

Review



A review of *Uparatnas* in *Rasashastra*

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ABSTRACT:

Background: *Rasashastra*, a unique alchemical science of *Ayurveda*, mainly deals with the preparation and use of various formulations derived from metals, minerals, or those of a metallo-mineral origin. In addition to these, a special category has also been separately mentioned, which not only holds astrological importance but is also used for treating different ailments. *Ratnas* (precious stones) and *Uparatnas* (semi-precious stones) belong to this category. Various *Acharyas* have mentioned about nine *Ratnas* and seven *Uparatnas*. However, due to the high cost and rare availability of *Ratnas*, routine use of formulations containing *Ratnas* such as *Navaratnarajamriganka Rasa* has become rare in regular practice. **Aims:** The current article focuses on the compilation of *Uparatnas* from various sources to evaluate their utility in *Rasashastra*. **Methods and Material:** An exclusive review of the available books of *Rasashastra* such as *Ayurved Prakasha*, *Rasa Prakashika*, etc was done to compile the available literature on *Uparatnas*. **Results:** It was observed that *Uparatnas* have more or less similar properties to that of *Ratnas*. On the other hand, *Uparatnas* are abundantly available and more cost-effective. **Conclusions:** Hence if *Uparatnas* are used more in routine practice, they can prove to be a better alternative to *Ratnas*.

KEYWORDS: *Rasashastra*, *Ratnas*, *Uparatnas*, precious stones, semi-precious stones, etc.

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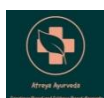
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1. INTRODUCTION:

The word *Rasashastra* means “Science of Mercury”. [1] It is a special branch of *Ayurveda* that mainly deals with drugs known as ‘*Rasa Dravyas*’. *Rasa Dravyas* include various metals, minerals, metalo-minerals as well as a special category of minerals called *Ratnas*. *Ratnas* are precious gemstones that have always caught the eye of the elite and have enjoyed the glory of being in the crown of kings and expensive jewelry for a long time. These gemstones are broadly divided into precious and semi-precious variants. Among them, *Ratnas* are precious stones, nine in number, and are categorized according to their effect on various planets, [2] whereas *Upratnas* are semi-precious stones, which are also categorized according to planets to some extent. Compared to *Ratnas*, *Upratnas* are more numerous. Nowadays, many new semi-precious stones, which are not mentioned in the classics are also seen in the market. In *Rasashastra*, there are some exclusive formulations mainly comprising *Ratnas* which are less commonly used for their remedial purposes such as *Navaratnarajamriganka Rasa*. [3] The reason for this is their high price and rare availability. On the other hand, *Upratnas* are comparatively cheaper, more readily available, and can be used as a better alternative to *Ratnas*. *Upa* means “near,” while *Ratna* means “gemstone”. [4] *Upratnas* are gemstones, that are similar to *Ratnas* but less attractive in comparison. When compared with *Ratnas*, *Upratnas* have less transparency, luster, hardness, durability, and attractiveness. The present article is an effort to review

Uparatnas and compile their properties in the context of *Rasashastra*.

Aim & Objectives:

- To review *Upratnas* from *Rasa* literature.
- To compile the various properties of *Uparatnas* from different texts.

2. MATERIALS & METHODS

Number of *Uparatnas* (Table 1)

There are differences in the opinions of *Acharyas* regarding the number of *Uparatnas*. According to *Rasa Tarangini* and as per *Rasa Jala Nidhi*, there are six *Uparatnas*; twelve according to *Ayurveda Prakasha*, and as per *Ananda Kanda* nine.

Table 1 – Number of *Uparatnas* according to various *Acharyas*

<i>Rasa Tarangini</i> [5]	<i>Rasa Jala Nidhi</i> [6]	<i>Ayurveda Prakasha</i> [7]	<i>Anand Kanda</i> [8]
<i>Vaikranta</i>	<i>Palanka</i>	<i>Vaikranta</i>	<i>Vaikranta</i>
<i>Suryakanta</i>	<i>Rudhira</i>	<i>Suryakanta</i>	<i>Suryakanta</i>
<i>Chandrakanta</i>	<i>Putika</i>	<i>Chandrakanta</i>	<i>Chandrakanta</i>
<i>Nripopala</i>	<i>Tarkshaja</i>	<i>Rajavarta</i>	<i>Rajavarta</i>
<i>Perojaka</i>	<i>Upala</i>	<i>Lala</i>	<i>Perojaka</i>
<i>Sphatika</i>	<i>Sugandhika</i>	<i>Perojaka</i>	<i>Taarkanta</i>
		<i>Mukta Shukti</i>	<i>Kaanta</i>
		<i>Shankha</i>	<i>Sasyaka</i>
		<i>Karpurashma</i>	<i>Vimala</i>
		<i>Kachaja</i>	
		<i>Nila Mani</i>	
		<i>Pita Mani</i>	

