

A Review Article on Importance of PUTA (Role of AGNI) for Ayurvedic Preparations

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Abstract-- The ability to manage all metals and minerals emerged with the development of pharmaceutical methods for transforming these substances into *Bhasmas*.

Bhasmas are unique *Rasa* formulations where metals and minerals undergo various processes, including detoxification (*Shodhana*), reduction to powder form (*Jarana*, inducing decay of metals), and incineration (*Marana*, neutralizing metallic characteristics). The procedure of *Shodhana* eliminates impurities that could potentially cause toxic effects. A purified substance, whether it is *Rasa-Uparasa* or *Dhatu*, undergoes maceration with certain herbs and then is subjected to heat treatment known as '*Marana*.' The term '*Putana*' in *Rasashastra* and *bhaishajya Kalpana* refers to a traditional Ayurvedic method of incineration or heating used to prepare metallic or mineral formulations (*Bhasmas*).

The process for determining the level of *paka* is referred to as '*puta-paka*'. Among the various intermediary stages involved in the incineration of *Lauha*, the '*puta*' plays a crucial role due to its ability to transform *Lauha* into a state that cannot be reverted. This technique not only eliminates imperfections but also enhances the medicinal properties of the *Lauha*. In simpler terms, incineration eliminates the undesirable metallic characteristics of *Lauha*, making it appropriate for absorption by the body.

Keywords-- Rasashastra, Samskaras, Marana, Putpak, uparasa, samputa, updhata.

I. INTRODUCTION

The process used to determine the degree of '*paka*' is referred to as '*puta-paka*'. Among the various intermediary steps in the incineration of *Lauha*, the '*puta*' holds significant importance due to its ability to change *Lauha* to a state from which it cannot be reverted. This method not only eliminates imperfections but also enhances the therapeutic qualities of the *Lauha*. In essence, through incineration, the undesirable metallic characteristics of *Lauha* are removed, making it suitable for absorption by the body. The amount of heat applied concurrently is known as *Putana*. The word *Putana* is derived from '*Putati*' means 'to connect' or 'to join'¹ it may be in concern with connecting two *shara* v(earthen pots) containing the *aushadhidravya* to prepare a *sharavsamput*.

Bhasma is also termed as *Mritaloha*², which is defined in the classical text of *Rasatarangini*. The therapeutic effectiveness of *Abharaka* improves with an increasing number of *putas*. For the treatment of ailments, it is recommended to use between 10 and 100 *putas*, while *Vajikarana* requires 10 to 500 *putas*, and for *Rasayana*, the range is 100 to 1000 *putas*. Some authors suggest that the number of *putas* should be increased until the *bhasma* achieves a microfine consistency that allows it to float on the surface of water or until it is properly incinerated and transforms to *niruttha* (i.e., no longer retains its original form). As per *Rasa Tarangini*, a minimum of one *puta* and a maximum of 1000 *putas* are necessary for the incineration of *Abharaka*. *Ayurveda Prakash* has clearly indicated *Gajaputa* for all types of *Lauha bhasma*.³ *Rasashastra* is a particular part of Ayurveda which manages metals and minerals. The drug arrangements are made under this science has a fundamental piece of Ayurvedic therapeutics. *Shodhan*, *maran*, *jarana*, *murchhana*, *patana*, *satvapata* and so on are the methods which are utilized for the readiness of different plans. *Putana* or the methods of incinerations is an important aspect for estimating therapeutic efficacy of a metal and it is the process of *Putana* that brings micro fine stage to a metal thus making it suitable for short acting pharmacokinetics.⁴

II. AIM AND OBJECTIVES OF PUTA

1. To provide a particular temperature pattern (no less or more heating).
2. Reduction in particle size.
3. To provide a suitable atmosphere for desirable chemical reaction.
4. To make the material ductile, smooth & homogenous.
5. To potentiate the material for therapeutic purposes.
6. To make the material absorbable, colloidal, adaptable & assimilable form.

7. *Putas* produces various attributes including *bhasmasdoshavinasha*, *gunaprakarsha*, *niruthatva*, *dipana*, *varitaratva*, *apunarbhava*, *laghutva*, *shighravyapti*, which are more effective than *jaritaparada*, *rekhapurnatwa*, and *vichitragunadipti*, among others.⁵

III. MATERIAL & METHODS

A review of Ayurvedic and *Rasashastra*-related texts includes an examination of *put* and *putpakkalpana*.

