

A CRITICAL REVIEW ON SHANKHA

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Ayurveda an unequivocal traditional system of medicine uses the inherent principles of nature to maintain health in a person by keeping his body, mind and spirit in perfect equilibrium. Medicines are the main weapon in the hands of a physician to fight against any disease entity. Pharmacopoeia of *Ayurveda* comprise of drugs derived not only from herbs but also from minerals, metals and animals. But they can't be taken as it is, hence need to be converted into such form which will be therapeutically fit for use. *Rasashastra* is the most important and popular branch of *Ayurveda* which was developed in the medieval period. *Bhasma* are the unique dosages form of *Ras Shastra*, prepared after proper levigation with particular herbs with particular metals and

minerals and later they are subjected to fire treatment in a particular manner and due to its fineness and nano particle size its turn into most assimilatory, harmless and therapeutically effectual form. *Shankha bhasma* is one of such preparations which may be successfully use in the treatment of *Shool*, *Amlapitta*, *Udar Roga*, *Vibandha*, *Prameha* etc. This review is a humble effort to summarize and gather knowledge about *Shankha* that are described and explained in *Ayurvedic texts*.

KEYWORDS: *Bhasma, Shankha, Ras Dravya.***INTRODUCTION**

In *Rasashastra* calcium containing dravyas are under *Sudhavarg* namely *Shankha*, *Shukti*, *Kapardika*, *Pravala*, *Godanti*, *Khatika* etc. These were added in later period but the knowledge of drug under this group is available since Vedic period.^[1] *Shankha* is an

important drug of *Sudhavargiya dravya* i.e well known since Vedic period but its internal use was seen from samhita period. *Shankha* is the hard calcareous shell of the species of large predatory sea snail, *Turbinella pyrum*, *Trapa*, and *Xanthus pyrum* of gastropoda, which is largest class of molluscs. They are mostly found in shallow ocean coast with abundant sea weed. The most characteristic feature of this class is the spirally coiled shell.^[2] On the basis of size conch can be divided into two varieties, big size conch and small size conch. The big one measures 8-10" in length and 6-7" in breadth, weight around 2.5 kg. Small size conch is generally 4' in length and 2-3" in breadth.^[3]

According to *Rasa-tarangini* two types of *Shankha* –*Dakshinavarta* and *Vamavarta*. *Dakshinavarta* is rare to find and is considered for religious purposes. On the other hand *Vamavarta* is used for Therapeutic purpose.^[4] *Shankha bhasma* is used in diseases like *Amlapitta*, *Agnimandhya*, *Atisara*, *Parinaamshula*, *Grahni*, and *Ajirna*, *Visha*.^[5]

SYNONYMS OF SHANKHA

Table no. 1.

Synonyms	Dh.N ^[6]	B. P. N ^[7]	R. N ^[8]	A.P ^[9]	R. T ^[10]
<i>Shankha</i>	+	+		+	+
<i>Putra</i>			+		
<i>Antarmahanad</i>			+		
<i>Varibhava</i>	+				
<i>Kambu</i>	+	+		+	+
<i>Bahunada</i>			+		
<i>Sunadaka</i>		+	+		+
<i>Dirghanisvana</i>	+				
<i>Susvara</i>	+		+		
<i>Varichara</i>					
<i>Mangalprad</i>			+		
<i>Dirghanada</i>	+		+		+
<i>Dhavala</i>	+		+		
<i>Shankhaka</i>					
<i>Samudraja</i>		+		+	
<i>Shrivibhushan</i>	+				
<i>Arnobhava</i>			+		
<i>Jalaja</i>			+		
<i>Kutilla</i>			+		
<i>Pavandhvani</i>		+	+		

CLASSIFICATION OF SHANKHA ^[11]- Classification of *Shankha* according to different classical text is given below-

Table no. 2.

