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CONCEPTUAL AND PRACTICAL UTILITY OF JALA – A PRAGMATIC APPROACH

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ABSTRACT

"Oushadham janavi toyam vaidyo narayano harih" Water is the solvent of life and the major constituent of the human body. The ancient literature of Ayurveda has explored the importance of water in human body and explains elaborately about different types and qualities of water from different sources and variation in their qualities according to season , region etc. Rain water is considered as amrita in Ayurveda as it have properties like jeevaniya, stamabhana, kledana etc. It also mentions the different qualities of water based on avastha (ushna/Shritasheeta/sheeta) and conditions which may arise due to excess drinking of water and diseases in which minimal quantity of water to be taken by the patient. By using different samskaras the water processed with different medicinal herbs or substances are indicated in many diseases as a therapeutic measure also which states the importance of water in treatment aspect too.

KEYWORDS: Jeevaniya, sthambana, kledana, shrutasheeta, samskara

INTRODUCTION

Water is the solvent of life and is the major constituent of the human body. An adult human contains about 60% water (men 55-70% , women 45-60%)[1]. Ayurveda explains in detail about jala (water) in a separate varga called Jalavarga in all brihratrayi's. It gives elaborate explaination about different sources of water and their qualities, qualities based on place of origin and direction of flow water etc. Jala is considered to be best in ashwasana, sthambana, kledana [2] and best among anupanas as it is the yoni (root cause) for manifestation of all the rasas,sarvabhuta satmya and jeevanadi gunayukta[3].

"Shresthamudakam ashwasana sthambana kledananam"[2] Water if used judiciously, in an appropriate quantity it acts as nectar otherwise it acts as poison.

Qualities of good water[4]:

The water which is Odourless, Tasteless, Cold, Reduces thirst, Pure, Clear /transparent, Pleasant/good for heart, Light in nature is considered as good for consumption.

Lakshanas of jala not fit for use and jaladosha[4]**:**

1. The water which is covered with mud, shivala (green moss), hatha (jalakumbhika) straw and lotus leaves etc.
2. That which is not exposed to the rays of the sun, moon and air.

3. That which has developed an odour, colour or taste.

The water which is contaminated is likely to develop the following 6 defects relating to sparsha, roopa, rasa, gandha, veerya and vipakadosha.

Table No.1: Qualities of dushita (contaminated) jala[4]

S.N	Factors of defect	Qualities
1	Sparsha (touch)	Hardness, sliminess, hotness and a peculiar sensation in the teeth due to (cold)
2	Roopa (appearance)	Appearance of different colours due to mud, sand and moss.
3	Rasa (taste)	Development of taste
4	Gandha (odour)	Disagreeable odour
5	Veerya (potency)	Which produces thirst, heaviness, colic and expectoration of kapha
6	Vipaka (after taste)	Delayed digestion and gurgling

Diseases due to consumption of dushita / vyapannajala (contaminated water)[4]:

Shotha (oedema), panduroga (anaemia), twakroga (skin diseases), avipaka (indigestion), shwasa (dyspnoea), kasa (cough), pratishyaya (rhinitis), Shula (colic), Gulma (abdominal swelling), Udara (abdominal enlargement) and other serious disorders .

Methods for purification of contaminated water[4]:

1. Boiling over the fire.
2. Dipping red hot lumps of iron, sand or earth in the water.
3. Flavouring it with the flowers of Nagachampaka, Utpala, Patala etc.

Storage of good water[4]:

Water which has been kept in vessels of gold, silver, copper, bell metal, quartz or earth adorned with flowers and which has developed fragrance should be used for drinking.

Seven Jala prasadana dravyas (water cleansing agents) [4]:

Kataka (*strychnus potatorum)*, Gomedaka, Bisagranthi, Shaivalamula, Vastra (clothes), Mukta (Pearl) and Mani (Quartz).

Seven methods of cooling water[4]:

1. Pravatasthapana (keeping water in open air)
2. Udakaprakshepana (sprinkling of water)
3. Yastikabhramana (stirring with a stick)
4. Vyanjana (fanning)
5. Vastroddhrana (straining through a cloth)
6. Valukaprakshepana (putting in of sand)
7. Shikyavalambana (keeping it in a pendent bracket)

Table No.2: Classication of water based on different criteria

Si. No	Based on Origin[5]	Based on Desha[6]	Based on avastha[7]		
1	Antar	Janga	Am	Sh	Kevala

Types of Jala:

	iksha	la	a	eeta	
2	Bhouma	Anupa	Pakwa	Ushna	Oshadha siddha
3	-	Sadharana	-	-	-

Based on origin: Water is divided into rain water and terrestrial water. According to Ayurvedic classics the rain water is considered as best (Divyajala) and equated with that of Amrita. It is pure and is fit to consume. It is also called as Mahendrajala.

