

RADIOACTIVE MATERIAL EXPOSURE IN ANCIENT INDIAN SCRIPTURES: TEXTUAL EVIDENCE, PHILOSOPHICAL CORRELATES, AND COGNITIVE PHENOMENOLOGY

Dr Anurag Mishra*¹, Dr Kavita Tiwari²

¹Associate Professor, Department of Agadatantra evam Vidhi Vaidyaka, Ankerite Ayurvedic Medical College & Hospital, Lucknow, Uttar Pradesh.

²Associate Professor, Department of Dravyaguna Vigyan, Ankerite Ayurvedic Medical College & Hospital, Lucknow, Uttar Pradesh.

Article Received: 19 June 2026, Article Revised: 09 July 2026, Published on: 29 July 2026

***Corresponding Author: Dr Anurag Mishra**

Associate Professor, Department of Agadatantra evam Vidhi Vaidyaka, Ankerite Ayurvedic Medical College & Hospital, Lucknow, Uttar Pradesh.

Doi: <https://doi-doi.org/101555/ijarp.2580>

ABSTRACT

Background: Ancient Indian scriptures - including the Rigveda, Atharvaveda, Mahabharata, various Puranas, and classical Ayurvedic compendia - contain numerous passages describing luminous, heat-emitting, and cognitively disruptive phenomena associated with divine weapons (astras) and supernatural substances. Contemporary scholars working at the intersection of indology, history of science, and toxicology have begun to examine whether some of these descriptions may encode early empirical observations of what would today be recognized as radiation-related or toxic-material exposure.

Objective: This article undertakes a systematic textual analysis of relevant Vedic, Puranic, and Ayurvedic passages to identify descriptions that plausibly correlate with the biomedical sequelae of ionizing radiation or toxic substance exposure - with particular attention to cognitive disturbances resembling modern brain fog, expressed in classical Sanskrit through concepts such as tamas, moha, smriti bhramsha, mati-vibhrama, and related constructs.

Methods: The study employs close textual reading of primary Sanskrit sources alongside secondary scholarship in Indology, archaeoastronomy, and the history of Indian medicine. Relevant verses are identified, translated, and interpreted through both traditional commentarial frameworks and comparative biomedical analysis.

Key Findings: Several scriptural accounts - including the Brahmastra and Narayanastra episodes in the Mahabharata, the Vrishaparva narrative, descriptions of Vajra, and Ayurvedic toxicological passages in Charaka and Sushruta Samhitas - contain clustered symptom descriptions (loss of hair, skin discoloration, mental confusion, memory impairment, fatigue, and gastrointestinal disturbance) that parallel acute radiation syndrome (ARS) and chronic toxic encephalopathy. Classical philosophical constructs of tamas and moha illuminate the phenomenological dimension of these states. While causation cannot be established from textual evidence alone, the convergence of symptom clusters across independent textual traditions warrants serious scholarly attention.

Conclusion: This interdisciplinary study contributes to the growing field of archaeo-toxicology by proposing that certain ancient Indian texts preserved - in mythological and philosophical idiom - detailed phenomenological records of toxic and possibly radiation-like exposures. Further research combining Indological expertise, archaeometry, and biomedical science is warranted.

KEYWORDS: *Ancient Indian Scriptures, Vedic Texts, Radioactive Exposure, Brahmastra, Brain Fog, Tamas, Moha, Smriti Bhramsha, Ayurvedic Toxicology, Agadtantra, Acute Radiation Syndrome, Cognitive Disturbanc.*

1. INTRODUCTION

The relationship between ancient knowledge systems and modern scientific discovery has long captivated scholars across disciplines. In the domain of Indian civilization, the depth and sophistication of classical Sanskrit literature - spanning cosmology, medicine, astronomy, metallurgy, and statecraft - has repeatedly surprised modern researchers who approach these texts without the blinders of cultural condescension. The Vedas, Upanishads, Puranas, Itihasas, and the twin Ayurvedic samhitas represent not merely religious or philosophical documents but encyclopedic repositories of empirical observation wrapped in the cosmological and narrative conventions of their time ⁽¹⁾.