Name of Varga	Reference
<i>Shukla Varga</i>	<ul style="list-style-type: none"> • <i>Rasarnava</i>(5/40), • <i>Dhanvantri Nighantu</i>(63, pg 271), • <i>Rasa Ratanakar</i>(2/6), • <i>Raj Nighantu</i>(67, pg 669)
<i>Sudha Varga</i>	<ul style="list-style-type: none"> • <i>Rasamritam</i>
<i>Uprasa varga</i>	<ul style="list-style-type: none"> • <i>Bhavaprakash Nighantu</i> 101/pg 614, • <i>Dhanvantari Nighantu</i> (87-88/pg 275), • <i>RasaRatnakara</i>(Ri.3/67), • <i>Rasendra Chintamani</i>(70/pg 98), • <i>Rasendra Sara Samgraha</i>(1/118-119), • <i>Ayurveda Prakasha</i>(2/346)
<i>Suvarnadi varga</i>	<ul style="list-style-type: none"> • <i>Madanpal Nighantu</i>(62-64/pg 118), • <i>Raj Nighantu</i>(120-122/pg 452)
<i>Dhatu Varga</i>	<ul style="list-style-type: none"> • <i>Kaideva Nighantu</i>(131-132/pg 296), • <i>Bhavaprakasha Nighantu</i>(159/pg 622)
<i>Vatapittaghana & Kaphapittaghana Varga</i>	<ul style="list-style-type: none"> • <i>Siddha Mantra Prakasha</i>(73/33, 111/35-36)
<i>Mansa Varga</i>	<ul style="list-style-type: none"> • <i>Kaideva Nighantu</i>(34-35/pg 445), • <i>Bhavaprakasha Nighantu</i>(34/pg 710)
<i>Svedaja Varga</i>	<ul style="list-style-type: none"> • <i>Dravya Guna Vigyana</i>(Sharma, 2005, pg 60-61)
<i>Chandanadi Varga</i>	<ul style="list-style-type: none"> • <i>Dhanvantari Nighantu</i>(159-160/pg 119), • <i>Sodhala Nighantu</i>(S.N.I.480/50, S.N.II 35/93)
<i>Upratana</i>	<ul style="list-style-type: none"> • <i>Bhavaprakash Nighantu</i>. 189/pg 628, • <i>Dhanvantari Nighantu</i>(86/pg 275), • <i>Ayurveda Prakasha</i>(3/6)

GRAHYA LAKSHAN ^[12]- Acharya Sadanand Sharma has described the acceptable features of *Shankha* which are given below-

Table no. 3.

<i>Vrutta</i>	round shape
<i>Snigdha</i>	snigdha sparsha
<i>Sukshma mukha</i>	small mouth
<i>Nirmala</i>	clean surface
<i>Chandrasundra</i>	Being like moon looks beautiful
<i>Dirghakaya</i>	Large
<i>Guru</i>	heavy

SHODHAN OF SHANKHA

Different drugs and method of purification of *Shankha* described in various classics are presented in below table as follow –

Table no.4.

<i>Shodhan Dravya</i>	Method	Reference
<i>Amla Dravya</i> ^[13]	<i>sevedana</i>	A.P (2/263)
<i>Nimbu Swarasa</i> ^[14]	<i>Svedana</i> /1 hrs.	S.Y.S. (Pg 158)
<i>Jambiri Vari</i> ^[15]	<i>sevdana</i> / 12 hrs	R.T(6/11)
<i>Jayanti Svarasa</i> ^[15]	<i>Svedana</i> /3 hrs.	R.T. (12/8)
<i>Chaulayi Svarasa</i> ^[15]	<i>Svedana</i> /3 hrs.	R.T. (12/9)
<i>Kanji</i> ^[15]	<i>Svedana</i> /3 hrs.	R.T. (12/10)
<i>Nimbukamla</i> ^[15]	<i>Svedana</i> /1, 1/2 hrs.	R.T. (12/11)
<i>Gomutra+Lavana+Nimbuswarasa</i> ^[16]	<i>Sevedana</i> /6hrs	<i>Rasayanasara</i>

MARANA OF SHANKHA

Marana of *Shankha* according to different *Acharya*-

Table no.5.

Name of text	Method of <i>Marana</i>
A.F.I Part 1 ^[17]	<i>Shodhita shankha</i> is placed in <i>sharava samputa</i> , <i>sandhi bandhan</i> is done and dried, and <i>gajaputa</i> is given. This process is repeated twice. <i>Kumari swarasa</i> or <i>nimbu svarasa</i> to be used for <i>bhavana</i> .
<i>Rasa Taringini</i> ^[18]	<i>Shodhita shankha</i> is placed in <i>Sharava samputa</i> , <i>sandhi bandhan</i> is done and dried, and <i>gajaputa</i> is given. Two <i>gajaputa</i> is indicated for the preparations of <i>bhasma</i> .
<i>Ayurveda Prakash</i> ^[19]	<i>Shankha</i> pieces heated over smokeless coal or incinerate in <i>laghuputa</i> , after self-cooling levigated in <i>Nimbu swarasa</i> and after rubbing put in air tight box.
<i>Siddha Yoga Samgraha</i> ^[20]	<i>Shankha</i> pieces heated over 10 sher coals or <i>kande</i> , levigated in <i>Nimbu swarasa</i> . After giving three <i>Bhavana</i> , rubbing and put in air tight box.
<i>Rasendra Sara Samgraha</i> ^[21]	<i>Marana</i> of <i>Shankha</i> is done by incenerating it with half of <i>tankana</i> in <i>andhmusha</i> .

