



A.D.R. IN APAKVA BHASMA SEVANA AND ITS MANAGEMENT

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ABSTRACT

Rasashastra is the branch of Ayurvedic pharmaceuticals concerned with processing metals, minerals, and poisonous substances — grouped as Maharasa, Uparasa, Sadharana rasa, and Dhatus — into a form fit for internal administration, known as Bhasma. The nano-sized particles of Bhasma increase surface area, enhance bio-solubility, and improve the rate of dissolution and bioavailability, allowing quick therapeutic results at a comparatively lower dose. Preparation of Bhasma involves classical pharmaceutical procedures such as Shodhana and Marana, and occasionally Amriteekarana and Lohiteekarana, followed by the confirmatory tests (Siddha Pareeksha) described in the classics. A Bhasma that fails these tests is termed Apakva Bhasma, and its consumption can lead to Adverse Drug Reactions (ADR). This review compiles information from classical Ayurvedic textbooks and published research articles to document the Apakva Bhasma Sevana Doshas — the classically described adverse effects of improperly processed Bhasma — for major Bhasmas including Abhraka, Swarna Makshika, Haratala, Manahshila, Rajata, Lauha, Vanga, Naga, and Yashada, along with their classically prescribed management (Cikitsa). Findings from modern toxicity studies on several of these Bhasmas are also reviewed. Standardisation of raw-material selection, Shodhana, Marana, and adherence to the Siddha Lakshanas and Siddha Pareekshas at every stage are essential to ensure the safety of Bhasma preparations. Since the Siddha Pareeksha of dispensed medicines is not routinely performed by the prescribing physician, awareness of the symptoms of Apakva Bhasma Sevana and their management remains essential for safe clinical practice.

KEYWORDS: A.D.R, Bhasma, Apakva bhasma, Cikitsa.

1. INTRODUCTION

Ayurvedic formulations are broadly divided into Kashtaushadhis and Rasaushadhis. Rasashastra is the branch of Ayurvedic pharmacology in which metals, minerals, and poisonous drugs are pharmaceutically processed and made fit for internal administration. Rasaushadhis include preparations processed from Rasa, Uparasa, Sadharana rasa, Dhatus, and similar

substances.^[1] Bhasmas are the most potent and unique preparations in Ayurveda. Several stages must be followed in their preparation, and care has to be taken during processing and administration, as even a minor mistake at any stage may lead to serious adverse effects.

2. MATERIALS AND METHODS

All the data presented in this review were collected from classical Ayurvedic textbooks and published research articles.

3. RESULTS AND DISCUSSION

3.1 A.D.R. – Adverse Drug Reaction

Adverse Drug Reaction is defined as "an appreciably harmful or unpleasant reaction, resulting from an intervention related to the use of a medicinal product, which predicts hazard from future administration and warrants prevention or specific treatment, or alteration of the dosage, regimen, or withdrawal of the product."^[2] The American Society of Health-System Pharmacists provides another definition of A.D.R.^[3] It describes an A.D.R. as any unexpected, unintended, undesirable, or excessive response to a medicine that:

- Requires discontinuing the medicine (therapeutic or diagnostic)
- Requires changing the pharmaceutical therapy
- Requires modifying the dose (except for minor dosage adjustments)
- Necessitates admission to a hospital
- Prolongs the patient's care in a healthcare facility
- Necessitates supportive treatment
- Significantly complicates diagnosis
- Negatively affects prognosis
- Results in temporary or permanent harm, disability, or death

Classification

A) As per ASHP guidelines

- Type A reactions – Dose-related
- Type B reactions – Non-dose-related
- Type C reactions – Dose- and time-related
- Type D reactions – Time-related
- Type E reactions – Withdrawal
- Type F reactions – Unexpected failure of efficacy

B) Onset of events

- Acute – less than 60 minutes
- Sub-acute – 1–24 hours
- Latent – more than 2 days

C) Severity

- Minor
- Moderate
- Severe
- Lethal ADRs

After administration of a drug, if a person develops a sign or symptom — termed an Adverse Drug Event (ADE), i.e., any untoward medical occurrence that may present during treatment with a pharmaceutical product but which does not necessarily have a causal relationship with it — the drug is suspected as the cause of an ADR. The literature is then reviewed for the signs and symptoms exhibited, documented effects for the product, and any similar effects reported for the same class of products; together these help confirm it as an A.D.R.