Properties and actions of rain water:

Table No.3: Properties of rain water according to different acharyas

	Charaka[8]	Sushruta[9]	Vagbhata[10]
1	Sheeta (cold)	Anirdishaya rasa (tasteless)	Avyakta rasa (imperceptible taste)
2	Shuchi (pure)	Amruta(nectar)	Sheeta(cold)
3	Shiva (benevolence)	Jeevana(enlivening)	Laghu(light)
4	Mrishta (pleasant)	Tarpana(satiating)	Mrishta(slightly sweet)
5	Vimala (clear)	Dharana(mainatains the body)	Amritopama(nectar like)
6	Laghu (light)	Ashwasana(invigorating)	Jeevana(enlivening)
7		Shramaprashamana (allys tiredness)	Tarpana(satiating)
8		Klamaprashamana (allys lethargy)	Hridya(good for heart)
9		Thrishnaprashamana (allys thirst)	Hladi (refreshing)
10		Madaprashamana (allys intoxication)	Buddhiprabhodaka(stimulate the intellect)
11		Tandraprashamana (allys drowsiness)	
12		Murchaprashamana (allys fainting)	
13		Dahaprashamana (allys burning sensation)	
14		Ekantatah pathyatama (always highly beneficial)	

Properties of rain water:

The properties of rain water change depending on time and place .The rain water while falling from sky on the earth comes in contact with Sun, Moon and Air and after falling on earth gets in contact with earth qualities like cold, heat, unctuousness and ununctuousness[8] .

The rain water derives any of the tastes according to the sthanavishesha (special locations) like river, natural lake, a tank etc and taste also depend on panchamahabhuta composition of earth on which it falls[9].

Taste of water based on pancha mahabhuta:

The taste of water varies according the predominant panchamabhouthik constitution of bhumi on which it falls.

Table No.4: Tastes of water based on panchabhouthik composition of bhumi[8]

Sl.No	Pradhana mahabhuta	Taste of water
1	Prithvi	Amla, lavana
2	Ambu	Madhura
3	Teja	Katu, Tikta
4	Vayu	Kashaya
5	Akasha	Avyakta rasa

The water avyakta rasa is said to be the best variety and recommended for usage in the absence of rain water.

Table No.5: Tastes of water based on soil [8]

	Colour of the soil	Taste of water
1	Shweta (White colour)	Astringent
2	Pandura (Yellowish colour	Bitter
3	Kapila (Brown	Alkaline

	colour)	
4	Ushara	Saline
5	Parvata from Mountains	Pungent
6	Krishna Black soil	Sweet

Types of rain water [5]:

A) The rain water is divided into 4 types

1. Dhara(rain water)
2. Kara (hail water)
3. Toushara(dew)
4. Haimavathi(snow water)

B) The rain water is divided into 2 types

1. Ganga
2. Samudra

Ganga usually falls in the month of aswayuja, these two are however subjected to the below test.

Testing of rain water[5]:

A lump of cooked shali (rice) , which is neither stale nor ill cooked , should be kept outside in a silver vessel while it rains; if the rice remains as it is (aklinna- decompose , avivarna- color change) after 1 murutha (48 minute) then it should be understood that ganga water is raining . If the water is having the properties opposite to above mentioned then it is Samudrajala (is raining) and is not suitable for drinking except in the month of ashwayuja (September – October) . **Properties of rain water based on Ritu (season) :**

Table No.6: Properties of rain water based on season

S.No	Name of the Ritu[9]	Qualities[9]
1	Hemanta	Snigdha (Unctuous), vrishya (aphrodisiac), baya (strength promoting) and guru (heavy) .
2	Shishira	Slightly lighter, alleviates vata and kapha
3	Vasanta	Astringent and sweet in taste, ruksha (ununctuous)
4	Greeshma	Ruksha (ununctuous)
5	Varsha	Guru (Heavy), Abhishyandi, Madhura (sweet) when new
6	Sharat	Thin, light and anabhishyandi

HAMSODAKA [11]:

The water formed in the sharat ritu which gets heated by sun rays during day time and cooled by the moon during night for many days continuously, which has been detoxified by the rays of the star Agastya which is pure and capable of mitigating doshas is known as Hamsodaka. It is neither abhishyandi (producing more secretions or moisture in the minute channels) nor dry such water is like amrita for drinking and other purpose.