PROPERTIES OF SHANKHA

Properties of *Shankha* according to different *Acharyas*-

Table no.6.

	R. T. ^[22]	A.P ^[23]	R. N ^[24]	B.P.N ^[25]	Dh. N ^[26]
Rasa	Kshara	Kshara	Katu	-	Madhura
Guna	-	-	Laghu, Lekhana	Laghu	-
Virya	Sheeta	Sheeta	Sheeta	Sheeta	Usna
Vipaka	-	-	-	-	Katu
Doshghanta	-	Tridosh nashak		Pitta kapha nashak	-

DOSAGES OF SHANKHA BHASMA

Dosages of *Shankha Bhasma* according to different *Acharyas*-

Table no.7.

	<i>Ras tarangini</i> ^[27]	<i>Siddha Yoga Samgraha</i> ^[28]	<i>A.F.I</i> ^[29]
Matra	2 Gunja (250-500mg)	4-8 Ratti (500-1000mg)	250-300mg

DIFFERENT FORMULATION OF SHANKHA^[30]

Formulations of *Shankha* according to different *Acharyas*-

CHARAK SAMHITA**Table no. 8.**

Name of Formulation	Indication	Reference
<i>Indrokta Rasayana</i>	<i>Rasayana</i>	C. Chi. (1-4/23)
<i>Ushiradi Churana</i>	<i>Raktapitta</i>	C. Chi. (4/73)
<i>Avapida nasya</i>	<i>Nasagata raktapitta</i>	C. Chi. (4/99)
<i>Muktadi Churna</i>	<i>Hikka, Shwasa, Kasa</i>	C. Chi. (17/125)
<i>Krishnamratikadi yoga</i>	<i>Raktatisara</i>	C. Chi. (19/82)
<i>Shadvaladi Pradeha</i>	<i>Visarpa</i>	C. Chi. (21/75)
<i>Sumanakorkadi varti</i>	<i>Netragata raktapita</i>	C. Chi. (26/241)

SUSHRUTA SAMHITA**Table no.9.**

Name of Formulation	Indication	Reference
<i>Churna</i>	<i>Raktastambhana</i>	Su. Su. (14/36)
<i>Churna</i>	<i>Lomashatana</i>	Su. Chi. (1/105)
<i>Mustadhyanjana</i>	<i>Pittaja abhisyananda</i>	Su. U. (11/8)
<i>Vaiduryadhyanjana</i>	<i>Shukti</i>	Su. U. (11/15)
<i>Shankhadhyanjana</i>	<i>Arma. Pidka. Sirajala</i>	Su. U. (15/25-28)
<i>Rasakriya</i>	<i>Timira</i>	Su. U. (17/43)
<i>Putapaka</i>	<i>Lekhana</i>	Su. U. (18/24-25)

ASTANG HRIDYA**Table no. 10.**

Name of Formulation	Indication	Reference
<i>Krishnamratikadi yoga</i>	<i>Raktatisara</i>	A.H. Chi.(9/91)
<i>Bhallatakadi taila</i>	<i>Shvitra</i>	A.H. Chi(20/16-17)
<i>Dhantavarti</i>	<i>Kshatashukra</i>	A,H. U.(11/34)
<i>Churnanjanana</i>	<i>Timira</i>	A.H. U.(13/20-22)
<i>Sarpavasadhyanjana</i>	<i>Dristiprada</i>	A.H. U.(13/41)
<i>Vimala varti</i>	<i>Nirmala drishti</i>	A.H. U.(13/70)

RAS TARINGANI

Table no.11.

