



Review Article

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A CRITICAL REVIEW ON AKIKA: AN UPARATNA

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ABSTRACT

Akika is one drug which has been used since olden days. In the time of Sindhu civilization Akika was in use, because it has been unearthed in Harappa Mohenjo-Daro¹⁸. It is one of the gem grouped under the uparatna varga (semi-precious group). In English it is known as Agate (chalcedony) which is having composition of silicon and oxygen with an infinite three-dimensional polymeric structure. Since it is having properties like sheeta (cold), hridya (cardio protective) and hridya prabhava (special action) the bhasma of Akika and pishti are indicated in palpitation and cardiac related diseases and in the field of Ayurveda practice it is a leading remedies for the same but because of its scattered references in Ayurveda many people have misconceptions that Akika belongs to Unani system of medicine which is not true. Hence the present article aims to review regarding origin, occurrence, purification, marana and pishtikarana of Akika from Ayurveda literary.

Keywords: Akika, Uparatna, Agate, Hridya

INTRODUCTION

Ayurveda has been known as the science of herbal medicines. However along with herbs our ancient scholars were also well aware of the medicinal value of metals, minerals, aquatic products and gems etc which are found in nature. Rasashastra is one of the very important offshoots of this Ayurveda which mainly deals with above mentioned substances. Gems or Ratnoparatnas are also one among them. As the priority of Rasashastra was to attain a body (Deha vada), Siddhacharyas of Rasashastra had used the gems for the purpose of inducing the longevity of life in a human body. Akika¹ is one of the gem grouped under the uparatna varga and has sheeta (cold), hridya guna (cardio protective property). It is having composition of silicon and oxygen with an infinite three-dimensional polymeric structure. In English it is named as Agate. There are more than 15 varieties present in Agate, among them white Agate is considered as standard by API. The typical horizontal bands are diagnostic criteria for Akika.

Historical Review

No references were found for Akika in Vedas and Samhitas. But it is recorded as being used at the time of Sindhu civilization, because it has been unearthed in Harappa Mohenjo-Daro². Along with Akika various other dravya's like Rajavarta (lapis lazuli), Hingula (cinnabar), Souveeranjana Sphatika (potash alum) etc. were found at that time, which were used for the purpose of Aabhooshana (ornamental), Prasadana, and as an Auoshadha³ (medicine). At the period of Kushan, various gems, vessels, silk cloth, spices were used to export to "Roam" & Gold was imported. There was great demand for gems like Heeraka (Diamond), Sphatika (Potash alum), Akika (Agate), Manikyaa

(Ruby), Vaidhurya (Cat's eye) etc. in the Roam. At that time good quality of Akika were available in "Ratanapur"⁴.

Origin

Generally, Akika occurs in pure form. It occurs all over the earth's crust in igneous as well as metamorphic rocks. Wherever cavities are developed, silica will get deposit and the material becomes Akika. Banding in Akika is due to interrupted deposition of silica in cavities⁵.

Occurrence

Akika occurs mainly as fillings in the voids in the Deccan Trap rocks. The most important occurrence of Akika in India is Rajpipla area and further west between the mouths of river Tapti and Narmada in Gujarat. Other occurrences of economic importance are known at Amaravati, Aurangabad, Buldhana, Chandrapur, Jalna, Nasik and Pune in Maharashtra, beds of Krishna and Godavari rivers in Andhra Pradesh, Rajmahal and Sahebganj in Bihar, Dharand, Mandsaur in Madhya Pradesh and Jaipur, Jamnagar, Kutch and Surat in Gujarat⁵.

Mythological Origin⁶: According to Ratna pradeepa it is considered as eye of 'Devadhootaloka' and it has been said that Lord Shiva had given daivika shakti to this ratna.

Vargeekarana

Acharya siddhabheshaja manimalakara has mentioned under paradaadi varga⁷ where as Rasadarpanakara⁸ and Rasamritakara⁹ mentioned under uparatna varga. Acharya Ratna pradeepakara specified it under sphatika varga ratna¹⁰.

Synonyms

Different synonyms are found in classics based on its guna, karma and swarupa like

Varna(colour): Rudhira¹¹, Raktapashana, Raktashma, Raktabham, Shona¹².

