

# International Journal of Ayurveda and Pharma Research

# **Review Article**

# KUTIPRAVESHIK RASAYANA- A REVIEW

# Sejal Shah<sup>1\*</sup>, Harshit Shah<sup>2</sup>

\*1Research Officer, Indian Systems of Medicine & Homeopathy, Gandhinagar, Gujarat, India. 2Associate Professor, GAAC, Ahmedabad, Gujarat, India.

# ABSTRACT

The Vedas have seriously considered the problem of aging and its prevention. It has been the cherished wish of human race to achieve long life and to live at least 100 year in perfect health; probably this idea at a later stage necessitated the development of complete clinical discipline like *Rasayana* to deal with the problem of aging, its prevention, and rejuvenation of body. In Sushruta Samhita being a text preliminarily dealing with surgical discipline has discussed different problem of *Rasayana* therapy in a different way. The most important contribution of Sushruta and Dalhana to development of *Rasayana tantra* is the classification of *Rasayana* measures and made *Rasayana* therapy more practical, applied and useful. One distinct observation made by Sushruta regarding the age factor in selection of the subject for *Rasayana* therapy is the indication in younger and middle age groups. At the same time, the main aim of Geriatrics is to study the changes in the tissue during the aging process and attempt to make the lives of old persons comfortable. If we compare *Rasayana* with gerontology we can find the major difference between them. In addition to prevention of ageing, *Rasayana* is aimed for longevity; maintenance of positive health; the improvement in mental faculties like intelligence, perseverance and memory; and resistance against disease. *Rasayana* essentially refers to the acceleration of the process of nutrition for the correct condition of the body tissue.

KEYWORDS: Geriatrics, Rasayana, Kutipraveshik, Jara.

# INTRODUCTION

After the invention of antibiotics though, the overall life span is increased but the problems of ageing and its diseases of ageing are at large. Many researches <sup>1,2,3</sup> have attended towards this problem and found that hormone replacement, calorie restriction, antioxidants are some of them. However, none of the researches till today has completely cured the ageing. The term *Rasayana*<sup>4,5,6</sup> has many meaning in the Sanskrit literature. For instance, a medicine suppose to prevent old age and prolong life, the drug used as verminfuge, channel for fluid the long pepper, mercury medical preparation etc. are also termed as *Rasayana*. Here we are concerned with its first meaning.

The word *Rasayana* comprises of two terms viz. from the words *Rasa* and *Ayana*. *Rasa* means the *Rasa dhatu* and the remaining *Dhatu rakta*, *Mamsa*, *Meda*, *Asthi*, *Majja* and *Sukra*. *Ayana* means the road, a path, a way, a movement. <sup>4,5,6</sup>

**Definition of** *Rasayana*: Therapy which gives the benefit of good *Rasa* is *Rasayana*. Hence, it is the therapy by which one gets the *Rasa*, *Raktadi Dhatus*<sup>4,5,6</sup> of optimum quality.

*Charaka*<sup>7,17,18,19</sup> has briefly defined *Rasayana*<sup>8,9,10</sup> as the measure by which one gets *Rasa*, *Rakta*, and etc *Dhatus* in its best condition. *Sushruta*<sup>11</sup> has defined *Rasayana* as the therapy which establishes the age (*Vayasthapana*), increases the life span (*Ayuskar*), intelligence (*Medha*) and strength (*Bala*)<sup>9,10</sup> as well as it enables the person to rid of the diseases.

The word "*Vayasthpana*" <sup>9,10-16</sup> has been explained by *Dalhana*<sup>27</sup> by giving its two meanings of "*Vayasthapana*" <sup>9,10</sup>. The first meaning is it enables the person to live a full life span of 100 years. The second meaning is that it makes the man to live young for a long period thus prevents the *Jara*<sup>9,10</sup>.