Relation of Planets with *Uparatnas* [9] (Table 2)

Table 2 – Relation of planets with *Uparatnas*

Planet	<i>Uparatna</i>
<i>Surya</i>	<i>Suryakanta</i>
<i>Chandra</i>	<i>Chandrakanta</i>
<i>Shani</i>	<i>Rajavarta</i>
<i>Ketu</i>	<i>Perojaka</i>

Regarding other planets, the exact classical reference of their effect on a particular planet is not clearly mentioned.

***Uparatnas* - Nomenclature and Occurrence** [10] (Table 3)

Table 3 - Nomenclature and Occurrence of *Uparatnas*

<i>Uparatna</i>	English name	Sanskrit name	Hindi name	Occurrence
<i>Vaikaranta</i>	Tourmaline or Fluor spar	<i>Vaikaranta, Vikranta, Jirnavajraka, Kshudrakulisha, Kuvajraka, Churnavajra, Dagdhahiraka, Nichavajra, Tamrakam, Pulaka, Tamra Ratna, Tamrashma.</i> [11]	<i>Vaikranta</i>	Ores of South Africa, Canada, Peru, Mexico, Thailand, Norway, Germany, and UK. In India, it is found in Rajasthan and Gujarat.
<i>Suryakanta</i>	Sun Stone	<i>Suryamani, Suryapala, Diptopala, Vahnigarbha, Jvalanopala.</i> [12] <i>Tapana Mani, Tapana, Ravikant, Agnigarbha, Jvalanashma, Arkopala, Vasu.</i> [13]	<i>Suryakanta</i>	Found in Southern Norway and in some localities of Unites States.
<i>Chandrakanta</i>	Moon Stone	<i>Chandrakanta, Chandramani, Chandropala, Indukanta, Shashikanta,</i> [14] <i>Chandrashma, Chandrajopala, Sheetatma, Chandrikadrava.</i> [15]	<i>Chandrakanta</i>	
<i>Rajavarta</i>	Lapis Lazuli	<i>Rajavarto, Nripavarta, Avartamani, Nripopala, Nilashma,</i> [16] <i>Rajanyavartaka, Avartamani, Avarta.</i> [17]	<i>Lajavarda</i>	Burma, Rajputana and Ajmer district of Rajasthan.
<i>Perojaka</i>	Turquoise	<i>Peroja, Peroja Mani, Haritashma, Harinmani.</i>	<i>Piroja, Firoja</i>	Iran, Arizona, California, Colorada, New Mexico, Afghanistan, Australia.
<i>Sphatika Mani</i>	Rock Crystal, Quartz	<i>Sphatika, Sphatikadrashat, Sphatikashma, Sphatikopala, Shalipishta, Dhautashila, Shivaratna, Shivapriya, Sitopala, AmalaMani,</i> [18]	<i>Sphatika</i>	Brazil (Itapor, Goiaz), US (North Carolina), Switzerland, France, Madagascar. In India, Naini area of Allahabad district, Uttar Pradesh, Bihar, Rajasthan, Maharashtra and Andhra Pradesh.

