



# Ayurved Darpan Journal of Indian Medicine



An International Quarterly Publishing Peer Reviewed Journal

## Review Article

### REVIEW ON PHARMACOKINETIC AND PHARMACODYNAMIC ACTION OF TAMRAGARBHA POTTALI

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Article Received on: 02/03/2018

Accepted on: 25/03/2018

#### ABSTRACT:

Today many Ayurvedic doctors or vaidyas are unaware about different *Pottali kalpas*. Very rare are using in their clinical practice. It may be helpful if we review on its preparation and its pharmaceutical action. *Tamragarbha Pottali* has been used in conditions like *Kaphadhikya*, *Tridoshajanya Swasa*, *Kasa*, *Jwara*, *Shoola* and *Vardhakyajanya Vikaraas* which are described in *Rasayoga Sagar* texts. *Tamra Bhasma*, *Kajjali*, *Suvarna* are made in compact form for specific arrangement of drug which breaks the specific State of pathology in specific group of diseases. Hypothetical view on pharmacokinetic Action and pharmacodynamics action of this drug has been discussed. All *karmas* related to *Chikitsa* is in one dosage form like *Vyadhipratyanika dravyas* and *Rasayana Karma*. Due to *Gandhaka Paka* efficiency and potentiality of main contents increases. Like Acharya's *Tamragarbha Pottali* it may possible to make *Pottali kalpana* according to our own selected *Dravyas* for specific kind of *Samprapti* of diseases.

**KEY WORDS:** *Tamragarbha Pottali*, *Rasayana*, *Kaphadhikya*, *Tridoshajanya Swasa*, *Kasa*, *Jwara*, *Shoola* and *Vardhakyajanya Vikara*.

#### INTRODUCTION:

*Pottali Kalpana* is described in *Rasa-shastra* texts as emergency medicine. It was used in all medical cases. One of the *Pottali Kalpana Tamragarbha Pottali* seems having unique potential towards *Sannipatic avastha* and have been used in *Kaphadhikya Tridoshajanya Shwasa*, *Kasa*, *Jwara*, *Shoola* and *Vardhakyajanya Shosha* described in *RasayogaSagar*. This thinking of Acharyas inspired us to seek reason behind *Pottali Kalpana* and its different forms of unique preparations. Today we require emergency drugs. On preparations of *Tamragarbha Pottali* earlier works has been done and review on *Pottali Kalpana* has also been done. In my study I will put hypothetical view on explaining how *Tamragarbha Pottali Rasayan* would work in diseases like *Strotovaigunya* condition and *Vyadhis*. In short Review a Pharmacokinetic and Pharmacodynamic action of this drug will be discussed.

#### MATERIALS AND METHODS:

In *Rasayogasagar*, *Tamragarbha Pottali* is explained<sup>[1]</sup>. *Tamra bhasma* is main content in it. It can be understand as active ingredient. *Kajjali*, *Shudha Gandhak* and *Vishuddha Suvarnatanutantu khanda* are the others contents. These all are made to be comprised and compacted in the specific arrangement by specific bond called *Parada Bandha* by the method of *Pottali Kalpna* which is done by *Gandhak Paka*. This is type of *parade Sagandha Murcchana*. This Specific arrangement of drug is made to break the specific State of Pathogogy in specific group of diseases. It breaks the *Samprapti* in *Vyadhis* told *Kaphajanya Tridoshajanya Shwasa*, *kasa*, *jwara*, *Shoola* and *Vardhakyashosh*. To enhance the potency and *Gamitva* of drug ginger juice and honey is told as *Anupana*.

To understand further review on some terms is important,

**Srotas**

The system in which origin, transportation, nourishment, transformation, destruction of *Dhatus* or excretion of *Mala* occurs through macro, micro, circular or longitudinal channels is called *Srotas*. *Srotas* may be infinite as number of *Bhavapadarth* in the body is infinite.