Name of formulation	Indication	References
<i>Arjunaharshankha churna</i>	<i>Arjuna</i>	R.T.12/15
<i>Shankhavarti</i>	<i>Netra shukra</i>	R.T.12/16
<i>Shankhadravaka (first)</i>	<i>Agnimandhya, Visuchika</i>	R.T.12/35-42
<i>Bhasma</i>	<i>Samgrahani</i>	RT.12/101
<i>Bhasma</i>	<i>Tridoshaja shula</i>	R.T.13/21
<i>Muktapachamritarasayana</i>	<i>Jirna jvara, Yakshma</i>	R.T.23/82-86
<i>Kaphaketurasa</i>	<i>Pratishyaya, Kasa</i>	R.T.24/106-109
<i>Vishaprabha vartika</i>	<i>Netrashukla, Arma</i>	R.T.24/151-155
<i>Shulanirmulana rasa</i>	<i>Grahani, Visuchika</i>	R.T.222-226

SHARANGDHAR SAMHITA

Table no.12.

Name of Formulation	Indication	References
<i>Loknatha Rasa</i>	<i>Kshaya</i>	Sh.Sa. M 12/58-61
<i>Hemgarbhapottali rasa</i>	<i>Kasa, Kshaya</i>	Sh.Sa. M 12/112
<i>Chandrody varti</i>	<i>Netra roga</i>	Sh.Sa. U.13/75-77
<i>Dantavarti</i>	<i>Shukra roga</i>	Sh.Sa. U.13/80
<i>Rasakriya</i>	<i>Arma Vartma</i>	Sh.Sa. U.13/87-88
<i>Krishnasarpavasa raskriya</i>	<i>Drishtiprada</i>	Sh.Sa. U.13/1o5
<i>Lekhana anjana</i>	<i>Arma</i>	Sh.Sa. U.13/106

RAS RATNA SAMUCHYA

Table no.13.

Name of Formulation	Indication	Reference
<i>Bhutankusha rasa</i>	<i>Kasa</i>	R.R.S. 13/33-35
<i>Shankheshvara rasa</i>	<i>Rajyakshma</i>	R.R.S. 14/16-19
<i>Mrigankapottali rasa</i>	<i>Rajyakshama</i>	R.R.S. 14/20-22
<i>Vaidhyanatha rasa</i>	<i>Rajyakshama</i>	R.R.S. 14/47-50
<i>Loknatha rasa</i>	<i>Rajyakshama</i>	R.R.S. 14/51-53
<i>Arshakuthara lepa</i>	<i>Arsha</i>	R.R.S. 15/83
<i>Lokeshvara rasa</i>	<i>Grahani</i>	R.R.S. 16/25-28
<i>Shulahara rasa</i>	<i>Shula</i>	R.R.S. 18/159-160
<i>Ksharavati</i>	<i>Gulma</i>	R.R.S. 18/161-163

THERAPEUTIC INDICATIONS

Amlapitta, Grahani, Parinaamshula, Tarunyapidika, Atisara, Vishdosha. (R.T^[31])

Previous Research Work

1. A study revealed that *shankha bhasma* rendered dose dependent protection against experimental gastric ulcer induced in rats by indomethacin and cold restraint stress model. *Shankha bhasma* caused significant reduction in ulcer index in both the

indomethacin and cold restraint models. Thiobarbituric acid reacting substances of stomach in indomethacin treated rat was also reduced by Shankha bhasma but serum Calcium level was not altered.^[32]

2. *Shankha bhasma* is known to have antacid property. The antacid activity was evaluated by preliminary antacid test, acid neutralizing capacity test, Rosset- rice test and Rehels test. It was observed that bhasma 300 mg prepared by both method (traditional method and muffle furnace method) neutralized 9.5 mEq and 7.05 mEq of acid respectively.^[33]
3. *Shankha Bhasma* have shown similar therapeutic response against Acetic acid induced writhing test in rats, showed statistically significant decrease in no. of writhing but therapeutic response is less in comparison with standard.^[34]
4. In other study *Shankha Bhasma* showed efficient in vitro anti-inflammatory activity related to inhibition of protein denaturation.^[35]

CONCLUSION

In classics of *Rasshastra*, *Shankha* comes under *Sudha varga*. In a composite pharmaceutical process of *bhasma nirman*, *Shankha* renovates to more biocompatible *Bhasma* form and hence causes direct enrichment of its bioavailability. The main chemical content in *Shankha* is CaCO_3 , but it also have trace amount of minerals which result in the transformation of therapeutic efficiency, also it can be used as calcium supplements. It is having the properties like *Madhur*, *Sheetal*, *Laghu*, *Kshar* etc so it can be prescribed in *Amlapitta*, *Grahani*, *Parinamshula*, *Udarshula*, *Atisara* etc. In past recent years some researches have been conducted to provide evidence on the legitimacy and genuineness of the classic review points about *Shankha bhasma* especially in gastrointestinal disorders.

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