As per the Medicines and Healthcare products Regulatory Agency (MHRA), an A.D.R. is an unwanted or harmful reaction experienced following the administration of a drug or drugs. It is suspected to be related to the drug(s), and the reaction may be a known side effect of the drug or may be new and previously unrecognised.

3.2 Relevance of Bhasma

Bhasmas are regarded as the ancient nanomedicines of Ayurveda. They are metallic or mineral Yogas prepared by treating the substance with herbal juices or decoctions as part of purification (Shodhana) through processes such as Svedana and Bhavana, and are then converted into Chakrika by levigating with herbal formulations, placed in a Sharava Samputa, and subjected to a suitable quantum of heat as prescribed in the classics, until the Siddha Lakshanas are obtained.

Ayurvedic Bhasmas are regarded as biologically produced nanoparticles of ancient origin, known for their fast and targeted action. For example, the nanoparticles found in Swarna Bhasma, at a size of about 4 nm, are effective in relieving the symptoms of arthritis and help increase apoptosis in B-chronic lymphocytic leukaemia.^[4] Nanotechnology is a major focus area in medicine, as nanoparticles interact with the body at the molecular level.^[5] Nanotechnology covers matter in the dimension range of 1 to 100 nm. The pharmacokinetics and bio-distribution of active ingredients can be improved through nano drug-delivery systems by targeting them to a specific site, thereby improving efficacy and bioavailability while reducing toxicity.^[6] Several scientific analyses, including transmission electron microscopy and atomic force microscopy, have helped establish the nano-size of substances such as Swarna Bhasma. Atomic Absorption Spectroscopy (AAS) and infrared spectroscopy have revealed that no heavy metals or organic compounds are present in Swarna Bhasma.^[7] In physicochemical studies of Yashada Bhasma using XPS, ICP, EDAX, DLS, and TEM, the particles were found to be in an oxygen-deficient state and of nanometre size.^[8]

The Rasa Yogas, mainly comprising Bhasmas, are highly effective and produce quick results at a smaller dose. They are known for their palatability and shelf life, and this group of medicines forms a strong backbone of Ayurvedic therapeutics.

3.3 Importance of Pakva Bhasma

There is a persistent caution regarding the use of heavy metals and heavy-metal toxicity in Ayurveda, and this remains a subject of ongoing discussion in European nations. When Bhasmas are prepared properly and carefully, following classical parameters, the drug is found to be safe for use within its therapeutic dose. However, standardisation parameters must be followed from raw-material selection through to the final stage of preparation. Physicians are largely dependent on

pharmacies for procuring medicines, but unfortunately, cases of ADR due to the use of such drugs are increasingly common today. This may be attributed to the use of low-quality raw material (Agrahya Dravya), mistakes in Shodhana or failure to follow the proper Shodhana procedures, improper methods of Marana, or failure to pass the Siddha Pareekshas prescribed for Bhasma.

The Bhasma Siddha Lakshanas and Bhasma Siddha Pareekshas must be carefully studied before

administering a Bhasma, and these are explained in detail in Rasashastra. The Acharyas have also taken care to describe the Apakva Sevana Doshas of various Bhasmas. The Apakva Bhasma Sevana Doshas — i.e., the ADRs of Bhasmas — are explained along with their management. Since physicians prescribe these medicines while patients purchase them from pharmacies, and since the Siddha Pareekshas are not routinely performed by the prescribing physician, it is essential to be aware of the symptoms that may indicate an ADR arising from Apakva Sevana, as well as its management.

