is present. In Asmarijanya and Sarkarajanya Mutrakrichra, presence of Asmari is there.
1.2) Algorithm of disease from the symptom Kritchramootratha (independent disease)

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passes urine with difficulty &amp; small quantity repeatedly</td>
<td>VATIKA MUTRAKRICHRA</td>
</tr>
<tr>
<td>Urine is deep yellow or red coloured with semen</td>
<td>PAITHIKA MUTRA KRICHRA</td>
</tr>
<tr>
<td>Burning sensation</td>
<td></td>
</tr>
<tr>
<td>Urine white, slightly hot &amp; heaviness in scrotum, penis &amp; bladder</td>
<td>KAPHAJA MUTRAKRICHRA</td>
</tr>
<tr>
<td>Urinary channel traumatized along with severe pain</td>
<td>ABHIGHATHAJA MUTRAKRICHRA</td>
</tr>
<tr>
<td>Adhmana and shoola caused by suppression of faeces</td>
<td>SAKRT MOOTRAKRICHRA</td>
</tr>
<tr>
<td>Feels darkness, passes urine of various colours</td>
<td>SANNIPATA MUTRAKRICHRA</td>
</tr>
<tr>
<td>Cardiac pain, tremor, colic pain, fainting</td>
<td>SARKARA JANYA MUTRAKRICHRA</td>
</tr>
<tr>
<td>Presence of asmari</td>
<td>ASMARI JANYA MUTRAKRICHRA</td>
</tr>
</tbody>
</table>

*Kritchramootratha* can occur as a symptom of other disease too. If a patient presents with the symptom of *krichramootratha* (difficulty in passing urine), the first thing to be noted is his bladder habit. If he habitually suppresses the urge of micturition, *krichramootratha* can occur. In *Pakwasayavata kopa*, *vasti* being an organ of *pakwasaya* and *vata* cause *sanga* there cause difficulty in passing urine. In *gulma*, *vasti* is mentioned as one of the *sthanas*. Here persistent *vatakopa* results in an invisible abnormal mass that may harden and form a tumour, as a result *krichramootratha* may occur. If he is having habitual constipation, we should go for per rectal examination. Presence of pile mass compels physician to diagnose *Kaphaja arsas* based on its shape. *Arsas* may develop into complications like *Udavartha*. Again, *krichramootratha* presents as a symptom. Here the underlying pathology may be intestinal or rectal issues which compresses the urinary bladder and thereby causing difficulty in passing urine.

Next *krichramootratha* can occur as a symptom associated with *mootravahasrotas*. Here the underlying pathology may be any obstruction in its pathway due to mass, inflammation etc. If there is distention of blad-
der and the smell of urine resembles that of goat’s urine, the probable diagnosis may be Asmari poorvarupa. In Vatikaasmari also krichramootrata may occur as rookshatwa (dryness) is the main reason here and the amount of urine will be less. If the patient is having pain in the bladder and swelling of scrotum, ask for whether there is habitual suppression of flow of semen, because in Sukrashmari, krichramootrata is present. In Mutrasada and Usnavata, krichramootrata with burning sensation may present. Here the colour of urine along with associated complaints may distinguish them. In Vitvighata, rectourethral fistula may be present, so more urine goes through fistular path and passes with stool thereby causing difficulty.

1.1) Algorithm of disease from the symptom Krichramootrata
**Mootra Apravarthi**

*Mootra apravartti* can occur as complete or partial. It may occur either due to defect in production or due to obstruction in its pathway. It can be due to problem with higher centres of brain, kidney etc or due to any organic lesion in its pathway.

1.4) Algorithm of disease from symptom Mootra apravartti
In Mahashwasas and Chinnaswasas, upper brain centres controlling micturition may get affected resulting in Apravrtti of Mutra. Here the condition is fatal. In Vatikatisara and Amatisara, more water content passes through anal passage mixed with faeces. So, urine production becomes less. Here the nature of stool distinguishes two atisara. In Udara more fluid accumulation occurs beneath skin on abdominal cavity. So, urine formation will be less. Here the nature of raji (appearance of network of veins over abdomen) distinguishes Vatikodara and Badhodara. In Gulmapurvarupa, suppression of flatus, urine, faeces may present resulting in Apravrtti. In Pureesaja anaha distension of abdomen may compress bladder resulting in Apravrtti. In Ajeerna either Apravrtti or Atipravrtti of urine, faeces may occur. In Prathyashteeala lump like mass present in abdomen, thus the pathway is obstructed. In Vatikarsas also pile mass may cause compression.

**CONCLUSION**

Disease or Roga is considered as the variation from the normal state of health. Both disease and health are expressed using the same factors such as doshas, dhatus and malas. Application of this principle is evident when we observe the narrations seen in nidana and chikitsa sthana. Further, exploration is needed in this line for simple yet better understanding and application of basic principles relevant in the contemporary scenario of “Newer diseases and health challenges”. Algorithm provides an easy way of diagnosis. This is an era where people with mild disease are being exploited by costly investigations. Here algorithm paves way for a first hand simple investigation method.

The algorithm of Srishtamootrata gives an insight into the variety of possible progressions of a single symptom to various ailments. Ayurveda puts forth the prime objective of prevention of disease along with curative aspect. The acceptance of this concept is becoming steadfast in current scenario worldwide. The constructed Algorithm encompasses this concept where which the development of the disease is being blocked by treating the initial symptom thereby emphasizing the true spirit of the objectives of Ayurveda.

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