Definition Of Put:

Inserting raw materials, enclosed in an earthen crucible (*samputa*), into a predetermined quantity of fuel (*Upala* or dried cow dung cakes) and subjecting them to regulated heat.⁷

An incomplete or overly processed state of *paka* is not favored.⁶

The method completed for preparing the *bhasma* using fire is referred to as *put*.

Utility Of Puta:

Put aids in removing *doshas* from *dhatu* while also improving its qualities.⁸ Additionally, through the process of *Put*, *bhasma* successfully undergoes the required *bhasmapariksha* such as *Niruttha*, *Varitar*, and *Rekhaipoorna*; further, *doshas* in the metal are eliminated, resulting in an enhancement of its properties. The *bhasma* also gains characteristics like *deepana*, *laghava*, and *sheeghravyapti* (rapid dispersal in the body).^{9,10}

After multiple *puta* applications, *bhasma* develops its distinctive color.¹¹

IV. TYPES OF PUT

Put can be categorized into various types based on the heat source, whether heat is applied directly or indirectly, the type of fuel used, and its size. Differences in temperature distribution caused by varying pit sizes and amounts of cow dung cakes further classifies *Agniputa* into distinct types.¹²

Different categories of *putas* are described in traditional literature on *Rasashastra*, including works like *Rastaragani* and *Rasratnsamuchay*, among others. *Putas* are categorized into threetypes: *Surya puta*, *Chandraputa*, and *Agni puta*, depending on the type of heat produced.

Agni puta is further divided into three subcategories based on the level of heat generated: *Mriduagni*, *Madhyama agni*, and *Tivraagni*. *Lavaka puta* and *Kapota puta* fall under the *Mrdu agni* category, while *Kukkuta puta* and *Varaha puta* are classified under *Madhyama agni*, and *Gaja puta* and *Maha puta* are categorized as *Tivraagni*.

Put Vidhi:

The materials utilized in the *Put* process are *Samputa*, *upala*, and *chakrika*. The area where the pellets or *chakrikas* are placed during incineration is referred to as *Samputa*. *Upala* is employed to generate heat in *Putas*. Synonyms for *upalas* include *Pistaka*, *Chagana*, *Utpala*, *Upala*, *Girinda*, and *Vanopala*. After the process of levigation, the material is shaped into uniform round forms called *chakrikas* or *pellets*. These pellets should be dried in the shade to prevent rapid moisture loss and subsequent cracking. The drug should be collected initially. To eliminate both chemical and physical impurities, *Shodhanam* must be performed. *puta*

The process of *Churnikarana* should be performed to reduce the particle size of the material. Once *Churnikarana* is completed, *Bhavana* (trituration) of the drug should be carried out using juices or decoctions of plants. Pellets known as *Chakrikas* are formed, dried, and stored in an earthen plate (*sarava*), which is then covered with another plate. A cloth coated with clay should be used to seal the earthen plates, and they should be left to dry. Subsequently, the sealed earthen plates are heated with the help of cow dung cakes.

V. IMPORTANCE OF PUT

The *bhasma* created from the *ash* of *Lohadi dhatu* is intended for human use.

There are various tests for *bhasmas* that involve floating them in water (*vaaritar*). Additionally, *bhasmas* must pass the *rekhapurnatvapariksha*, which is one criterion for evaluating them. These *bhasmas* enhance the properties associated with *Agnideepan*. *Bhasmas* derived from *dhatu* through *putpak* exhibit similar qualities to those of *Jaranjanya Parad*. Therefore, after appropriate *put pak*, the medications made from the *bhasmas* of *lohadi dhatu* possess remarkable characteristics.