*Vagbhata*<sup>21</sup> gave the same definition of *Rasayana* as *Charaka*<sup>7,17,18,19</sup>. *Dalhana*<sup>27</sup> defined the *Rasayana* in two ways. First is the *Rasayana* is a therapy which provides *Rasa, Raktadi Dhatus*. According to the second definition, *Dalhana*<sup>27</sup> says *Rasayana* is a way or mean by which the best *Rasa, Virya, Vipaka* and *Prabhava* of the drug provide *Ayu, Bala, Virya* and firmness and prevention of ageing. In short *Rasayana* is the therapy which provides the optimum quality of the bodily tissues and the promotion of both physical and mental health, and prevents the ageing and diseases. This therapy enables the person to live for a longer youthful life.

# **MATERIALS AND METHODS**

We can find the existence of similar thought to *Rasavana* in the Vedic literature. There are descriptions of Devine *Rasayana* like *"Soma"* in *Atharvaveda*<sup>25</sup>. Some other common Rasayana drugs like Pipalli, Satvirya, Shatravirya, Jivanti have also been described. Similar to Charaka's concept of "Achara Rasayana" the description of the beneficial effect of "Sadavrutta"17,18,19 are described. Though Vedic literature does not show a direct description of the subject, definite evidence of the concept of rejuvenation and tissue regeneration are there. The Vedas have seriously considered the problem of aging and its prevention. It has been the cherished wish of human race to achieve long life and to live at least 100 year in perfect health; probably this idea at a later stage necessitated the development of complete clinical discipline like Rasayana to deal with the problem of aging, its prevention, and rejuvenation of body. No more description of Rasayana is available in *"Brahman"*<sup>25</sup> *Granthas. "Soma"* has given much importance and is termed as the king of medicine. In Ramayana Kala the use of *"Mritasanjivani"* is evident for *Rasayana*. In Mahabharata the eight branches of Ayurveda have been described. According to one incidence *"Kach*son of *Brihaspati,* went to *Guru Sukracharya*<sup>25</sup> to learn *Rasayana"*.

In Samhita Kala Charaka has given the extensive consideration to the subject. The first word of this Samhita is "*Dirghjivanam*" means the Long life. The first chapter in Chikitsa Sthana subdivided in four chapters is on *Rasayana* therapy, dealing with the physiological, pharmacological, therapeutics and clinical aspects of the subject. Around 200 *Rasayana* drugs, the single and the compound, herbs and the minerals are described there. Charaka<sup>9,10-16</sup> has advocated special mode of administrating the *Rasayana* therapies by specifying the outdoor and indoor regimen.

In Sushruta Samhita being a text preliminarily dealing with surgical discipline has discussed different problem of *Rasayana* therapy in a different way. The most important contribution of Sushruta and Dalhana<sup>27</sup> to development of Rasavana tantra is the classification of *Rasavana* measures and made *Rasavana* therapy more practical, applied and useful. One distinct observation made by Sushruta regarding the age factor in selection of the subject for Rasayana therapy is the indication in younger and middle age groups' He has given priority consideration to drugs like Vidange, Kashmari, Bala, and the divine drugs like 24 types of soma. In Kashaypa Samhita, available parts do not show any separate chapter on Rasayana. The scattered use of Rasayana drugs can be seen in this Samhita. Rasayana therapy is specifically indicated in the management of Rajyakshma. He also suggested Snehana, Swedana and Samsodhana karmas before the Rasayana therapy. Special drugs<sup>13,14,15,26</sup> used in this Samhita are Brahmi, Lasuna as single drugs and Satpuspa and Lasuna kalpa. In Bhel Smhita, no independent chapter of *Rasayana* therapy is available. However, there are significant elements of Rasayana therapy in this book. Bhel Samhita described Rasavana under "Dirghyushyopaya". The Achar Rasayana has been described with equal emphasis. A specific indication of Rasayana therapy in the management of "Rajyakshma" is there. Beside other Rasayana drugs, Bhel described the Rasayanika basti. Both the senior and junior Vagbhatta have largely adopted Rasayana from Charaka. Some new drugs have been added and some have been omitted. The modes of administration for Kutipravesika and Vatatipika Rasayana have been given same as Charaka. Lasuna kalpa is a new contribution of vagbhata<sup>21</sup>. However a number of drugs and compounds have been described by Vagbhata which are not mentioned in earlier Samhitas. Chakradutta has described the popular drug compounds <sup>13,14,15,26</sup> like Chvyanprasha, Bhallataka yogas, Vardhamana pippali, Loha Rasayana etc. in his book. For Rasayana the special use of Haritaki in various seasons under the term Ritu haritaki is also described by Chakradutt. A special emphasis is given to Loha and other minerals like Shilajatu, Swarna etc. Sarangadhara has clearly defined the Rasayana as a measure which relives aging and diseases. No independent chapter of Rasayana is there. A number of drugs have been