Collection of rain water[4]:

1. Collected in clean and white cloth.
2. Collected from roof of a well-built building as it falls from terrace.
3. Collected in other clean vessels.

This should be used all the time and when unavailable the bhoumajala(water on the earth) is to be used specially that which is predominant of Akasha mahabhuta.

Classification of bhoumajala (terrestrial water) :

Table No.7: Classfication of bhoumajala(terrestrial water)[12,13]

S.No	Type of Water	Qualities	Action
1	Koupa (well)	Slightly alkaline,light	Deeepaka, pittala,kaphaghna
2	Nadeya (river)	Dry,light	Deepaka,lekhana,vatala (if it is madhura,Sandra ,guru then it acts as abhishyandhi and kaphakaraka)
3	Sarasa (natural lake)	Sweet and astringent in taste,light	Balya, thrushnaghna
4	Tadaga (artificial lake)	Sweet and astringent in taste , acrid in after taste	Increases vata
5	Vapi (tank water)	Alkaline and acrid	Vatkaphahara, pittala
6	Prasravana (spring)	Light	Kaphaghna, deepaka, hridya
7	Oudbida (fountain)	Sweet in taste	Pitta shamaka, avidahi
8	Chouthya	Sweet in taste , dry	Increases agni , does not increase kapha

Properties of samadrajala (sea water) : visragandha (fleshy odour) ,salty taste and it increases all the doshas[12].

Qualities of river water based on direction of flow

Table No.8: Qualities of water based on the direction of flow of river

Si.No	Direction of flow	Charaka [14]	Sushruta[15]	Vagbhata[16]
1	Purvabhimukha (flowing eastwards)	Heavy	Not recommendable because of heavyness	Opposite nature of pashchima bhimukha rivers
2	Paschimabhimukha (flowing westwards)	Pathya, (Wholesome) & Nirmala (clear)	Pathya (wholesome) because of lightness	Pathya (wholesome), amala (pure) and usefull.
3	Dakshinabhimukha (flowing southwards)		Do not cause much doshas because of their moderate qualities	

Rivers flowing towards the west sea with high velocity and consisting of pure water are, in short, suitable for domestic purposes and vice versa

Qualities of river water based on place of origin

Table No.9: Qualities of rain water based on place of origin

	Origin	Charaka[14]	Sushruta[15]	Vagbhata[16]
1	Himalaya	Pathya (wholesome), sacred,(divine) sages use this water	Cause cardiac disorders, oedema, headache, elephentiasis and goitre.	-
2	Malaya	Pathya (wholesome) and Clear	Worm infestation	-
3	Pariyatra	Cause diseases of head	Pathya (wholesome),	Tridoshahara ,bestow

		and heart,skin diseases and filariasis	produce strength and health	strength and sexual vigour.
4	Vindhya	Cause diseases of head,heart,skin diseases and filariasis	Skin diseases and anaemia	Skin diseases,anaemia and diseases of head.
5	Sahya	Cause diseases of head, heart, skin diseases and filariasis	Skin lesions	Skin diseases,anaemia and diseases of head.
6	Mahendra	-	Filariasis and gulma (abdominal enlargements)	Filariasis and abdominal enlargements
7	Prachi,Avanti Aparavanta	-	Piles	Piles

Season in relation to the type of water to be used [4]:

The qualities of water changes according to the season and different types of water to be consumed are enlisted below

Table No.10: Types of water to be used in different seasons

	Name of the season	Type of water source
1	Varsha	Antariksha (Rain water) or oudbida (spring water) they possess good properties
2	Sharath	All sources of water can be used because they are all clear
3	Hemantha	Water from sarasa(natural lakes) or tadaga (artificial lakes)
4	Vasanta	Water from koupa (wells) or prasravana (springs)
5	Greeshma	Water from koupa (wells) or prasravana (springs)
6	Pravrit	Water from choutya or any other water except rain water

Classification of jala based on desha (region)[6]:

Table No.11: Qualities of water based on desha (region)

SL.NO	Desha	Qualities
1	Jangala (dry)	It is free from defects and harmless
2	Anupa (marshy)	It will be having many defects and it is abhishyandi. It is not recommended for use
3	Sadharana (neither wet nor dry)	Avidahi(does not produce burning sensation during digestion), quenches thirst, is pleasant, appetiser, sweet and cool. It is recommended for usage.