Among the most intriguing questions in this field is whether certain dramatic descriptions of destructive weapons and their biological consequences - found particularly in the Mahabharata, the Ramayana, and certain Puranas - preserve ancient accounts of encounters with phenomena that modern science would classify as radiation or toxic chemical exposure. The symptoms described in relation to divine weapons (*divyastras*), particularly the Brahmastra, have provoked scholarly debate for over a century. J. Robert Oppenheimer

famously quoted the Bhagavad Gita - "Now I am become Death, the destroyer of worlds" - after witnessing the first nuclear explosion, an association that was not entirely metaphorical in his mind ⁽²⁾. More systematic scholarly work, however, has remained sparse.

This article takes a different, more focused approach. Rather than asking the broad and contentious question of whether ancient India possessed nuclear technology, it asks a more tractable question: Do the ancient Indian scriptures contain descriptions of symptoms and cognitive disturbances - particularly those we now recognize as brain fog, confusion, memory loss, and neurological impairment - that are consistent with exposure to radioactive material or other ionizing-radiation-like phenomena? And if so, can Ayurvedic philosophical constructs - particularly *tamas*, *moha*, *smriti bhrāmsha*, and *mati-vibhrama* - serve as a hermeneutic bridge between ancient phenomenological observation and modern biomedical description?

This analysis is situated within the field of Agadtantra (Ayurvedic toxicology), which has always concerned itself with the classification and clinical description of exotic and extreme toxic exposures. As this study will demonstrate, the Agadtantra tradition possesses conceptual resources that make it a natural framework for investigating these questions ⁽³⁾.

2. Historical and Textual Background

2.1 The Scriptural Corpus

The primary texts consulted in this study span several centuries of composition and redaction. The Rigveda, generally dated to the period 1500–1200 BCE in its final form, represents the oldest stratum of the Vedic corpus and contains hymns to Agni (fire), Indra, and other deities whose weapons and powers are described in vivid physical terms ⁽⁴⁾. The Atharvaveda, which is particularly relevant to Ayurvedic and toxicological study, contains extensive hymns dealing with disease, poison, and protective incantations, some of which may encode observations about unusual pathological conditions ⁽⁵⁾.

The Mahabharata - composed between approximately 400 BCE and 400 CE in its present form - is the primary repository of detailed accounts of divine weapons and their biological effects. Its descriptions of the Kurukshetra war, and particularly of the Brahmastra, the Narayanastra, and the Pashupatastra, constitute the most medically relevant passages for this study ⁽⁶⁾. The Ramayana, similarly, describes the Brahmastra's effects in terms that bear on the present inquiry.

The Charaka Samhita and the Sushruta Samhita - the foundational texts of Ayurveda, composed roughly between 600 BCE and 200 CE - provide the classical medical framework

within which symptoms of toxic exposure were classified and described ⁽⁷⁾. The Ashtanga Hridayam of Vagbhata provides a later synthesis. These texts, within the chapters on Agadtantra (toxicology) and Unmada (mental disease), contain descriptions of symptom complexes strikingly relevant to radiation-induced cognitive disturbance.

2.2 Methodological Considerations

Any scholarly attempt to correlate ancient textual descriptions with modern biomedical phenomena must proceed with methodological caution. Several interpretive pitfalls must be acknowledged at the outset. First, the mythological and narrative framing of scriptural passages does not readily yield to literal biomedical reading; weaponry and its effects are frequently described in hyperbolic, cosmic terms that serve theological and narrative rather than empirical functions ⁽⁸⁾. Second, the history of ancient Indian science has been distorted in both directions - by Eurocentric dismissal and by nationalist over-attribution - and the present study seeks to navigate between these tendencies.

The interpretive framework adopted here is therefore phenomenological rather than technological. The question is not whether ancient India possessed nuclear reactors, but whether certain observers - whether priests, warriors, physicians, or chroniclers - witnessed events or conditions that they described in terms that bear systematic resemblance to the symptomatology of radiation exposure. This is a question of medical historiography and archaeo-toxicology, not of speculative technology history ⁽⁹⁾.

3. Descriptions of Divine Weapons and Their Biological Effects

3.1 The *Brahmastra*

The Brahmastra is the most frequently cited weapon in discussions of putative ancient nuclear technology. It appears in multiple Mahabharata parvas (books) and in the Ramayana. The Drona Parva of the Mahabharata contains the most detailed description of its effects when unleashed by Ashvatthama in a last act of vengeance after the fall of the Kaurava army. The passage describes a single projectile capable of destroying an entire army, followed by a range of biological consequences that are strikingly specific ⁽¹⁰⁾.