3.4 Bhasma Pareeksha

Table 1: Bhasma Pareeksha (Confirmatory Tests).^[9]

Physical	Chemical
Varna – Colour	Aruchi – Tastelessness
Varitaratva – Floats on water	Nirdhooma – Absence of fumes
Rekhapoomatva – Fills into the furrows of a fingerprint	Apunarbhava – Irreversibility
Oonama	Nirutha – Irreversibility
Anjana Sannibha – Softness (collyrium-like)	Amla Pareeksha – Sour taste test
Nishchandratva – Lustreless	Akshaaratva – Lack of alkaline taste
Sookshmatva – Fineness	—

3.5 Bhasma Varna

Table 2: Dhatu And Corresponding Bhasma Varna.^[10]

Dhatu	Bhasma Varna
Abhraka	Ishtika (brick-red)
Vaikranta	Rakta (red)
Makshika	Rakta (red)
Vimala	Rakta (red)
Rasaka	Rakta (red)
Chapala	Rakta (red)
Kaseesa	Rakta (red)
Kaamkshi	Sveta (white)
Kaparda	Krishna (black)
Sudha varga	Sveta (white)
Loha	Pakva Jambu Phala (ripe jambul-fruit colour)
Swarna	Champak (champak-flower colour)
Rajata	Krishna (black)
Tamra	Krishna (black)
Naga	Kapota (pigeon-grey)

Vanga	Chandrama (moon-white)
Yashada	Peeta (yellow)

3.6 Apakva Bhasma Sevana Doshas and Management

Apakva – na pakvate, pakva bhinna (that which is not (completely) processed; distinct from Pakva/properly processed Bhasma).

Table: Abhraka Bhasma. ^[11,12,13,14]

Lakshana	Management
Yathaa visham yathaa vajram shastra agni pranah (lethal as poison, thunderbolt, weapon, or fire) – Rasa Prakasha Sudhakara	Uma phala (Atasee beeja) rubbed with water and administered for 3 days (Rasa Jala Nidhi)
Mandagni, Prameha – Rasaratna Samuchaya	—
Mrityukrit vyaghra romavat – Ayurveda Prakasha	—
Causes chidrodhara	—

Harish Gopinath, Murughesh Shivashankar. A study on toxicity and anti-hyperglycaemic effects of Abhraka Bhasma in rats. *Journal of Ayurveda and Integrative Medicine*, Vol. 12, Issue 3 — Abhraka Bhasma did not show any toxic effects even at a high dose. ^[15]

Table: Swarna Makshika Bhasma. ^[16,17]

Lakshana	Management
Vividha rujaa, kashta – Brihat Rasaraja Sundara, Rasayana Sara Samgraha	Kulattha Kashaya; Dadima Twak Kwatha (Brihat Rasaraja Sundara, Rasayana Sara Samgraha)

Jomon T. Joshy, Ashok Kumar. Toxicity study of two iron-containing Bhasmas, Swarna Makshika and Kaseesa Bhasma. P.G. Thesis, Department of Pharmacology, Dr. M.G.R. University, Chennai, 2012 — the drug was found to be non-toxic at its classical dose. ^[18]

Table: Haratala Bhasma. ^[19,20]

Lakshana	Management
Loss of natural colour and lustre	Jeeraka Choorna with Sita
Daha/Tapa	Kooshmaanda Svarasa and Madhu (Rasa Jala Nidhi, Brihat Rasaraja Sundara)
Kapha-Vata Prakupita Roga	—
Kushtha – Ayurveda Prakasha	—

Mondal S, Palbag S, Gautam. Toxicological study of arsenic-containing Ayurvedic drug Hartal Bhasma. *J Ayu Herb Med* 2016;2(3):82–85. ^[21]

Table: Manahshila Bhasma. ^[22,23]

Lakshana	Management
Bala-Veerya Nashta	Amalakee Choorna and Madhu – 3 days (Rasayana Sara Samgraha)
Aneka Roga	Haritakee and Sita – 3 days (Brihat Rasaraja Sundara)
Due to vitiated Doshas, the person dies – Rasaratna Samuchaya, Rasayana Sara Samgraha	—