Karma (action): Hridaya, Pashanahridaya¹³, Hridayopalam¹².

Swaroopa(appearance): Puteeka¹¹, Paalyashma, Hakeeka, Paandha¹⁴.

Vernacular names¹⁵

Table 1: Vernacular names of Akika

Sanskrit	Akika
Marathi	Akika
Hindi	Akika
Pharsi	Akika
Arab	Akika
Punjabi	Manka
Urdu	Aqeeq (N.F.U.M.)
English	Agate (chalcedony)

Types

Different opinions are there regarding the classification of Akika, some are classified based on color and some are based on appearance.

Rasadarpana¹¹: Shweta, Peeta, Hareeta, Krishna and Rakta Akika

Dravya guna vignyana¹⁶: Shweta, Peeta, Krishna Neela and Rakta varna Akika.

Ayurveda sara sangraha¹⁷: Shweta, Peeta, Neela and Rakta varna Akika.

Prarambhika rasa parichaya¹⁸: Shweta, Peeta, Hareeta, Krishna and Rakta varna Akika.

Bharateeya rasashastra¹⁹: Krishna, Neela and Rakta varna Akika.

Unani dravyaguna shastra²⁰: Shweta, Peeta and Rakta varna Akika

Rasendra sambhava¹²: Shweta, Peeta, Rakta and Shyama varna Akika

Based on appearance¹³

1. Akika
2. Jaalayukta Akika
3. Shaivala Akika
4. Sadharana Akika

Grahyalaxana's

Expect Prarambhikara Rasaparichayakara all acharyas opined that rakta varna akika is shresta but according to API the white color agate with parallel bands has more therapeutic value.

Rasendra Sambhava - Shone varna is uttama¹².

Parambhika rasa parichaya -Shweta varnayukta (white colored) Akika is considered as Prashasta¹⁸

Rasabindu -Shlakshna (shiny) and Rakta varna yukta is considered as prashasta¹⁹

Unani dravya gunadarsha -Shiny, Kathina, and rakta varnayukta²⁰(blood colored)

API -White colored, bands of Akika are typically parallel to each other²¹

Rasamrita- Kathina (hard), Rakta (blood coloured) or Yakrut varnayukta²²(liver colored)

Guna-Karma²³

Rasa: Kashaya, Madhura

Guna: Ruksha, Soumya

Virya: Sheeta

Vipaka: Madhura

Prabhava: Hridya

Doshagnata: Pittashamaka

Modern Review

Agate is a common semiprecious Silica mineral that has long been used as a gem and Chalcedony, which is a form of 'Quartz'. It is a crypto crystalline variety of the mineral Quartz. It makes up about 12% of the earth's crust²⁴. The name Agate is from an old locality on the 'Achate' river in south western Sicily.

Historical Information

Agate is the oldest stone in recorded history and has been used in jewelry since Biblical Babylonian times. Agates were used to ward off storms and were prized gems in antiquity. Beads of beautiful workmanship made out of Agate and other varieties of Chalcedonies have been unearthed in Mohenjo-Daro and Harappa²⁵. Ancient Romans valued the Agate for its reputed medicinal and talismanic properties. Powder mixed with water said to be counteracts serpent's venom²⁶.

Appearance

Agates have a banded structure with varying color, translucent to opaque with a waxy or greasy luster. The bands run parallel to each other but are often curved or concentric. They may be straight, wavy, or zigzag. Its occurrence, hardness, specific gravity, color, etc. characterize Agate. There are many types in Agate, among them white colored banded Agate was standardized by API.

Table 2: Geological features of White Agate²⁷

Class	Semiprecious
Chemical composition	SiO ₂
Color	White
Streak	White
Cleavage	Not present
Fracture	Conchoidal
Luster	Waxy
Tenacity	Brittle
Transparency	Sub translucent
Crystal system	Hexagonal
Hardness	6.5 – 7
Sp. Gravity	2.5 – 2.6
Refractive index	1.53 – 1.55

Distinguishing Character: The unique banding patterns and hardness can distinguish the Agate from all minerals²⁸.