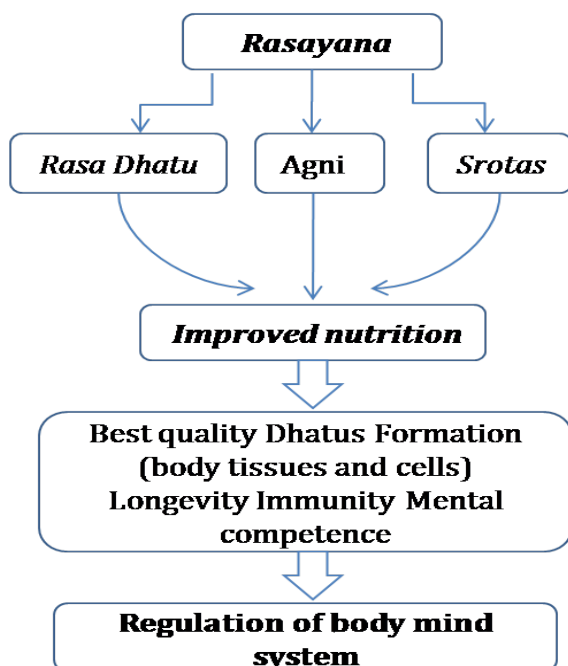
**Srotovaigunya**

The favourable condition generated in body so that vitiated *Doshas* can get shelter is called *Srotovaigunya*. For exposing of any disease first *Srotovaigunya* is required, because for every *Karya*, *Karana* must be there says *Satkaryavada*. In *Rasashastra* texts *Rasayana* word is used so many times for drugs because of its property. Continuously transportation and motion of *Doshas*, *Dhatus* and *Malas* occurs through *Srotas* and from one *Srotas* to another. Because of such physiological concept, *Rasayana* is explained by our *Acharyas*. *Rasayan Rasaushadhis* are prepared in such a way that, it should travel through all *Srotas* for example from *Rasavaha* to last *Shukravaha Srotas*.

**Rasayanakarma of Tamragarbha Pottali**

According to Prof. R. H. Singh *Rasayana* drugs act primarily at three levels [2]

1. Through the level of *Rasadhatu* promoting nutrients value of plasma.
2. Through the level of *Agni* improved digestion and metabolism.



3. Through the level of *Srotas* cleaning up the micro channels leading to better perfusion of tissue.

**Study Design**

1. Pharmacokinetic action of *Tamragarbha Pottali*.
2. Pharmacodynamic action of *Tamragarbha Pottali*.

**Review and Study on Pharmacokinetic action of Tamragarbha Pottali Rasayana:**

1. *Tamra*<sup>[3]</sup> *Bhasma*  

<i>Rasa</i>	- <i>Tikta, Kashaya, Katu, Madhur</i>
<i>Vipaka</i>	- <i>Madhur</i>
<i>Virya</i>	- <i>Ushna</i>
<i>Karma</i>	- <i>Dipan, Lekhan, Ropan, Vishaghna</i> .

 It is *Tridoshaghna*. Mainly *Vaatkaphagna*.

2. *Gandhak*<sup>[4]</sup>  

<i>Rasa</i>	- <i>Madhaur</i>
<i>Vipaka</i>	- <i>Katu</i>
<i>Virya</i>	- <i>Ushna</i>
<i>Karma</i>	- <i>Rasayana, DipanPachana, Vishaghna, Krimighna, jantughna</i> .

3. *Kajjali*<sup>[5]</sup> - *Yogavahi*

4. *Suvarna*<sup>[6]</sup>  

<i>Rasa</i>	- <i>Madhur</i>
<i>Virya</i>	- <i>Sheeta</i>
<i>Karma</i>	- <i>Rasayana, Vayasthapana</i>

**Review and Study on Pharmacodynamic action of Tamragarbha Pottali Rasayana:****Samprapti ( Pathology of Diseases)****Samprapti of Shwasa**<sup>[7]</sup>

Due to vitiated *Vata Dosh*, *Kapha Dosh* gets *vimar-gaga* (Diverted) from its natural place. This leads to *Srotavarodha* in *Pranavaha Srotas*. *Pranavayu* and *Udanavayu* gets *urdhvagati* and fast, painful, noisily respiration occurs. In this way *Pranavaha Srotas* gets *Dushita*. Here *tamra bhasma* clears *Srotavarodha* and forms *Srotovishodhan* by its *Tikta* and *Ushnaguna*.

Here, *Ushna Guna* and *Lekhana Karma* of *Tamra* clears the *Kaphadhikya*, *Tridoshajanya Srotavarodha* in *Pranavaha Srotas*. And as *Tamra* is in form of *Pottali* due to *Gandhaka paka* it increases its potential. Vitiated *vata dosha* comes in its natural place. *Suvarna* helps in regaining *Dhatus* strength from debility.