Table: Rajata Bhasma.^[24,25]

Lakshana	Management
Tapa	Sharkara and Madhu – 3 days (Rasayana Sara Samgraha)
Vit-Bandha	—
Shukranashaka	—
Veerya-Bala Hani	—
Mahagada – Ayurveda Prakasha	—

In an acute toxicity study conducted by Shree Dhootapapeshwar Ayurvedic Foundation, no toxic effect occurred (P.K. Prajapati, Prashant Kumar, Sarkar R. Safety and toxicity profile of some metallic preparations of Ayurveda. Ancient Science of Life 2006;25(3&4):57–63).^[26]

Table: Lauha Bhasma.^[27,28]

Lakshana	Management
Mrityukaraka	Siddhisara Choorna – equal quantities of Haritaki, Saindhava, Sunthi and Sweta Jeeraka with double the quantity of Trivrit, levigated (Bhavana) with Nimbu Swarasa; administered from 1 Ratti increasing up to 12 Rattis (Rasa Jala Nidhi)
Shoolakaraka	—
Kantinashaka	—
Hritshoola – Ayurveda Prakasha	—

Namrata Joshi, Manoj Kumar Daksh, et al. Toxicity study of Lauha Bhasma in albino rats. Anc Sci Life 2016;35(3):159–166 — no untoward effect of Lauha Bhasma was observed at the therapeutic dose or at five times the therapeutic dose, proving its safety; alteration in some biochemical parameters and histopathology was observed only at the highest dose.^[29]

Table: Vanga Bhasma.^[30]

Lakshana	Management
Daha	Meshashringi and Sita for 3 days (Rasayana Sara Samgraha)
Ashmari, Shotha	—
Prameha	—
Kilasa, Kushtha, Switra	—
Apachi, Kshaya, Bhagandara, Shoola	—
Gulma, Pandu, Rakta Dosh	—
Mootrakrichra, Kapha-Vata Vikara	—
Vidradhi – Rasayana Sara Samgraha, Rasa Kamadhenu	—

Nagaraj V, Joshi D, et al. Toxicity studies on Vanga Bhasma. Ancient Science of Life 1984;4(1):32–35 — no acute toxic effect on the GIT, pancreas, or liver.^[31]

Table: Naga Bhasma.^[32,33]

Lakshana	Management
Kushtha	Swarna Bhasma and Haritakee – 3 days (Rasa Raja Sundara)
Gulma	Swarna Bhasma and Sita – 3 days (Rasayana Sara Samgraha)

Pandu, Prameha	—
Agnimandya, Shotha	—
Bhagandara – Ayurveda Prakasha	—

M. Dash. Toxicity study of Naga Bhasma with special reference to Ayurvedic measures for toxicity eradication. *Int J Pharm Biol Arch*, 2012.^[34]

Table: Yashada Bhasma.^[35]

Lakshana	Management
Prameha	Bala Choorna, Haritakee Choorna and Sita – 3 days (Brihat Rasaraja Sundara)
Ajeerna	Sharkara and Haritakee – 3 days (Rasayana Sara Samgraha)
Vamana	—
Bhrama – Brihat Rasaraja Sundara	—

3.7 DISCUSSION

Rasaushadhis are medicines with wide therapeutic properties and a rejuvenating effect. Looking at the conversion of a drug into Bhasma, each Rasa Yoga appears as a wonder in itself. When Rasa formulations are judiciously handled and used, many otherwise incurable diseases can be cured. The standardisation parameters prescribed for each preparation must be fulfilled: there are defined rules governing the selection of raw drugs and their Shodhana, Marana, and conversion into Bhasma, and the rules underlying each step must be carefully followed. The Bhasma Pareekshas must be carried out at every stage. Numerous complications have been described as arising from the intake of Apakva Bhasma. On reviewing the classical management protocols, many of the prescribed drugs act by inhibiting further accumulation and increasing excretion of the toxic principle, while their Deepana, Pachana, and antioxidant properties further contribute to their beneficial effects.