Types of Puta:

S.N o.	Name of the Puta	Dimension		Max.Temp	Uses
		Classical	Metric System(cm ³)		
1	Mahaputa	2 hasta	91x91x91	1000 ⁰ C for 1 hr	For the maran of lauha, Vajra, Abhraka, Vakranta etc
2	Gaja puta	1 Rajahasta	57x57x57	1000 ⁰ C for 1 hr	For the maran of Abhraka, Kapardik, Godanti, Shankha, Sukti etc
4	Kukkuta puta	2 Vitasti	46x46x46	1000 ⁰ C for ½ hr	For the maran of Swarana, Rajat, Naag, Vanga, Mukta etc.
5	Varaha puta	1 Aratni	42x42x42	1000 ⁰ C for ½ hr	For the maran of Shankha, Shukti, Varatika, Swaranamakshik etc
6	Laghu puta	8 Upla	23x23x23	800 ⁰ C for ½ hr	For the maran of parad
7	Bhudhara puta	-	20x20x20	140 ⁰ for ½ hr	For the Jaran & Maran of parad
8	Gobara puta	1 Vitsti(Ft)	23x23x23	400 ⁰ C for 4 hr	For the Maran of Parad
9	Bhanda puta	Brihat Bhanda	-	400 ⁰ for 8 hr	For Gandhakjarna
10	Valuka puta	Brihat Bhanda	-	400 ⁰ C for 6 hr	For GandhakJarana

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VI. DISCUSSION

Acharyas have described various methods for the preparation of Dhatu bhasma. The ideal temperature for the bhasmikrana of Dhatu is around 1000⁰C which can be achieved easily through Mahaputa and Gajaputa.

- The properties of bhasma prepared through puta includes
- Churnatva - Breaking the material to a powdered state by providing external heat to the metal,
- Laghava – Lightness,
- Apunarbhava – Unable to regain its original form,
- Gunadhikya – increase in Potency.
- Anapsu Majjanam –The obtained bhasma dose not sink on water,

- Rekhapurnata - Occupying the inter ridge spaces of the finger,
- Shighravyapti - Spreading and occupying very rapidly,
- Dipanam - Increasing the appetite.¹³

The analysis of chemical composition shows that the percentage of Acid insoluble ash consistently decreases, while the percentage of Acid soluble ash steadily increases as the number of Puta rises, suggesting a conversion to a more easily assimilable form. Bhasmas are known to decrease particle size,¹⁴ thereby enhancing the drug's bioavailability. The area and temperature gradient are directly related to the rate of heat transfer through a uniform medium. Thus, the configuration of pellets is crucial; they should be flat, and their thickness should be consistent to ensure efficient heat flow.

Hess's law of thermodynamics can be applied regardless of whether the process occurs in a single step or multiple steps, as the total amount of heat produced or absorbed in a chemical reaction remains constant.

During the process of putapaka, various chemical alterations occur to the substance within the puta, transforming it into a compound. The heat energy absorbed by the material and the energy necessary for the chemical transformation are equivalent within the earthen plate throughout the putapaka process, to illustrate the transfer of heat from the puta to the pellets situated inside the sharavasamputa.

Putas should persist until the bhasma reaches Nirutthatva and Varitaratva.

Acharya Siddhinandan Mishra has added to the above reference that for the maran of Abhrak, Mahaputa is indicated while for the maran of Naag and Vanga, Kukkutputa is indicated.¹⁵

According to the Rasaratnasamucchaya, when there is no specific type of Puta specified, the type should be determined by assessing the strength or weakness of the dravya that needs to be processed. This means that the kind of Puta should be selected by examining the properties of the metal. In various classical texts on maran, the number of Puta is noted. However, in practice, it is observed that the suggested number of Puta is often inadequate for creating the appropriate bhasma. At times, a smaller number of Puta are found to be sufficient for the process.

Therefore, it can be said that the type of puta specified for the respective metal can be viewed broadly, and puta should be assigned according to the properties of the metal while monitoring the resulting product after each puta. The distribution of heat varies when using a single sharavsamputa compared to utilizing multiple sharavsamputas in one pit. It appears to be more suitable to employ one sharavsamputa at a time within a single pit.

VII. CONCLUSION

The substances prepared using put-pak become purified and achieve a higher quality. Puta is a traditional technique employed by Acharyas for transforming metals and minerals into bhasmas. Bhasmas, which are believed to possess very fine particle sizes, exhibit greater bioavailability than their original forms. The particle size of Bhasma is inversely related to the number of Putas applied, indicating that more Putas lead to finer particles. Puta appears to be the optimal method for producing Bhasma.

Different techniques for preparing Bhasma are described by Acharyas, but among these, the puta method stands out as the most effective for Bhasma preparation. Thus, puta holds a distinctly recognized and important position in Rasashastra.

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