Classification of jala based on avastha and their properties: It is divided into ama and pakwa (cooked or heated)

Sheetajala[12,17]: Cold water pacifies madatyaya (alcohol intoxication), glani (weakness), murcha (fainting), chardi (vomiting), shrama (fatigue), bhrama (giddiness), thrishna (thirst), ushna (heat), daha (burning sensation), pittasra (bledding disorders), visha (toxicity) and tamaka shwasa .

Contraindications for sheeta jala[17]:

Parshwa shula, corryza, vataika diseases, galagraha, adhmana, sthimita koshta, sadya shuddhe (immediately after an elimination

therapy), navajwara, hikka, during snehapana.

Ushnodaka (Hot water):

The water boiled till it reduces to half and it reaches nirvega, nishphena, nirmala is called ushnodaka[18] or the water obtained by boiling and reducing it to 1/8th,1/4th or 1/2 part or just sufficiently boiled is called as ushnodaka[19].

General qualities of ushnodaka(hot water)[17,18]:

Ushnodaka is laghu (light) , Agni Deepaka, bastishodhaka, pathya, sangrahi.

Effect on dosha – Kaphavatahara

Effect on dhatu – Medadhatuhara

Indications – Kasa, Shwasa, Jwara, Amavata

1. Water when boiled and reduced to 1/4th part is acts as vatahara
2. Water when boiled and reduced to 1/2 part is will act as pittahara
3. Water when boiled and reduced to 3/4 will act as kaphahara respectively.

Different types Hot water as per season[20]:

Boiled and cooled water is said to be the best for all seasons. It is light for digestion and has tridoshahara property too.

1. During grishma and sharadrutu – the water boiled and reduced to 1/4th is good
2. Hemantha, shishira and varsharutu – the water boiled and reduced to 1/2 is said to be ideal.

Contraindications for ushnodaka[20]: Shrama, klama, tamaka shwasa and urdhwaga raktapitta.

Qualities of shrutasheeta jala (boiled and cooled water):

1. It does not increases kleda in the body[21].
2. It is easily digestible and acts as pittahara[21].
3. It is indicated in madatyaya, pittaja roga, tridoshaja rogas and is beneficial in daha, atisara, raktapitta, murcha, bhrama, chardi and visha[17].

Practical Utility:

1. Even a healthy person is recommended to drink adequate quantities of water in all seasons except sharat and greeshma ritu (autumn and summer season)[22].
2. Drinking water in excess, even in condition of excess thirst also lead to increase in kapha and pitta dosha particularly in person suffering from fever[7].
3. Intake of water in relation to food[23]

A. Drinking water in between the food – it moistens the food, helps to breakdown the food particles into smaller pieces, it relives thirst. Hence water intake in appropriate quantity in between the food is ideal.

B. Drinking water after food – it affects both the quality of food and digestion of strength. It gives a touch of coolant effect to whatever the food is eaten. Hence a person tends to become obese over a period of time, by this method. Hence it is not ideal.

C. Drinking water before food – it dilutes and weakens agni (digestion strength),since water is coolant as it is opposite to qualities of agni. Hence taking water before food is not ideal.

4. Water should be used in minimal quantities for those who are suffering from distaste, corryza, excessive salivation, oedema, consumption, weak digestion, abdominal enlargements, skin diseases, fever, eye diseases, wounds and diabetes mellitus[17].
5. Benifits of drinking hot water during night time[20]: It breaks the kapha samghata,

does apakarshana of vata and ajeerna digests digested very quickly.

Quantity of water to be taken relation to food[24] :

The half of the stomach should be filled by ahara and quarter part should be filled with jala and remaining quarter part should be left for vata, pitta, kapha.

Difference in effects of water – in relation to intake of food[23]

1. Drinking of water before meals leads to emaciation and weakness.
2. Drinking water after the meals leads to obesity .
3. Drinking water in between the meals promotes health.

Time taken for digestion of water[20]:

Amajala – 1 yama (3 hours)

Shritasheetajala (boiled and cooled) – ardhayama (1 and half hour)

Ushnajala (hot water) - 1 muhurtha (48 minutes)

Effects of excess drinking of water[25] :

Excess drinking of water leads to amavriddhi in the body,amavirrdhi leads to mandagni, mandagni leads to ajeernata ,ajeernata will lead to utpatti of jwara ,jwarotpatti leads to rasadi dhatu nasha and dhatunasha will finally leads o sarvaroga.