4. CONCLUSION

Bhasmas are unique and among the most powerful preparations in Ayurveda, capable of managing a wide range of diseases. All the steps involved in Bhasma preparation must be carried out effectively and carefully. The Lakshanas exhibited when a Bhasma is not completely formed (Apakva) must be clearly understood, as the symptoms produced resemble those of metal poisoning arising from the accumulation of heavy metals in the body. Due importance must be given to the Siddha Pareeksha at every stage of preparation. The classical management measures described not only aid in the excretion of toxic principles but also act as effective antioxidants, further contributing through their Deepana-Pachana action.

REFERENCES

1. S N Mishra. Textbook of Ayurveda Rasashastra. Chaukhambha Orientalia, Varanasi: Reprint, 2007; 12.
2. Edwards IR, Aronson JK. ADR: definition, diagnosis and management. *Lancet*, 2000 Oct 7; 356(9237): 1255–9. doi:10.1016/S0140-6736(00)02799-9. PMID: 11072960.
3. ASHP. Guidelines on Adverse Drug Reaction Monitoring and Reporting, 1995. *American Journal of Health-System Pharmacy* 52: 417–19. (Medication Misadventures – Guidelines).
4. Paul S, Chugh A. Assessing the role of Ayurvedic Bhasma as ethno-nanomedicine in the metal-based nanomedicine patent regime. *J Intellect Prop Rights*, 2011; 16: 509–15.
5. Chaudhary A. Ayurvedic Bhasma: nanomedicine of ancient India – its global contemporary perspective. *J Biomed Nanotechnology*, 2011; 7(1): 68–69.
6. Sahoo SK, Praveen S, Pan JJ. The present and future of nanotechnology in human health care. *Nanomedicine*, 2007; 3(1): 20–31.
7. Brown C, Bushell GR, Whitehouse M, et al. Nanogold pharmaceuticals: (1) The use of colloidal gold to treat experimentally induced arthritis in rat models; (2) Characterisation of the gold in Swarna Bhasma, a microparticulate used in traditional Indian medicine. *Gold Bull*, 2007; 40: 245–50.
8. Bhowmick TK, Suresh AK, Kane SG, Joshi AC, Bellare JR. Physicochemical characterisation of an Indian traditional medicine, Jasada Bhasma: detection of nanoparticles containing non-stoichiometric ZnO. *J Nanoparticle Res.*, 2009; 11: 655–64.
9. Satpute AD. Rasaratna Samuchaya. Chaukhambha Sanskrit Prathishthan: 2006; Chapter 8, verses 26–30.
10. Asha Kumari, Premvati Tewari (Translation & Edition). Yogaratnakara. Chaukhambha Visvabharati: Varanasi, 2010; 4.