Complex Tests- Agates dissolves in hydrofluoric acid. No other acid has any reaction or effect on Akika. It should contain not less than 95% Silica (SiO₂) when analyzed by gravimetric method²⁸.

Optical Properties: Akika is uni axial, positive, showing birefringence between crossed nicols, with refractive indices between 1.530 and 1.555 with η_w 1.544 and η_e 1.553²⁸.

Heavy metals: Should not contain more than the stated limits for the following,

Arsenic = 190 ppm and Cadmium = 1.6 ppm²⁸

Akika Dharana Prabhava

By adorning Akika over the body helps in curing mano vikaras and decreases palpitations²⁰. It increases the Arogya (health) as well as Ayu (life span) and it is said that by wearing Akika one can earn friendship of people around him⁶.

Effect of Agate

Traditionally, Agates with banded colors were once placed at the head of a sleeper to give rich and varied dreams. Agate is considered a protection stone. It is believed that it attracts strength and offers protection from bad dreams, stress and the

draining of energy. Wearing Agate made one agreeable, persuasive, and bold. It brought Gods favor, secures the favor of the powerful & bestowed the power to win on enemies²⁹.

Shodhana

After reviewing all the available books related to Akika, it is found that there are total two methods were mentioned for the shodhana (Purification) of Akika, one is nirvapa (heating and quenching) method and another one is swedana (boiling) method but the number of nirvapa, nirvapa media & swedana media are differ with different acharyas, which are tabulated in Table 3.

Table 3: Drava Dravya for Nirvapa

Reference	Drava dravya	Nirvapa
R.D ⁹	Gulab jala(rose water)	21times
R.D ⁹	Triphala kwatha	6 times
A.S.S ¹⁷	Gulab jala	21 times
P.R.P ¹⁸	Gulab Arka / Triphala kwatha	21 times
API ²¹	Gulab jala/ dugdha/ veda mushka arka	21times
R.S. ³⁰	Shatapatrikeer	7 times
R.B. ³¹	Godugdha/ Arjuna swarasa(<i>Terminalia arjuna</i>) / Arka Gulab	21times
B.V ³²	Ketaki Arka (<i>Pandanus fascicularis</i>) / Neeli utpala / Gulab Arka	Till it becomes brittle.
RTSS ³³	Gulab jala/ dugdha/ veda mushka arka	21times
B.R ³⁴	Gulab jala/ Ketaki Arka	20 times
R.A.S ³⁵	Godugdha(cow milk)	21 to 31 times
R.V ³⁶	Ketaki arka/ veda mushka arka	15-20times / till it becomes brittle
R.P ³⁷	Arka kevada/ veda mushka arka	15-20 times/ Till it becomes brittle

Only two references were found regarding swedana method for Akika Shodhana. Acharya Rasadarpanakara⁹ just mentioned to do swedana in any amlavargeeya dravya rasa and even he has not mentioned duration whereas acharya Bhagavan das³⁸ has clearly told to do swedana in nimbu swarasa for 3 hours.

Uses

It was said to quench thirst and protect from fever. Parisian magicians used Agate is believed to cure the stings of Scorpions & the bites of snakes, soothe the mind, prevents contagion. It cures insomnia. Along with this, varieties of Agates are used to prepare ornaments like necklaces, rings, bead etc. In ancient era Agate was used for making weapons³⁹.

Preparation of Akika Bhasma

Various methods have been told in Rasagrantha's about Akika marana.

1. Finely powdered Shodita Akika should subject to bhavana (Levigation) with kumari swarasa (*aloe vere*) / gulab arka. The paste thus obtained should make into chakrikas (pellate) & place in sharava samputa and after sandhi bhandhana subject to agni⁹(heat).
2. Bhavana should carry out with kumari swarasa to shodhita akika churna, after preparing chakrikas allow to dry them, then subject to three gaja putas, thus obtained bhasma should collect and again subject to bhavana with Godugdha and give one more Gajaputa¹⁷.
3. Shuddha Akika churna subject to the bhavana with Gulaba arka or Kumari swarasa and do Paka in sharava samputa. Here acharya has not mentioned regarding the paka method³².
4. Mardana of Akika churna is to be done with kumari swarasa, Chakrikas should be prepare and subject to agni⁴⁰.
5. Gulab arka or kumari swarasa bhavana should give to shodhita akika followed by gaja puta. After swanga sheeta, the whole procedure should repeat for three more times but during this time use Godugdha as a bhavana dravya instead of kumari swarasa followed by give gaja puta⁴¹.