Jaladhikhya pana

↓

Amavriddhi

↓

mandagni

↓

ajeernata

↓

Jwarotpatti

↓

Dhatuanasha

↓

Sarvaroga

Excess drinking of water may lead to Amavriddhi (increase in toxins), Thrishna (thirst), nidra (sleepiness), tandra (drowsiness), adhmana, gourava (heaviness), Kasa (cough), agnisada (reduced appetite), hrillasa (nausea), praseka (excessive salivation), shwasa (dyspnoea), peenasa (rhinitis)[7].

Classification of jala based on avastha

Oushadha siddha jalapana is indicated in so many diseases, few of them are listed below.

Table No.12: Different medicated water indicated in different diseases

Sl. No	Disease	Ingredients
1	Jwara	Musta , parpata, usheera,chandana , nagara, udichya[26]
2	Raktapitta	1.Hrivera,chanadana, usheera,musta,parpataka[27] 2.Kharjura,mridvika,madhuka,parushaka with sharkara[27] 3.Madhwambu [28] 4.Phalambu (Drakshadi phalasiddhajala)[28]
3	Atisara	1.Hrivera and shunti[29] 2.Musta and parpata[29] 3.Musta and udichya[29] 4.Dhanyaka and udichya[29] 5.Vacha and ativisha[30]
4	Chardi	1.Mritbhristaloshtaprabhavajala[31] 2.Chanakodaka[31]
5	Prameha	1.Sarodaka[32] 2.Kushodaka[32] 3.Madhoodaka[32]
6	Madatya	1.Panchamoola siddha jala[33]

	ya	2.Dhanya nagara jala[33] 3. Hrivera,bala,prishniparni or kantakari siddhajala[34] 4.Duralabha,musta jala[34] 5.Musta ,parpata siddhajala[34] 6.Mutsa siddhajala [34]
7	Thrishna	1.Draksha,chandana,kharjura, usheera and madhu[35] 2.Lajodaka[36] 3.Madhoodaka[36]
8	Sthoulya	Madhoodaka[37]

WATER AS ANUPANA

Water is considered as best anupana among all the dravyas. Some the yogas with water as anupana are listed below.

Table NO.13: Different formulations with water as anupana

S.N	Name of the yoga	Type of water as anupana
	Churna	
1	Sudarshana churna[38]	Sheeta jala
2	Narayana churna (ajeerna)[39]	Ushnajala
	Vati	
3	Kankayana vati (gulma prakarana)[40]	Ushnodaka
4	Kaishora guggulu[41]	Koshna jala
5	Kanchanara guggulu[42]	Koshna jala
6	Trivikrama rasa[43]	Jala
7	Grahanivajra kapata rasa[44]	Ushna jala
	Ghrita	
8	Bindu ghrita[45]	Ushna jala

DISCUSSION [46,47,48]:

Rationality behind storing of water in copper and brass vessel

a. In a Research study – It was observed that the amount of *E.coli* in the copper veseel dropped drastically over time and fell to undetectable levels in 18-24 hours and storing of water in brass vessels killed the indicator *E.Coli* within 30 – 36 hrs, thus making water safe for consumption from microbial perceptive.

b. In a research study - the antibacterial effect of copper pot against important diarrhoeagenic bacteria including *vibro choleare, shigella flexineri, enterotoxigenic Escherichia coli,* enteropathogenic *E.coli, Salmonella enteric Typhi* and *Salmonella paratyphi* was reported.

Rationality behind using herbs for water cleansing

In a research study- the performance of naturally occurring *Strychnos potatorum* was evaluated against the chemical coagulant alum in treatment of turbid water. *Strychnos potatorum* was found effective when used in low dosages 0.25 to 0.35mg/L. It acts as a good coagulant and coagulant aid at higher turbidity 1000-3000 NTU. The turbidity removal efficacy of *Strychnos potatorum* solution was observed better on second day as compared to first,second and third day.

The above mentioned researches uphold the classical methods of storage and purification techniques and revalidate the concepts on practical utility.

CONCLUSION

As mentioned in Astanga sangrha "Paneeyam praninam prana" - Paneeya is the prana for life and this review summarizes the various aspects of water in the classical texts to generate a comprehensive idea regarding water. The different processing techniques advised to modify the qualities of water and to remove contamination of water, their therapeutic indications and contraindications helps to understand the importance of water in

maintaining the normal health and in treatment aspect also.

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