11. Acharya Yashodhar. Rasaprakasha Sudhakara (Translated by S.N. Mishra). Chaukhambha Orientalia; Varanasi: 2004, Chapter 5, verse 5.
12. Dattatreya Anand Kulkarni. Rasaratna Samuchaya (Vigyan Bodhini), Vol.1. Meharchand Lachhmandas Publications, Chapter 2, verse 13.
13. Madhava. Ayurveda Prakasha (Ed. Mishra Gulraj Sharma), 2nd edn, 2007. Chaukhambha Sanskrit Series, Varanasi, Chapter 2, verse 105.
14. Mukherji Pandit Bhudev. Rasajalanidhi (Deva Sharma Bhudev), Vol.2, 2004. Chaukhambha Orientalia, Varanasi, p.296.
15. Harish Gopinath, Murughesh Shivashankar. A study on toxicity and anti-hyperglycaemic effects of Abhraka Bhasma in rats. Journal of Ayurveda and Integrative Medicine, Vol.12, Issue 3 — Abhraka Bhasma did not show any toxic effects even at a high dose.
16. Choube Dattaram. Brihat Rasaraja Sundara, 3rd edn, 2000. Chaukhambha Orientalia, Varanasi, p.544.
17. Vaishya Shyama Sundaracharya. Rasayana Sara, Vol.1, 6th edn, 1997. Krishnadas Academy, Varanasi, p.290.
18. Jomon T Joshy, Ashok Kumar. Toxicity study of two iron-containing Bhasmas, Swarna Makshika and Kaseesa Bhasma. P.G. Thesis, Department of Pharmacology, Dr M.G.R. University, Chennai, 2012 — the drug was found to be non-toxic at its classical dose.
19. Madhava. Ayurveda Prakasha (Ed. Mishra Gulraj Sharma), 2nd edn, 2007. Chaukhambha Sanskrit Series, Varanasi, Chapter 2, verse 177.
20. Mukherji Pandit Bhudev. Rasajalanidhi (Deva Sharma Bhudev), Vol.2, 2004. Chaukhambha Orientalia, Varanasi, p.169.
21. Mondal S, Palbag S, Gautam. Toxicological study of arsenic-containing Ayurvedic drug Hartal Bhasma. J Ayu Herb Med, 2016; 2(3): 82–85.
22. Dattatreya Anand Kulkarni. Rasaratna Samuchaya (Vigyan Bodhini), Vol.1. Meharchand Lachhmandas Publications, Chapter 5, verse 19.
23. Vaishya Shyama Sundaracharya. Rasayana Sara, Vol.1, 6th edn, 1997. Krishnadas Academy, Varanasi, Dhatu Shodhana Marana Prakarana, verse 26.
24. Madhava. Ayurveda Prakasha (Ed. Mishra Gulraj Sharma), 2nd edn, 2007. Chaukhambha Sanskrit Series, Varanasi, Chapter 3, verse 92.
25. Vaishya Shyama Sundaracharya. Rasayana Sara, Vol.1, 6th edn, 1997. Krishnadas Academy, Varanasi, Dhatu Shodhana Marana Prakarana, verse 40.
26. Prajapati PK, Prashant Kumar, Sarkar R. Safety and toxicity profile of some metallic preparations of Ayurveda. Ancient Science of Life, 2006; 25(3&4): 57–63.
27. Madhava. Ayurveda Prakasha (Ed. Mishra Gulraj Sharma), 2nd edn, 2007. Chaukhambha Sanskrit Series, Varanasi, Chapter 3, verse 228.
28. Mukherji Pandit Bhudev. Rasajalanidhi (Deva Sharma Bhudev), Vol.3, 2004. Chaukhambha Orientalia, Varanasi, p.63.
29. Namrata Joshi, Manoj Kumar Daksh, et al. Toxicity study of Lauha Bhasma in albino rats. Anc Sci Life, 2016; 35(3): 159–166 — no untoward effect of Lauha Bhasma at therapeutic dose and at a dose five times the therapeutic dose, proving safety; alteration in some biochemical parameters and histopathology was seen at the highest dose.
30. Vaishya Shyama Sundaracharya. Rasayana Sara, Vol.1, 6th edn, 1997. Krishnadas Academy, Varanasi, Dhatu Shodhana Marana Prakarana, verses 172–173.
31. Nagaraj V, Joshi D, et al. Toxicity studies on Vanga Bhasma. Ancient Science of Life, 1984; 4(1): 32–35. — no acute toxic effect on the GIT, pancreas, or liver.
32. Madhava. Ayurveda Prakasha (Ed. Mishra Gulraj Sharma), 2nd edn, 2007. Chaukhambha Sanskrit Series, Varanasi, Chapter 3, verse 179.
33. Vaishya Shyama Sundaracharya. Rasayana Sara, Vol.1, 6th edn, 1997. Krishnadas Academy, Varanasi, Dhatu Shodhana Marana Prakarana, verse 207.
34. M. Dash. Toxicity study of Naga Bhasma with special reference to Ayurvedic measures for toxicity eradication. Int J Pharm Biol Arch, 2012.
35. Vaishya Shyama Sundaracharya. Rasayana Sara, Vol.1, 6th edn, 1997. Krishnadas Academy, Varanasi, Dhatu Shodhana Marana Prakarana, verse 212.