6. Rakta Akika should be place inside the Indrayava phala and cover with mruttika lipta vastra and dry it. After drying this should be keep on nirdhuma agni by using vanopalas and after swangasheeta collect the product and repeat the procedure for 101 times for proper bhasma⁴².

7. The bhasma should prepare by triturating akika churna with Kumari swarasa, Ketaki rasa, Jalapippali swarasa and with Rambha swarasa and then it should be subject to 7 Kukkuta Puta⁴³.

8. Shodhita Akika should be placed in between Kamalagattagiri (Nelumbo nerufera) churna and prepare a samputa and give puta by 20 ser (18.836kgs) vanopalas(cow dung cakes), repeat the whole process for two more times⁴⁴.

9. Keep the Akika in bamboo or sevanti phala kalka, this should be placed in sharava samputa and subjected to gajaputa, thus obtained product should triturate with Ketaki arka and stored it⁴⁴.

10. Ketaki swarasa nirvapita Akika powder should place in taruni and give puta by 25ser vanotpalas⁴⁴ or else shodhita Akika should be place between the babbula patra / pudeena patra, prepare samputa and subjected to puta by 10 vanopalas⁴⁴.

11. Shodhita Akika should place in between the Kalka of Rita phala twak (Sapindus Mukoross), or Suhanjana twak (Moringa olifera) or Babula patra(Acacia Arabica) or Sirisha patra (Albezia Odoratissima) or Nilophara (Nymphaea alba) either in single kalka or mixed and prepare samputa and subjected to agni by 25 ser upalas⁴⁴.

12. Bhavana to the powder of shodhita Akika with Kumari swarasa or Godugdha and subjected to gaja puta⁴⁴.

Preparation of Akika Pishti

Akika Pishti should be prepared by bhavana method in khalwa yantra with suitable drava dravya for specific period of time. It is a common method has been explained in various Rasagranthas but the opinion regarding bhavana media, time and days for each bhavana and numbers of bhavana are differs. Details are tabulated in Table 4.

Table 4: Different Bhavana Media and Duration of Bhavana

	Reference	Bhavana Media	Duration
1	R.D ⁹	Gulab or ketaki or Chandana arka	Duration is not specified.
2	P.R.P ¹⁸	Gulab or ketaki or Chandana arka	21 days after that should dry under sunlight
3	R.B ³¹	Gulab Jala (samanya pishativat)	7 days
4	R.T.S.S ⁴¹	Gulab jala	7 days
5	B.V ⁴⁴	Gulab jala	Duration is not specified
6	A.S.S ⁴⁵	Gulab jala	10 to 12 days after that dry it under sunlight,
7	R.T.S.S ⁴⁶	Gulab jala	10 days
8	AFI ⁴⁷	Kumari swarasa, Ketaki swarasa, Jalapipali Swarasa, Kadali Kanda Rasa.	Duration is not specified, after completion dry it under sunlight

R.D-Rasadarpana , P.R.P- Prarambhika rasa parichaya , R.B-Rasa bindu , R.T.S.S-Rasa tantra sara va sidhdha yoga sangraha, B.V-Bhasma vigynana, A.S.S-Ayurveda sara sangraha , AFI-Ayurvedic Formulary of India.

After complete drying of pishti, mardhana should carry out to make it fine powder and store in air tight container.

Akika Karmukata: The karmukata of Akika according to various rasa texts are given in Table 5.