described possessing *Rasayana* property. *Rasayana* therapy appears to have been losing its identity as an independent discipline during the post Samhita period as is evident from the laser references made to *Rasayana* therapy in the texts written during this period.

Bhavaprakasha<sup>14</sup> contributes an independent chapter of *Rasayana*, where he specially mentions the use of cold water, milk, ghee, Punarnava Rasayana, Ashvaqandha Rasavana, etc. He has not described any classification of *Rasavana* neither commented in terms of Kutipraveshik and Vata tapika. Some of the yoga which have been newly introduced appears to hv Bhavaprakasha<sup>14</sup> is *Manjishtha*, *Mushali*, *Kumari*, *Shalmali*, Parad, Gandhaka, Hartala, etc. Yogaratnakara has been greatly influenced by Charaka. He contributes a full separate chapter for Rasayana and definitions of Rasayana and the expected effects are the same as described by the Charaka. There is no direct mention of Achar Rasayana, however, Medhya Rasayana have received attention in general. The author has described a special regimen of Vardhaman Bhallatak Prayoga. The text shows special emphasis and detail description of *Gandhaka Rasavana* a preparation which does not appear early in non Rastantra texts. It is possible that the use of *Gandhaka Rasayana* has been borrowed by Yogratnakar from earlier books of Rastantra.

Thus the practices of *Rasayana* therapy have seen many ups and downs. In the period of Charaka<sup>7,17,18,19</sup>, the *Rasayana* therapies appear to have been in full swing and appear to have been given and independent status. Though the concept of therapeutic value of *Rasayana* therapy existed in Vedas, the greater emphasis was on the use of *Rasayana* for the maintenance of positive health. During the period of Sushruta Samhita, though the descriptions are available in independent chapter, the emphasis is put towards the therapeutic aspects. The classification of Rasayana presented by Dalhana appears to be a step of acceptance of therapeutic aspect of *Rasayana* therapy. The division of Rasayana Prayoga in to Kamaya and Naimittik *Rasavana* indicate that by the time of Sushruta, Rasavana therapy has received equal emphasis on both the therapeutic as well as positive health aspects. The overall emphasis appears more towards the therapeutic aspects. Gradually Rasayana tantra appears getting submerged in the parallel discipline i.e. Kaya chikitsa.

Charaka not only gave separate and independent status to the *Rasayana tantra*, but also gave the importance by putting the *Rasayana tantra* in the beginning of the *Chikitsa Sthana*. In the *Madhyakala* the overall use of *Rasayana* was decreased. This time was influenced by mughals and the *Vajikarana* took prime importance. Moreover the Rasa-Sastra was the developing branch at that time and more concentration of the scholars was towards it.

# DISCUSSION

Charaka has described the following properties of *Rasayana* in detail. *Rasayana* promotes the longevity (*Dirgha Ayu*), Memory (*Smruti*), Intellect (*Medha*) Health and youth. Further *Rasayana* increases luster (*Prabha*), Complexion (*Vrana*), Voice (*Svara*), strength of the body and functions of both sense and motor organs to their

optimum level; Rasayana provides the reverence of the people, body glow *and* power. In other contests Charaka mentions that Rasayana<sup>7,17,18,19</sup> is a promotive of longevity, preservative of youth, dispersive of somnolence, torpor, fatigue, exhaustion, indolence and weakness, restorative of the balance of *Dosha*, it stabilizing, curative of flabbiness of flesh, simulative of digestion and metabolism and promotive of luster, complexion and voice.

Charaka confirms these properties of *Rasayana* by giving the example of *Chyavana Rushi* who was aged and became young with the application of *Rasayana* therapy. By the use of *Rasayana* the *Rishis* became most attractive to women, acquired compact, even and well proportioned limbs, well knit compact frames, unblemished strength, complexion and sense faculties, irresistible power in work and capacity to bear all the hardship of life.