		<i>Sheetopala, Nirmalopala, Swaccha, Swacchamani, Amlaratna, Nishtushratna, Sikhipriya</i> . [19]		The <i>Mandakanti</i> variety of <i>Sphatika</i> is found in forests in the Vindhya hills and the Black variety in mines of Sapphire in Ceylon. [20]
Rudhiram	Carnelian	<i>Rudhiram</i>	<i>Rudhiram</i>	Brazil, Siberia, and Germany, India (Ratanpur).
Putika	Peridote	<i>Puttika, Putrika, Komala, Ghritamani</i>	<i>Putika</i>	Egypt, North, Carolina, Arizona on the San Carlos Reservation, Hawaii, Nevada at New Mexico, Australia, Brazil, China, Kenya, Mexico, Myanmar, Norway, Pakistan, Saudi Arabia, South Africa, Sri Lanka, and Tanzania.
Palanka	Onyx	<i>Palanka</i>	<i>Palanka</i>	Uruguay and bordering regions of Brazil, Afghanistan, India, Madagascar, Peru, and the US (Colorado, Utah, California, Arizona, and Oregon).
Sugandhikam	Spinel	<i>Sugandhikam, Sugandhika</i>	<i>Sugandhikam</i>	<i>Brahmalesha</i> (Burma), Afghanistan and Siyam.
Trinakanta	Amber	<i>Trinakantamani, Trinagrahi</i>	<i>Trinakantamani</i>	Alaska, California, Massachusetts, New Jersey, New Mexico, North Carolina, Washington, the Baltic region includes Denmark, Sweden, Germany and Poland, Russia.

Types of *Uparatnas* (Table 4)

Table 4 – Types of *Uparatnas*

UPARATNA	TYPES
Vaikaranta	<i>Shweta, Rakta, Peeta, Neela, Paravataprabha, Shyama, Krishna, Karbura, Mayurakantha Sadrishya, Markataprabha</i> . [21]
Suryakanta	Not mentioned
Chandrakanta	Not mentioned
Rajavarta	<i>Churnakriti Rajavarta and Golakriti Rajavarta</i> . [22] <i>Alparakta Varna</i> (Pale red), <i>Nila Varna</i> (Blue color) <i>Misrita Varna</i> (Mixed color). [23]
Perojaka	<i>Bhasmanga</i> (Ash color) and <i>Harita</i> (Green color). [24]

Sphatika Mani	Not Mentioned
Rudhiram	Not Mentioned
Putika	Olivine (dark green) and Chrysolite (Yellowish green). [25]
Palanka	Black, Pale Black, Ash colored. [26]
Sugandhikam	Not Mentioned
Trinakanta	<i>Nirmala Trinakanta, Snehi Trinakanta, Varnashankara Trinakanta, Asthimaya Trinakanta, Zagadara Trinakanta.</i> [27]

Mineralogical Identification of *Uparatnas* [28, 29] (Table 5)

Table 5 – Mineralogical identification of *Uparatnas*

<i>Uparatna</i>	Chemical Formula	Chemical Name	Diaphaneity	Specific gravity	Hardness	Refractive index
<i>Vaikaranta</i>	$K_2OAl_2O_36SiO_2$	Tourmaline	-	3.18	4	1.43
<i>Suryakanta</i>	$(NaCa)AlSi_3O_4$	Silicate of Sodium, Aluminum, and Calcium	Transparent to Translucent	2.5	5.5	1.525 – 1.58
<i>Chandrakanta</i>	$K(AlSi_3O_8) + NaFeBa$		Opalescent	2.61	6	1.518 – 1.526
<i>Rajavarta</i>	$Na_4(NaS_3Al) Al_2(SiO_3)_3$	Sodium Calcium Aluminosilicate	Translucent	2.38 – 2.45	5 – 5.5	1.5
<i>Perojaka</i>	$CuAl_6(PO_4)_4(OH)_8 5(H_2O)$	Hydrous Copper Aluminum Phosphate	Opaque	2.6 to 2.9	5 to 6	1.61 to 1.65
<i>Sphatika Mani</i>	SiO_2	Silicon-dioxide	Transparent to nearly Opaque	2.59 to 2.65	7	1.544 - 1.553
<i>Rudhiram</i>	$SiO_2 + (Fe, O, OH)$	Silica (Silicon dioxide)	Transparent to nearly Opaque	2.61 to 2.65	6 - 7	1.53-1.55
<i>Putika</i>	$(Mg, Fe)_2SiO_4$	Magnesium ferrous silicate	-	3.3-4.3	6.5-7	1.64-1.70
<i>Palanka</i>	SiO_2	Silicon dioxide with Carbon and Iron	Translucent	2.55- 2.70	6.5-7	1.53-1.54
<i>Sugandhikam</i>	$MgAl_2O_4$	Magnesium aluminum oxide	-	3.58- 3.61	7.5-8	1.719
<i>Trinakanta</i>	CHO	Fossilized tree resin with impurities	Transparent	1.08	2.5	1.54 – 1.55