Table 5: Karmukata of Akika

	RD ⁹	RB ³¹	RV ³⁶	RTSS ⁴¹	RS ⁴⁸	SBMM ⁴⁹	RM ⁵⁰	BV ⁵¹	ASS ⁵²	UDG ²⁰
Hridya	+	-	+	+	-	-	+	-	+	+
Vrushya	-	+	+	-	-	+	+	-	-	-
Raktajanaka	-	-	+	-	-	-	+	-	-	-
Netrya	+	-	-	-	-	-	+	-	-	+
Rakta sangrahaka	-	-	-	-	-	-	-	-	-	+
Dwijadhrudakaroti	-	-	-	-	-	+	+	-	-	-
Balya	-	-	-	+	-	-	-	-	+	-
Kamottejaka	-	-	-	-	-	-	-	-	-	-
Manasa Baladaayaka	+	-	-	-	-	-	-	+	-	-
Ashmari Nashaka	+	-	-	-	-	-	-	-	-	+
Ojovardhaka	+	-	-	-	-	-	-	-	-	-
Mastishkya	+	-	-	-	-	-	-	+	-	-
Medhya	-	-	-	-	+	-	-	-	-	-
Smaranashakti Vardhaka	-	-	-	-	+	-	-	-	-	-
Pramathi	-	-	-	-	-	-	-	-	-	+
Rakta sthambi	-	-	-	-	-	+	+	-	-	+
Vruna ropaka	-	-	-	-	-	-	-	-	-	+
Vruna shoshaka	-	-	-	-	-	-	-	-	-	+

Note: '+' indicates respective texts are described '-' Indicates that respective texts have not mentioned.

Indication

The indications of akika can be classified in to 2 categories based on its end form i.e. indications of Akika Bhasma and indications of Akika pishti. The opinions according to different author have been tabulated in table 6 and 7.

Table 6: Indication of Akika Bhasma

Diseases	RD ⁹	PRP ¹⁸	RB ³¹	RTSS ⁴¹	ASS ⁴⁵	RM ⁵⁰	SR ⁵³	AFI ⁵⁴	UDG ²⁰
Andhatwa	-	-	-	+	+	-	+	-	+
Raktapitta	+	+	-	-	+	-	-	-	-
Hridroga	-	+	+	+	+	-	-	+	+
Yakrut vikara	-	-	-	-	+	-	-	-	+
Ashmari	+	+	-	-	-	-	-	-	+
Rakta pradara	+	+	+	-	+	+	-	-	-
Murcha	-	-	-	-	+	-	-	-	-
Prameha	+	-	-	-	-	-	-	-	-
Teevra jwara	-	+	-	-	-	-	-	-	-
Unmada	-	-	-	-	+	-	-	-	-
Kasa	-	-	-	-	+	-	-	+	-
Rakta srava	+	+	-	+	+	+	-	-	+
Vruna	-	-	-	-	+	-	-	-	-
Shweta pradara	-	+	-	+	-	-	-	-	-
Daha	-	+	-	-	-	+	-	+	-
Rakta shtivana	-	+	-	-	+	-	-	-	-
Antra kshaya	-	-	-	-	-	-	-	-	-
Hridayavasada	-	-	-	-	+	-	-	-	-
Kshaya	-	-	-	-	-	-	-	+	-

Note: '+' Indicates respective texts are described. '-' Indicates that respective texts have not mentioned.

Indication of Akika Pishti

Table 7: Indications of Akika Pishti

Roga	RD ⁹	RV ³⁶	ASS ⁴⁵	AFI ⁵⁴	RM ⁵⁵	BPRK ⁵⁶	RP ⁵⁷	RAS ⁵⁸	UDG ²⁰
Hrididaha	-	-	-	+	-	+	-	-	-
Atihrit spandan	-	-	-	-	+	-	-	+	+
Hridaya Dourbalya	+	-	+	-	+	-	-	+	+
Hridroga	-	+	-	-	-	+	-	+	-
Kshaya	-	-	-	+	-	+	-	-	-
Shiroroga	-	+	-	+	+	+	-	-	-
Pitta roga	-	-	-	+	-	+	-	-	-
Vataroga	-	-	-	+	-	-	-	-	-
Rakta pradara	+	-	-	-	+	+	-	-	+
Netra vikara	-	+	-	-	+	-	+	-	+
Netra daha	-	-	-	-	-	+	-	-	-
Bleeding gums	-	-	-	-	+	-	-	-	+
Rakta chapa	+	-	-	-	-	-	-	-	-
Prameha	+	-	-	-	-	-	-	-	-
Rakta pitta	+	-	+	-	-	+	-	-	-
Amlapitta	-	-	-	-	-	+	-	-	-
Kasa	-	-	-	+	-	+	-	-	-
Jwara,	-	-	+	-	-	+	-	-	-
Raktasrava	-	-	-	-	+	+	-	-	+
Anidra	-	-	-	-	-	-	+	-	-
Unmada	-	-	-	-	-	-	+	-	-
Visha	-	-	-	-	-	-	+	-	-
Yakrit-pleeha rakta srava vikara	-	+	-	-	-	-	-	-	-
Raktarsha	-	-	-	-	-	-	-	-	+
Rakta shtivana	-	-	-	-	-	-	-	-	+