Not only the long life, but the difficult to cure diseases like *Kustha Prameha* may be cured with special *Rasayana Kalpas*.

According to Sushruta the person who takes *Rasayana* become brave like lion, good in looking, and live long life without any disease up to 2000 years. In short *Rasayana*.

- Gives Long life
- Delays aging and death
- o Increase intelligence, memory and luster
- Excellence in the body tissues
- Increases the immunity
- $\circ \ \ \, \text{Removes diseases}$
- Gaining "Moksha" (Final Entity) and "Divya Lakshana"

### Types of Rasayana

**1)** According to mode of administration: Charaka has classified *Rasayana*, into two groups' viz. *Kutipraveshika Rasayana* and *Vatatapika Rasayana*. Out of this *Kutipraveshika* type of *Rasayana* is considered better for the rejuvenation. Brief description is as follow.

#### A) Kutipraveshika Rasayana

A special type of hospital is to be constructed and the patient is advised to stay within the hospital for the whole period of the therapy. After giving a course of purification therapy, the patient is administered the juice of one of the Divya medicine like Soma, Kapoti, Svetakaoti, Gonasi, Varahi etc. Sushruta<sup>27</sup> mentions that on the second day of taking juice, the patient vomits containing worms and blood and on the third day he passes loose motions containing worms. Next day the full body gets inflammation and worms comes out of it; on the seventh day he appears skinless and fleshless and bones are prominent. On the eighth day all teeth, nails and hairs also fall down, but simultaneously nourishment of the flesh starts. Tenth day his new skins is also established and after 17<sup>th</sup> day onwards the new teeth starts coming and 25<sup>th</sup> day new nails and hairs starts growing. Thereafter day by day he gets strength. During the first 40days patient is not allowed to expose to sun and wind and remains in the inner room. Thereafter gradually he is allowed to come in middle and then outer room of the special hospital. After four months he may be discharged from the hospital with all the benefits of Rasayana therapy.

### B) Vatatapika Rasayana<sup>7,17,18,19</sup>

The Administration of *Rasayana* therapy to patients as outdoor patients i.e. allowing him to move in open air and sun is known as *Vata-tapika Rasayana*. Only mild drugs can be administrated in this type of *Rasayana*.

# 2) According to Dalhana<sup>27</sup>

Dalhana while commenting on 27th chapter in Chikitsa Sthana of Sushruta Samhita has classified the *Rasayana* under the following main three groups.

a) Kamya Rasayana

b) Naimittika Rasayana

c) Aajastrika Rasayana

#### (A) Kamya Rasayana

This Rasayana<sup>7,17,18,19</sup> is observed for the wish (*Kamna*) of *Ayu, Bala, Medha* etc. This may be of three types.

- 1. Prana Kamya
- 2. Medha Kamya

3. Shree Kamya

### 1. Prana Kamya (promotion of physical health)

When the *Rasayana*<sup>7,17,18,19</sup> therapy is prescribed for the promotion of physical health, it is known as *Prana Kamya*. The drugs used in this type of *Rasayana* are *Satavari, Ashvagandha, Amalaki,* etc. These all may be called as *Balya Rasayana*.

### 2. Medhya Kamya

The *Rasayana* drugs administered for the promotion of mental health of an individual may be termed as *Medha Kamya Rasayana*. The drugs like *Shankhpuspi, Brahmi, Vacha, Mandukparni* may be included in this group.

# 3. Sh<mark>ree</mark> Kamya

The *Rasayana* therapy undertaken for the promotion of luster (*Prabha*), complexion (*Varna*), body glow (*Kanti*) etc. may be defined as *Shree Kamya*. It has been named so because after using this type of *Rasayana* drugs one earns general respect of the society and thus reverence of the people.