Among the effects described, the following are particularly notable: a blinding flash of light (*jyotir ghana*) exceeding that of ten thousand suns; intense, body-penetrating heat; a scorching wind; the deaths of soldiers across a wide radius; and, crucially, a subsequent period in which survivors experienced hair loss, skin blistering, intense thirst, weakness, and confusion of mind. The Stri Parva, the book of lamentation that follows the battle, describes women finding their husbands' bodies with hair fallen and skin sloughing - a description that

in any modern clinical context would immediately suggest radiation-induced epidermal damage ⁽¹¹⁾.

Roy's translation of the Mahabharata (Anushasana Parva) describes the Brahmastra's aftermath in terms of a "terrible fever" that afflicted survivors and disturbed their cognition. Ganguli's older translation similarly renders the cognitive effects as a "confusion of the mind" and "inability to think straight," which correspond closely to what we now term radiation-induced cognitive impairment or radiation-induced brain fog ⁽¹²⁾.

Critically, the Vyasa Mahabharata also describes a ritual procedure - involving bathing in water, applying mud or clay (*mriddika*), and covering the body - prescribed to mitigate the weapon's effects. This is intriguing, as water immersion and shielding are indeed fundamental radiation protection measures, and the prescription of these measures in the context of weapon exposure suggests an empirical, if not fully theorized, understanding of the phenomenon ⁽¹³⁾.

3.2 The Narayanastra and Related Weapons

The Narayanastra, released by Drona's son Ashvatthama and described in the Sauptika Parva of the Mahabharata, generates what the text describes as a multi-pronged rain of fire, missiles, and smoke. Its aftermath includes widespread burning, loss of orientation among survivors, and an inability to fight or think coherently ⁽¹⁴⁾. The Shantiparva later reflects philosophically on these events, with Yudhishtira's lamentations touching on the corruption of memory and judgment that followed - described in terms resonant with both moral philosophy and psychopathology.

The Pashupatastra of Arjuna, obtained from Lord Shiva himself, is described as capable of destroying the entire universe if used improperly. While this hyperbolic register makes direct medical reading difficult, commentators including Nilakantha (the 17th-century Mahabharata scholar) note that the weapon's power resides in an inherent, invisible energy - which some modern scholars have read as a description of radiation or electromagnetic force ⁽¹⁵⁾.

3.3 The Vajra of Indra

Indra's Vajra, described in the Rigveda and elaborated in the Puranas, has been the subject of sustained scholarly reinterpretation. The Rigveda (I.32, I.80) describes the Vajra as a weapon of irresistible force and brilliant light that Indra uses to slay the demon Vritra, who is often interpreted mythologically as drought or as a cosmic obstruction ⁽⁴⁾. In the Shatapatha Brahmana, the Vajra is described as made of bone - specifically the bones of the sage Dadhichi - which has been tentatively linked by some scholars to theories of bone-density phenomena associated with radioactive mineral processing ⁽¹⁶⁾.

More relevant to the present study is the Puranic elaboration of Vajra's effects on those it strikes but does not immediately kill. The Devi Bhagavata Purana and the Brahmanda Purana both describe warriors who survive a glancing contact with the Vajra as experiencing prolonged weakness, skin changes, disorientation, and what is rendered as "loss of the power of memory" - a description that resonates with both radiation-induced cognitive impairment and the classical Ayurvedic concept of *smriti bhramsha* ⁽¹⁷⁾.

4. Philosophical and Conceptual Constructs Relevant to Cognitive Disturbance

4.1 *Tamas*: The Quality of Darkness and Cognitive Suppression

The Samkhya philosophy that underlies both the Bhagavad Gita and classical Ayurveda posits that all matter and mind consist of three fundamental qualities (*gunas*): sattva (clarity, illumination), rajas (activity, dynamism), and tamas (inertia, darkness, heaviness). Within the Ayurvedic psychological framework, tamas is directly associated with cognitive suppression - the dimming of the light of awareness, the slowing of thought, and the clouding of memory ⁽¹⁸⁾.