Shodhana, Marana, Pishtikarana and Satvapatana of Uparatnas (Table 6)

Table 6 - Shodhana, Marana, Pishtikarana and Satvapatana of Uparatnas

Uparatna	Shodhana	Marana	Pisti	Satvapatana
Vaikranta	Swedana in <i>Dolayantra</i> with <i>Amladravyas</i> or <i>Ashvamutra</i> or <i>Kulattha Kwatha</i> , for three days. [30]	<i>Bhavana</i> with <i>Ashvamutra</i> and subject to eight <i>Gajaputas</i> . [31]	-	<i>Vaikranta Churna</i> is levigated with <i>Guggulu</i> , <i>Ghrita</i> , <i>Madhu</i> , <i>Tankana</i> and <i>Pancha Mahisha</i> kept in <i>Moosha</i> . <i>Dhamana</i> in <i>Koshthi</i> for three hours. [32]
Suryakanta	Swedana in <i>Dolayantra</i> with <i>Nimbu Swarasa</i> for nine hours. [33]	Levigation with <i>Suddha Gandhaka</i> and subject to seven <i>Gajaputas</i> . [34]	-	
Chandrakanta	Swedana in <i>Dolayantra</i> with <i>Nimbu Swarasa</i> for nine hours. [35]	Levigation with <i>Shuddha Manahsila</i> , and <i>Shuddha Hingula</i> one <i>Bhavana</i> of <i>Kumari Swarasa</i> , and subject to seven <i>Gajaputas</i> . [36]	<i>Gulab Jala Bhavana</i> for 21 days. [37]	
Rajavarta	Swedana in <i>Dolayantra</i> with <i>Nimbu Swarasa</i> , <i>Gomutra</i> and <i>Yavakshara</i> . [38]	Levigation with <i>Shuddha Gandhaka</i> and give <i>Bhavana</i> of <i>Nimbu Swarasa</i> for three days, and subject to eight <i>Gajaputas</i> . [39]	Levigate with Apple juice for 14 days. Then fill it with Apple juice above <i>Pishti</i> up to one <i>Angula</i> and grind for three hours for three days. Then separate from clear juice. [40]	Equal quantities of powder of <i>Shuddha Rajavarta</i> and <i>Shuddha Manahshila</i> are levigated with <i>Ghrita</i> . This is heated by adding <i>Mahisha Ksheera</i> till it becomes semi-solid. <i>Tankana</i> and <i>Panchagavya</i> is added and subject to strong heat in <i>Koshthi</i> by <i>Khadira Angara</i> . [41]
Perojaka	Swedana in <i>Dolayantra</i> with <i>Go-Dugdha</i> or <i>Aja-Dugdha</i> or <i>Nirvapa</i> in <i>Bijapura swarasa</i> for seven times. [42]	Levigation with <i>Shuddha Gandhaka</i> and give <i>Bhavana</i> of <i>Nimbu Swarasa</i> for three days, and subject to eight <i>Gajaputas</i> . [43]	-	-

Sphatika Mani	Swedana with <i>Ksharayukta Gomutra/ Nimbu Swarasa</i> in <i>Dolayantra</i> . [44]	Levigation with <i>Shuddha Gandhaka</i> and give <i>Bhavana</i> of <i>Nimbu Swarasa</i> for three days, and subject to eight <i>Gajaputas</i> After five putas levigate with <i>Go-Dugdha</i> and subject to two <i>Gajaputa</i> . [45]	-	
Putika	<i>Nirvapa</i> in <i>Go-Dugdha</i> for 21 times.	<i>Bhavana</i> with <i>Go-Dugdha</i> and subject to <i>Gajaputa</i> .	<i>Bhavana</i> of <i>Gulab Arka</i> or <i>Chandana Arka</i> or <i>Go-Dugdha</i> .	
Palanka	Swedana in <i>Dolayantra</i> with <i>Changeri Swarasa</i> for two <i>Yama</i> (Six Hours). [46]	Levigation with <i>Shuddha Gandhaka</i> and <i>Shuddha Hartala</i> & give <i>Bhavana</i> of <i>Nimbu Swarasa</i> for two days, and subject to three <i>Gajaputas</i> . [47]	-	
Sugandhikam	Swedana in <i>Dolayantra</i> with <i>Changeri Swarasa</i> for two <i>Yama</i> (6 Hours). [48]	Levigation with <i>Shuddha Gandhaka</i> and <i>Shuddha Hartala</i> & give <i>Bhavana</i> of <i>Nimbu Swarasa</i> for two days, and subject to 3 <i>Gajaputas</i> . [49]	-	
Trinakanta	Swedana in <i>Dolayantra</i> with <i>Changeri Swarasa</i> for two <i>Yama</i> (Six Hours). [50]	<i>Bhavana</i> with <i>Durva Swarasa</i> and subject to three <i>Putas</i> . [51]	<i>Amlaki Swarasa Bhavana</i> for seven days. [52]	