# (B) Naimittika Rasayana<sup>7,17,18,19</sup> (Immunity promoter)

When the *Rasayana* is used in a patient with the purpose of relieving a particular disease, it is said to be *Naimittika Rasayana*. The drugs used for this purpose work in double way as *Rasayana* as well as against the disease. These drugs may be used as independent or as adjuvant of the therapy. Some examples are below bellow:

Haritaki – Gulma, Pandu, Grahani Khadir – Kustha Bakuchi – Kustha, Pandu Brahmi – Unmada, Apasmar Pippali – Kasa, Shvasa, Kshaya, etc.

#### (C) Ajasrika Rasayana

This group of *Rasayana* enhances the "*Ojas*" in the body. To do this, the drug should be having same properties as the *Ojas*. *Ojas* is the ultimate product of all the *Dhatus* and it is well known that as the age increase the *Dhatus* get decreased in their quantity. So, by using these drugs the *Dhatus* can remains in their normal state.

The daily uses of milk, ghee, water, *Madhu* etc. are said as the *Ajasrika Rasayana*. This *Rasayana* can be

prescribed to anybody who is not suffering from any illness.

## 3) Samshodhana and Shamshamana Rasayana

This classification is based on the mode of action of the *Rasayana* drugs. They can be divided in two groups.

- a) Samshodhana
- b) Samshamana

## a) Samshodhana Rasayana

The *Rasayana* drugs which first purify the body and then bring the rejuvenation effect may be termed as *Samshodhana* (*Shodhana*) *Rasayana*. Here *Vidanga* and Soma can be taken as this type of *Rasayana*, as they show their effect after purifying the body.

### b) Samshamana Rasayana

The other *Rasayana* drug which acts through pacifying the *Doshas* can be known as the *Samshamana* (*Shamana*) Rasayana. *Nagbala* is the example of this group. **4)** *Achar Rasayana*<sup>7,17,18,19</sup>

In addition to above mentioned verities of Rasayana, there are one type of *Rasayana* where the drug is not employed, the person has to follow the code of conduct mentioned in texts and he gets all the benefits of *Rasayana*.

The habit of truth and the soft speaking, not hurting others, non violence, patience, repletion of holy chants, cleanliness, devotion to scriptural texts, respect for god, teachers, seniors, and elders. Regular taking of milk, ghee, and whole some diet, diligence in spiritual endeavor, always showing the mercy and avoidance of cruelty, balanced sleeping and waking, believing in god, self controlled, keeping blameless conduct and spiritual temperament, avoidance of egoism; mean thinking, alcohol, sex overstrained and anger; having the good knowledge of country, time, doses, etc. are Achar *Rasayana*. Keeping this type of habit and conducts give rise to most of the benefits of Rasayana therapy. If a person who is having all the above mentioned qualities uses the Rasayana drugs also, he will get all the benefits of the *Rasavana* therapy mentioned in the texts.

# 5) Miscellaneous Rasayana

Further more there are some other types of *Rasayana* mentioned in texts. *Brimhana* Rasayana which makes the body stout, *Lekhana* Rasayana which makes the body slim, *Ayushya Rasayana* which increases the lifespan and so on. However, all these may be grouped under one or other type of *Rasayana* mentioned above.

*Kutipravesika Rasayana*<sup>4,5,6</sup>: As described earlier this is a special method for getting most beneficial effect of *Rasayana. Kuti* here represents a hospital room where the air and the sun does not enter is called as *Kuti*. The treatment which is done by keeping the patient in such *Kuti* is called as *Kutpravesika Rasayana*.

# Description of the Kuti<sup>4,5,6,7,17,18,19</sup>

**1. Place:** The *Kuti* should be in such area where the higher class of society prince, physicians, etc. stays; where adequate water supply is available; the place is good for all the purposes; where the need of things like medicine, milk, ghee, and other things are available. This *Kuti* can be built either in the city or outside the city, in the east (*Purva*) or north (*Uttara*) direction.

**2. Land:** A good land; near the river and where the open space is available for walking.

**3. Dimention:** This should be according to the need and according to *Vastu Shastra*.

**4.** *Trigarbha*: *Trigarbha* means there should be one room inside the other room and then the third room should be inside the second room. The patient has to stay inside the third room up to the whole duration of the therapy.

**5. Walls:** The walls should be enough strong and thick. The ventilators in the walls should be smaller in size, so that the air circulation may be possible but direct wind can't flow inside the *Kuti*.