**Samprapti of Kasa Roga**

Due to etiological factors *kapha* gets aggravated and

brings obstruction for the movement of *Vata* in *Uras* leading to aggravation of *Pranavata* and *Udanavata*. As a result *Vata* moves upwards, afflicts the channels of circulation in the upper part of body and gets lodged in the throat and chest. This agitated *Vata* enters and fills up all the channels of *Siras* to cause bending and stretching of the body, jaws, sides of neck and eyes. Further *Vata* brings contraction and stiffness of the eyes, back, chest and sides of the chest, gives rise to *Kasa* which may be dry or with sputum. It is associated with severe pain and loud sound like that of a broken bronze. (C. S. Ci 18/6-9, S. S. Uttar. 52/5).

Aggravated *Kapha dosha* gets *Vilayana* due to *ushna guna* of *Tamra*, *Kapha* which occupied *strotas* comes out. *Vimargagamit Pranavayu* and *Udanavayu* regains its natural form. As *Pottali Kalpana Dhatu Shaithilya* is repaired due its *Rasayana* effect.

### Samprapti of Jwara<sup>[8]</sup>

#### Pathogenesis in general:

The aggravated *Doshas* – *Vata*, *Pitta* and *Kapha* either individually or in the combinations of two (*samsrushta*) or all the 3 *Doshas* (*Sannipata*) spread through the *RasaDhatu* and dislodge the *Jatharagni* (digestive fire present in stomach) from its own place. Being supplemented with their own heat and the heat of the *Jatharagni*, the heat of the body gets increased. Due to this, the body channels (*Srotas*) get obstructed by the imbalanced *Doshas*. This leads to further increase in the internal temperature. Thus *Jwara* manifests with increase in body temperature as its unique sign.

#### When *Kapha* dominates other *Doshas* in *Sannipata Jwara*: *Kapholbana Sannipata Jwara*

*Alasya* - laziness, lethargy  
*Aruchi* - Anorexia, lack of interest in food  
*Hrullasa* - nausea  
*Daha* - Burning sensation  
*Vami* - vomiting  
*Arati* - lack of interest  
*Bhrama* - dizziness, psychosis  
*Tandra* - drowsiness  
*Kasa* - cold, cough

*Tikta rasa* and *ushna guna* of *Tamra* as *Pachaka*, starts *pachana* of *Ama doshas*. The increased *pachanaguna* is due to *Pottali* form. Also *Tamra* is *Tridoshaghna* due to *Katu kashaya* and *madhurarasa*. *DhatuS haith-*

*ilya* regains and nourishment occurs due to *Rasayana* effect.

### Tridoshaj Parinamshoola:

*Tridoshaja ParinamaShoola* manifest due to combination of all the three *Doshas* and manifest the clinical features of all the three *Doshas*. If it is associated with emaciation, loss of strength and digestion is said to be incurable. (M. N. 26/21).

Pain arises due to *Vata* and *Pitta Doshas*. This pain may be due to ulcers in Stomach, duodenum, Colon etc. *Lekhana karma* of *Tamra* like scrubbing action occurs, necrotic or dead cells are removed. This helps in healing process of ulcers. Due to *Pottali* form potentially *Rasayana karma* helps again to heal quickly.

### Vardhakyajanya Vikara<sup>[8]</sup>

*Acharya Charaka* has described *Jirnavastha* (old age) after age of sixty years where as *Acharya Sushrut's* opinion is after seventy years of age one is called as old. So, the *Vridhdhavastha* or *Jirnavastha* is the last phase of life and is represented by the degeneration of body. *Acharya Sushrut* mentioned *jara* under *Svabhavabalapravritta vyadhi* which is of two types *Kalaj* and *Akalaj*. Here *Akalaj jara* and related *vyadhis* is our focusing point which appears before proper time due to improper care and prevention. Some viable facts are very important in the event of aging phenomenon,

- *Svabhavaparamvada* - theory of natural destruction
- Environmental and other factor - *Daiva* ( works of previous life) and *Purusakara* ( works of present life)
- *Kala* ( Time factor)
- *ShariraVridhdhikarabhava* - *abhava* ( Depletion of growth factor)
- Phenomenon of aging is related to Principles *Tridoshas*
- *Agni*
- *Dhatu*
- *Ojas*
- *Srotas*

Factors responsible for *Akalaj jara*

- *Aharatmaka Hetu*
- *Viharatmaka Hetu*
- *Manasika Hetu*

*Ayurveda* advocates wonderful approach to delay *Kala-jara* and avoid *akalajara*. The major preventive approaches for maintaining and improving the quality of life include individualized specific measures like *Dinacharya*, *Ratricharya*, *Rutucharya*, *Hitakara* and *Matravataahara*, *Sadvrittupalana*, *Achara Rasayana*, *Rasayana* therapy, *Yoga*, *Panchakarma* and various herbal drugs are very effective methods for geriatric health care in present time.