Note: '+' Indicates respective texts are described, '-' Indicates that respective texts have not mentioned.

Matra and Anupana of Akika Bhasma and Pishti

Table 8: Matra and Anupana of Akika Bhasma and Pishti

Reference	Bhasma Matra	Pishti Matra	Anupana
AMMA ⁴	1-4 Ratti	Not mentioned	Godugdha, Navaneeta
RD ⁹	2-4 Ratti	2-4 Ratti	Madhu, Navaneeta and Dugdha
PRP ¹⁸	2-4 Ratti	2-4 Ratti	Madhu, Dugdha & Navaneeta
RB ³¹	2-4 Ratti	2-4 Ratti	Not mentioned
RTSS ⁴¹	2-3 Ratti	1-3 Ratti	Madhu, Navaneeta
BV ⁴⁴	1-4 Ratti	Not mentioned	Navaneeta and Amalaki swarasa
ASS ⁴⁵	1-3 Ratti	Not Mentioned	Madhu, Navaneeta
BV ⁵¹	½-1 Ratti	½ -1 Ratti	Not mentioned
AFI ⁵⁴	Not mentioned	125-250mg	Madhu, ashvagandha swarasa, ardraka swarasa
RM ⁵⁵	2-4 Ratti	4 Ratti	Apple juice
BPRK ⁵⁶	Not mentioned	2-4 Ratti	Madhu
UDG ²⁰	1-4 Ratti	4-12 Ratti	Sharbat
USYS ⁵⁹	2 Ratti-2 Masha	2Ratti-2Masha	Kushmand swarasa

Apakva Akika Bhakshana Dosha

It is ahitakara to Vrakka(kidney) and Kantha(throat) if taken without proper prepration²⁰.

Upashaya:

Dosha nivarana is by intake of kateera beeja with Kushmand Beeja/ kadudaka beeja²⁰.

Pratinidhi dravya: Abhraka (Mica) and Pravala shakh²⁰.

Matra: 1g-2g²⁰.

DISCUSSION

The main two objectives of Rasashastra utpatti are dhatuvada and dehavada. The ratnoparatna varga drugs are very much helpful in filling above said both objectives. Ratna varga drugs are having distinctive properties like Kathorata, Varna and Deerghanjivita these properties are much useful for their acceptances in the ashtadasha Samskara of Parada. In the process of jarana if one wants to do “Khechari Jarana” he should

perform Jarana by means of ratna varga drugs, which are helpful in the achievement of amaratva (Longevity of life). Apart from this, in paradadi karma also ratnavarga drugs are used extensively.

After extensive probing into Literature it can be revealed that Akika is a well-known Gem to the people across the world from the time immemorial. It was being used in ornamental as well as astrological purposes since ages. But the references of its medicinal application could be found only from Rasakala. In the field of Rasashastra previously the Gems like Akika were being used in different Parada Karmas, hence it is mentioned under Paradadi varga. The current source available in the name of Akika seems to be Agate (silicon di- oxide). Agate is a common semiprecious Silica mineral that has long been used as a gem and Chalcedony, which is a form of ‘Quartz’ and chemical composition of SiO₂. It is a cryptocrystalline variety of the mineral Quartz. It makes up about 12% of the earth’s crust.

CONCLUSION

Akika is having kashaya and madhura rasa, sheeta veerya, madhura vipaka and gunas like pitta shamaka, rakta sthambaka, hridaya, netrya and hridaya prabhava are mentioned in Ayurvedic literatures based on which many pharmaceutical companies are preparing Akika pishti as well as bhasma extensively to serve mankind.

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