**6.** *Suspasta*: There must be sunlight in it, but direct sun should not appear inside the *Kuti*.

**7.** *Ritu Sukha*: It should be comfortable in all the seasons. The effects of cold, summer and monsoon should be least at times.

**8.** *Manas Priyam*: The atmosphere should be pleasant, so that it may comfortable for the person who is staying for long time in it.

**9.** *Asabdam*: There should not be any noise in the kuti, so that the patient can concentrate in himself.

**10**. *Stri-vivarjita*: No leady should be entered in to the *Kuti*. This may be for the reason that in some *Rasayana* the body changes are horrible and women can afraid of it. The other reason may be the discontinuity of *Brahmacharya*.

Vagbhatta have mentioned one more point regarding the *Kuti* i.e. "*Anyabhava rhitata*" in which the other factors which can irritate the *Indriyas* and divert the patient's mind should not be there.

# Indication of Kuti

As this treatment is much effective and expensive everybody cannot effort it Charaka has mentioned persons who should be treated by this type of therapy.

Persons who are capable, having good self control, intelligent, do not suffering from any *Manas* or *Sharir Vikara*, who have strong will and those who have enough time to spare for the whole duration of the treatment. Who have enough money to spend on medicine etc. are the *Yogyas* of *Kutipraveshika Rasayana*.

Further Charaka adds that those who have performed *Samshodhana* earlier, having faith in the treatment, single minded people with good memory, and having love for everybody are the *Yogyas* of the *Kuti Pravesik Rasayana*. The persons who are contraindicated *Rasayana* as such should not be treated by *Kutipravesika Rasayana*.

**Factors to be Considered for the Therapy:** First the physician should decide whether the person is fit for *Kutipravesika* or not? The drug and type of treatment is to be should be given should be decided on the basis of following points. The age should be considered, because the age is an important factor for Rasayana<sup>,4,5,6</sup>, the *Prakriti* of the patient because some drugs are not beneficial for all the *Prakriti* like *Bhallataka* not good for *Pitta Prakriti*. The condition of the *Dosha* and *Dushyas* at that time for the better assessment and then Agni of the patient should be considered on the basis of all these points, the drug and duration of the therapy should be prescribed.

Admission in to the *Kuti*: During the sun's northern course, in the bright half of the month, when the date and the constellation are in the proportion and in good *Murhuta* when the *Krana* are favorable, the man willing to undergo *Rasayana* therapy should be admitted in to the hospital. First the person should be given the *Shodhana* therapy after regaining the normal strength, the *Rasayana* should be prescribed.

Shodhana Prior to Rasayana: Charaka mentions that *Rasayana* therapy proves effective only in the case those who are pure in body and mind. So it is necessary to perform all the *Shodhana karmas* in the person. Sushruta is also of the same opinion. Charaka says that first the person should be given *Snehana* (Oleation therapy) and the *Svedana* (Sudation) in the prescribed manner. Then *Kosthasuddhi* should be done. For *Kosthasuddhi* the equal part of *Haritaki, Saindhava, Amalaki, Guda, Vacha, Vidanga, Haridra, Pippali* and *Sunthi* should be given in sufficient does, until his intestine have been free from all the fecal accumulation. After that the patients should be given *Sansarjan-Krama* and when he is ready to normal diet, he should be given *Rasayana*.

**Duration of the Treatment:** The duration for *Kutipraveshika* is depending upon individual *yoga*. However the duration may be three months to one year.

**Rules for Coming Out of Kuti:** The person staying in *Kuti* has been isolated from wind and direct sunlight. More over him has taken the *Rasayana* medicine, so he should not come out from *Kuti* directly because it may reduce the positive effect of *Rasayana*. So he should come out in such a manner that the exposure to air and sun may not be at once, but gradually from the third room to second room and then outer room. On the full moon day, after worship of the *Brahamins* the person should come outside the *Kuti* and return to the home.

At home he should follow the *Pathya* according to the advice of physicians. He should avoid direct sunlight and wind for some more days. He should not take the hot, pungent, alkaline, sour, etc. substances in the food. He should follow the *Achara Rasayana*.