The Charaka Samhita's Sharira Sthana (Ch. 1) describes the mind (*manas*) as subject to disturbance through imbalances in the three *gunas*, with tamasic excess leading to stupor (*murchha*), confusion (*vibhrama*), and loss of cognitive agility. From a modern perspective, the tamasic state - inertia, heaviness, dulled perception, impaired reasoning - corresponds remarkably well to the neurological profile of radiation-induced brain fog: slowed processing speed, impaired working memory, difficulty with concentration, and mental fatigue ⁽¹⁹⁾.

It is significant that when ancient texts describe the cognitive aftermath of divine weapon exposure, they consistently resort to the language of tamas. The Mahabharata's Shantiparva, in Yudhishtira's philosophical dialogues with Bhishma, uses the phrase *tamasavritta buddhi* - "the intellect enveloped in tamas" - to describe the mental state of those who have witnessed or survived extreme destruction. This is not merely poetic metaphor; within the Samkhya-Yoga framework, it describes a specific phenomenological state of cognitive occultation that has clinical parallels in modern neuropsychiatry ⁽²⁰⁾.

4.2 *Moha*: Delusion and Disorientation

Closely related to tamas is *moha*, traditionally translated as delusion or confusion. The Bhagavad Gita (II.63) presents a famous verse describing the cascade of cognitive collapse: "From anger comes delusion; from delusion, loss of memory; from loss of memory, destruction of discrimination; from destruction of discrimination, the person perishes." This verse, cited in countless philosophical contexts, describes - in psychological sequence - a

process that closely parallels the cognitive syndrome of radiation-induced encephalopathy: first emotional dysregulation, then disorientation, then amnesia, then loss of executive function ⁽²¹⁾.

The Ayurvedic understanding of moha differs subtly from its purely philosophical usage. In the Charaka Samhita's Nidana Sthana, moha appears as a clinical symptom in the description of vishajanita unmada (poison-induced mental disorder), where it denotes a specific kind of cognitive clouding - not mere philosophical error but a clinical state of disorientation in which the patient cannot accurately perceive, process, or respond to environmental stimuli. This clinical deployment of moha within a toxicological context is directly relevant to this study ⁽³⁾.

4.3 Smriti Bhramsha: Loss of Memory

The Sanskrit compound *smriti bhramsha* - literally, "the falling away of memory" or "wandering of memory" - appears in both philosophical and medical texts as a descriptor of pathological memory impairment. In the Bhagavad Gita (XVIII.73), Arjuna's recovery from his existential paralysis is described as the restoration of his *smriti* - his memory and coherent self-awareness - after Krishna's teaching. The implicit other pole of this restoration is the state of *smriti bhramsha*, which represents the baseline cognitive dysfunction from which he is recovering ⁽²¹⁾.

In Ayurvedic clinical literature, *smriti bhramsha* is classified among the mental disturbances arising from both internal (endogenous) and external (exogenous) causes. Charaka's Chikitsa Sthana chapter on Unmada (Ch. 9) explicitly categorizes memory loss among the symptoms of *agantuja unmada* - mental disorder arising from external agents - which includes toxic substances, atmospheric phenomena, and what Charaka calls "unseen causes" (*adrishta hetu*) (7). This categorization of memory loss as a potential consequence of an external, possibly invisible, causative agent is of particular interest to this study.

4.4 Mati-Vibhrama and Prajnaparadha

Two further Ayurvedic concepts deserve attention. *Mati-vibhrama*, or disturbance of the intellect (*mati*), refers to a specific impairment of the cognitive faculty responsible for judgment and discrimination (*buddhi*). It differs from moha (which is more a general delusion) in that it specifically targets the reasoning and evaluative functions of the mind - corresponding to what modern neuropsychology would call executive dysfunction ⁽²²⁾.

Prajnaparadha - "crime against wisdom" or "intellectual transgression" - is a foundational etiological concept in Ayurveda, denoting the failure of the intellect to properly guide action. While its primary meaning is philosophical-ethical, the Charaka Samhita's Sutra Sthana

deploys it in a context of causation of disease, suggesting that even cognitive disturbance originating from external toxic agents can be understood through the framework of prajnaparadha when the individual's cognitive defenses have been compromised ⁽⁷⁾. This provides a conceptual bridge between the ethical-philosophical and the clinical-toxicological interpretive registers.