Properties, Dose, Anupana, and Therapeutic Use of *Uparatna* (Table 7)

Table 7 - Properties, dose, Anupana, and therapeutic use of *Uparatna*

Uparatna	Properties	Dose	Anupana	Clinical Indications
Vaikaranta	It has characteristics like a Diamond and can cut <i>Loha, Tamra</i> , etc. It is <i>Medhya, Deepana, Rasayana, Tridoshanashaka, Yogavahi, Balya, Pachana, Tvachya, Deha Dardhyakara</i> . [53]	1/24 to 1/11 <i>Ratti</i> [54] (5.2 mg to 11.3mg), 1/8 to ½ <i>Ratti</i> [55] (15.6mg to 62.5mg).	<i>Madhu, Sharkara, Ghrita, Dugdha</i>	<i>Rajyakshma, Jara, Shosha, Jwara, Pandu, Udara Roga, Shwasa, Kasa, Prameha</i>
Suryakanta	<i>Ushna Virya, Vata-Kaphahara, Rasayana</i> and	¼ to 1 <i>Ratti</i> (31 mg	<i>Madhu,</i>	

	<i>Medhya</i> . The planet sun is propitiated if this stone is kept carefully. [56]	to 125 mg).	<i>Navneeta</i> .	
Chandrakanta	1. <i>Snigdha Guna, Sheeta Virya, Pitta Nashaka, Rakta-Pitta Prashamanaka</i> . [57] 2. <i>Chandrakanta is Sheeta Virya, Snigdha, Raktapitta Prashamanaka</i> . It is liked by <i>Shiva</i> and removes the malefic influence of planets and misfortune. [58]	¼ to 1 <i>Ratti</i> [59] (31mg to 125 mg).	<i>Madhu</i> .	<i>Raktapitta, Paitika Vikara, Daha</i> .
Rajavarta	<i>Katu-Tikta, Snigdha, Sheeta, Pittashamaka</i> . [60] Useful in <i>Prameha Roga, Kshaya, Arsha</i> , and <i>Pandu Roga</i> and it is <i>Kapha-Vata Nashaka</i> . It is good <i>Agni Dipaka</i> (Appetizer), <i>Pachaka</i> (digestive), <i>Vrishya</i> (Aphrodisiac), and <i>Rasayana</i> (rejuvenator). [61]	1-2 <i>Ratti</i> (125mg-250mg) twice a day. [62]	<i>Madhu, Go-Ghrita</i> .	<i>Prameha, Kshaya, Pandu, Shosha, Madatyaya, Chhardi, Hikka</i> .
Perojaka	<i>Kashaya and Madhura Rasa, Sara Guna and Sheeta Virya. Agni Deepaka and Shulanashaka</i> . It nullifies the influence of <i>Sthavara, Jangama</i> , and <i>Kritrima Visha</i> and is a good laxative. [63]	1/2 <i>Ratti</i> to 2 <i>Ratti</i> [64] (62 mg to 250 mg).	<i>Navneeta, Ghrita + Maricha Churna</i> . [65]	<i>Shoola, Dushi Vishaghna</i> (All types of <i>Visha</i>), <i>Netra Roga</i> .
Sphatika Mani	<i>Madhura Rasa, Sheeta Virya</i> (extremely cold as ice). It is <i>Balya</i> (Improves physical strength) and <i>Raktapitta Shamaka</i> . [66]	½ <i>Ratti</i> to 1 <i>Ratti</i> (62 mg to 125 mg).	<i>Madhu</i> (Honey), <i>Go-Ghrita</i> .	<i>Jwara, Raktapitta, Daha</i> .
Putika	<i>Madhura Rasa, Laghu Guna, Sheeta Virya, Medhya, Hridya, Vishaghna, Ojas</i> , Aphrodisiac.	2- 4 <i>Ratti</i> (250 to 500mg)		Useful in <i>Ashmari, Raktapitta, Arsha and Pradara</i>
Sugandhikam	<i>Madhura, Snigdha, Aphrodisiac, Hrudy, Deepana, Medhya, Balya</i> and <i>Rasayana</i> .	¼ <i>Ratti</i> to ½ <i>Ratti</i> (31 mg to 62 mg)		
Trinakanta	<i>Ruksha, Anushnasheeta, Hridya, Grahi, Rakta Stambhaka, Indriya Prasadaka</i>	1 to 2 <i>Masha</i> [67] (1 g to 2 g).	<i>Madhu, Go-Dugdha</i> .	<i>Hriddaurbalya, Raktapitta, Hradgativruddhi, Raktatisara, Raktapradara, Raktarsha, Raktasthivana, Urahkshata</i> .