#### **Management of Complication**

During the *Rasayana* therapy if any complication occurs, the therapy should be stopped immediately and the complication should be treated as per its treatment described in Ayurveda.

### CONCLUSION

Charaka mentions that *Kutipraveshik* is superior to *Vatatapika*. Vagbhata mentions that *Kutipraveshik* gives the best result because the drugs used in it are having excellent properties of *Virya*, *Vipaka*, *Prabhava*, etc. and it has tough *Parihara*. Hence it is best types of *Rasayana* therapy.

#### Cite this article as:

Sejal Shah, Harshit Shah. Kutipraveshik Rasayana- A Review. International Journal of Ayurveda and Pharma Research. 2017;5(3):66-70. Source of support: Nil, Conflict of interest: None Declared

#### REFERENCES

- 1. Bortts, E.Z., A look at ageing and growth potentials. Geriatrics, March, 1963. p. 21-30.
- 2. Donahue, W., Design for a study of geriatric rehabilitation. Geriatrics, March, 1986, p. 81-90.
- 3. Duth, R.,Premature aging and rehabilitation. IJMR Oct., 1991, p. 101-110.
- Singh, G., Effect of certain Rasayana drugs Mandukaparni, Satavari and Vacha on Jara and Vyadhi Kshamatva, 1982, CCRAS.
- 5. Raj, B., et al, Health status of aged in India: A study. Geriatrics, June, 1986, p.71-80.
- 6. Rao, K., Studies on the Rasayana effect of a geriatric formulation in apparently normal aged persons. 1997, JRAS vol. 18.
- 7. C.C.R.A.S., Clinical and experimental studies on Rasayana drugs and Panchkarma therapy, 1993.
- 8. Sachitra Ayurveda, Roll of Rasayana in aging, august 1974.
- 9. Dixit, B., Amarkosh, Nirnaya Sagara press, 1944.
- 10. Sharma, R., Agni Purana, 1984.
- 11. Desai, R., Ayurvediya Kriya Sharir, Baidhyanath Ayurved Bhavana, 1973.
- 12. Robbins, S.L., & Kumar, V., Basic Pathology, 4<sup>th</sup> ed, London, 1987.
- 13. Bhaishajya ratna vali, Chaukhamba Sanskrita Series, Varanasi, 1961.
- 14. Bhavaprakash, Chaukhamba Sanskrita Series, Varanasi, 1961.
- 15. Bhela Samhita, Chaukhamba Vidya Bhavana, Varanasi, 1968.
- 16. Chakradutta, Chaukhamba Sanskrita Series, Varanasi, 1949.
- 17. Charaka Samhita, with Chakrapani comm., Chaukhamba Sanskrita Series, Varanasi, 1970.
- **18.** Sen, C. K., Charaka Samhita with chakrapani and Jalpakalpa taru commentary, and Kolkata, 1955.
- 19. Cahraka Samhita, Shree Gulab Kuwarba Ayurvedic Society, Jamnagar, 1949.
- 20. Lensing, A.I., Cowdry's problems of ageing, The Williams and Wilkins co. Baltimore,1952.
- 21. Vaidhya, H.P., Ayurveda Rasayana Commentary on Aastanga Hridaya by Hemadri, Chaukhambha Orientale, Varansi, 1982.
- 22. Swash, M., Hutchison's clinical methods 19<sup>th</sup> ed., ELBS, 1989.
- 23. Madhava Nidana, Madhukosh tika, Nirnaya Sagar Press, Mumbai, 1955.
- 24. Warmer, E. C. , 14<sup>th</sup> edition, Savill's system of clinical medicine, London, 1964.
- 25. Sabdakalpadruma, Chaukhamba Sanskrita Series, Varanasi, 1970.
- 26. Sharangdhara Samhita, Nirnaya Sagar Press, Mumbai, 1955.
- 27. Shusruta Samhita Com. by Dalhana, Chaukhamba Sanskrita Series, Varanasi, 1970.

\*Address for correspondence Dr. Sejal Shah Research officer, ISM & H, Gandhinagar, Gujarat. Email: <u>sejharsh@rediffmail.com</u>