Here, *Vatadosha* is predominant in *Vardhakya*. *Tamra* due to its *Ushna* and *madhura* Controls *Vatadosha*. Also *Pitta* and *Kapha dosha* are controlled by *Kashaya*, *Madhura* and *Ushna*, *katu* and *Tikta* respectively. *Suvarna* works as *Rasayana* effect ultimately rejuvenates *Oja*. *Akalaja jara* can be treated by *Pottali kalpana*.

#### OBSERVATIONS AND RESULTS:

In case of *Swasa*, *Ushna Guna* and *Lekhana Karma* of *Tamra* clears the *Kaphadhikya*, *Tridoshajanya Srotavarodha* in *Pranavaha Srotas*. And as *Tamra* is in form of *Pottali* due to *Gandha kapaka* it increases its potency. Vitiated *vata dosha* comes in its natural place. *Suvarna* helps in regaining *Dhatu* strength from its debility.

In case of *Kasa*, *Kapha dosha* gets *Vilayana* due to *ushna guna* of *Tamra*, *Kapha* which occupied *srotas* comes out. *Vimargagamit Pranavayu* and *Udanavayu* regains its natural form. By *Pottali Kalpana Dhatu Shaithilya* is repaired due its *Rasayana* effect.

In case of *Jwara*, *Tikta rasa* and *ushna guna* of *Tamra* as *Pachaka*, starts *pachana* of *Ama doshas*. The increased *pachanaguna* is due to *Pottali* form. Also *Tamra* is *Tridoshagna* due to *Katu*, *kashaya* and *madhura rasa*. *Dhatu Shaithilya* regains and nourishment occurs due to *Rasayana* effect.

In *ParinamaShoola* pain arises due to *Vata* and *Pitta Doshas*. This pain may be due to ulcers in *Stomach*, *duodenum*, *Colon* etc. *Lekhan karma* of *Tamra* like scrubbing action occurs and necrotic or dead cells are removed. This helps in healing process of ulcers. Due to *Pottali* form potentially *Rasayana karma* helps again to heal quickly.

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#### DISCUSSION:

Preparations of *Pottali kalpana* drugs are described in *RasayogaSagar* in topic of *Pottali Rahasyam* is unique for each group of diseases. *Tamra bhasma* is main content, it can be understand as active ingredient. *Kajjali*, *Shudha Gandhak* and *Vishuddha Suvarnatanutantu khanda* are the others contents. These all are made to be comprised and compacted in the specific arrangement by specific bond called *Parada Bhandha* by the method of *PottaliKalpana* which is done by *Gandhak Paka*. This is type of *parade Sagandha Murcchana*. This Specific arrangement of drug is made to break the specific State of Pathology in specific group of diseases. It breaks the *Samprapti* in *Vyadhis* like *Kaphajanya Tridoshajanya Shwas*, *Kasa*, *Jwara*, *Shool* and *Vardhakyashosh*. To enhance the potency and *Gamitva* of drug ginger juice and honey is told as *Anupana*.

#### CONCLUSION:

*Pottali Kalpana* is most suitable form of emergency drug preparation, has been made on the basis of specific group of *Samprapti* of diseases.

*Tamragarbha Pottali* can be used in *Kaphadhikya*, *Tridoshajanya Swasa*, *Kasa*, *Jwara*, *Shoola* and *Vardhakyajanya Vikara* in specific *awastha*.

All *karmas* related to *Chikitsa* are in one dosage form like *Vyadhipratynik dravyas* and *Rasayana Karma*.

Due to *Gandaka Paka* efficiency and potentiality of main contents increases.

Like *Acharya's Tamragarbha Pottali*, it may possible to make *Pottali kalpana* according to our own selected *Dravyas* for specific kind of *Samprapti* of diseases.

As described here the hypothetical study, clinical study is needed to find efficiency of *Tamragarbha Pottali*.

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**Cite this article as:**

Pralhad R. Salunke, Sunil C. Bakare, Swati Patil, Review on Pharmacokinetic and Pharmacodynamic Action of Tamragarbha Pottali, ADJIM 2018: 3(1), p. 31-35.