Formulations of *Uparatna* [68, 69] – (Table 8)

Table 8 - Formulations of *Uparatna*

<i>Uparatna</i>	<i>Yoga</i>
<i>Vaikranta</i>	<i>Vaikranta Rasayana, Apurva Malini Vasant Rasa, Vadvanala Rasa, Panchanano Rasa, Mutrakruchantak Rasa, Vaikrantakhya Rasa, Ratnagiri Rasa, Ratneshwar Rasa, Ratnakara Rasa.</i>
<i>Rajavarta</i>	<i>Rajavarta Avleha, Rajavartadi Rasa, Rajavartadi Yoga, Mukyadi Mahanjana, Ratnakarando Rasa.</i>

Varnas of Pishti of Uparatnas – In classics the *Varnas* of the *Pishtis* of *Uparatnas* is not clearly mentioned. There are few market available *Pishtis* whose color can be mentioned. Eg. *Trinakanta Pishti – Shweta Varna, Chandrakanta Pishti – Sweta Varna*. The colour of the *Pishtis* can be understood by the colour of the original *Uparatnas* and its *Bhavana Dravya*. However it can be said that pastel shades of the original *Uparatnas* can be the colour of the obtained *Pishtis*.

3. DISCUSSION

Ratnas popularly known as gems or precious stones and *Uparatnas* or semi-precious stones were commonly used preferably by the rich in their ornaments. Also, their use for reducing or enhancing some effects of planets in astrology was prominent. The use of *Ratnas* in the form of medicines became prevalent in *Rasashastra* later. There are various references regarding the number of *Uparatnas* by various authors. A total of twelve *Uparatnas* can be considered after compilation of all the references. On considering the source of these *Uparatnas*, it can be said that the origin is scattered throughout the globe. A few of them like *Rajavarta, Rudhiram* are also found in India. The

composition of these *Uparatnas* suggests that they are made up of Silica, copper, aluminum, iron, etc because of which they get a distinct appearance. Even though we get classical references of only a few *Uparatnas* in relation to a particular planet, in routine practice, they are used in relation to nine planets considering their particular color. The specific gravity of *Uparatnas* varies from 1 to 5, hardness from 4 to 8, while the refractive index varies from 1.4 to 1.8. *Shodhana, Marana, Pishti, and Satvapatana* of *Uparatnas* are given in classics with various methods. Therapeutically these *Uparatnas* are indicated with various *Anupanas* in diseases like *Rajayakshma, Jwara, Chardi, Shosha*, etc, while the dose varies from 1/24 *Ratti* to 2 *Masha*.

4. CONCLUSION

1. Initially *Ratnas* and *Uparatnas* were used only for ornamental and astrological purposes. However, after the development of *Rasashastra*, their use as medicine became common.
2. Due to high cost and rarity, the use of *Ratnas* as medicine has faced limitations. As compared to *Ratnas*, *Uparatnas* are much cost effective and readily available hence if explored through various studies, they can

prove to be a better alternative in medicines in place of *Ratnas*.

3. Thorough studies on *Uparatnas* are the need of the hour to come to a definite conclusion.

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