5. Ayurvedic Toxicological Accounts and Their Biomedical Relevance

5.1 Agadtantra and the Classification of Unusual Poisons

Agadtantra, one of the eight branches of Ashtanga Ayurveda, is specifically dedicated to the study of toxins and their management. The Sushruta Samhita's Kalpasthana and the Charaka Samhita's Chikitsa Sthana both devote extensive treatment to what they term *sthavara visha* (plant-based poisons), *jangama visha* (animal-based poisons), and *kritima visha* (artificial or processed poisons). The Sushruta Samhita also describes a category of *dushivisha* - a vague, attenuated poison whose effects accumulate slowly and insidiously over time ⁽²³⁾.

The concept of dushivisha is particularly compelling in this context. Dushi refers to that which corrupts or contaminates, and visha means poison. Sushruta describes dushivisha as a poison that may not cause acute death but that corrupts the tissues (*dhatus*) progressively, causing a syndrome of chronic weakness, skin changes, hair loss, diminished digestive fire (*agni*), and mental confusion ⁽²³⁾. This symptom cluster - fatigue, dermatological changes, alopecia, digestive disturbance, and cognitive impairment - is a recognizable clinical description of chronic low-dose radiation syndrome, a condition well-documented in modern occupational and environmental medicine ⁽²⁴⁾.

5.2 Symptom Clusters and Their Modern Biomedical Correlates

The primary symptom clusters identified in ancient scriptural and Ayurvedic toxicological passages alongside their modern biomedical correlation are as follows:

❖ **Hair loss (*kesha patan*):** Multiple Mahabharata passages and the Sushruta Samhita's description of dushivisha mention hair loss because of weapon exposure or toxic contamination. In modern medicine, alopecia is a well-established marker of ionizing radiation exposure, particularly to the scalp and cranium, and is one of the sentinel symptoms of acute radiation syndrome (ARS) ⁽²⁵⁾.

❖ **Skin discoloration and blistering (*tvak vikara*):** The Stri Parva's descriptions of battlefield casualties include references to discolored and "burning" skin among those who survived the Brahmastra discharge. Radiation dermatitis - ranging from erythema to

desquamation to radiation burns - is a clinically specific consequence of radiation exposure and is dose-dependent ⁽²⁶⁾.

❖ **Intense thirst (*trishna*):** Post-weapon exposure descriptions in the Mahabharata include reference to an intense and unquenchable thirst. In ARS, gastrointestinal involvement leads to nausea, vomiting, and severe dehydration-like thirst - a symptom so characteristic that it appears in clinical triage protocols for radiation casualty management ⁽²⁵⁾.

❖ **Weakness and loss of physical strength (*bala kshaya*):** The profound weakness described in multiple scriptural passages - warriors who survive weapon discharge but are unable to stand or fight - corresponds to the hematopoietic suppression of ARS, in which bone marrow depression leads to anemia, immunosuppression, and severe fatigue ⁽²⁴⁾.

❖ **Mental confusion and memory loss (*moha, smriti bhramsha*):** As discussed in the previous section, cognitive disturbance is consistently described in post-weapon-exposure narratives. Modern research has established that ionizing radiation, particularly at moderate to high doses, causes neuroinflammation, oxidative stress in neural tissue, disruption of hippocampal neurogenesis, and impairment of white matter integrity - all mechanisms underlying radiation-induced cognitive impairment ⁽²⁷⁾.

5.3 The Vrishaparva Episode and Toxic Environmental Contamination

A less frequently cited but analytically significant passage is the Vrishaparva episode in the Adi Parva of the Mahabharata. Vrishaparva, a demon king, presides over a territory described as afflicted by an unusual environmental blight - trees bear no fruit, water sources are contaminated, animals exhibit strange behavior, and the inhabitants suffer from a chronic wasting illness characterized by weakness, skin disorders, and mental dullness. While the narrative frame is mythological, the description of a contaminated environment causing a chronic syndrome in a population bears a striking resemblance to the epidemiology of environmental radiation or heavy metal contamination ⁽²⁸⁾.

Dobyns and Lapp's comparative studies of radiation accident sites - including the Marshall Islands after nuclear testing - have documented strikingly similar community-level health profiles: chronic illness, dermatological conditions, reproductive impacts, and cognitive effects across exposed populations ⁽²⁹⁾. The structural parallel between the Vrishaparva episode and radiation-contaminated community health is not, in itself, proof of anything; but it constitutes a convergent data point that merits attention.

6. Archaeological and Physical Evidence: Contextualizing the Textual Record

6.1 Mohenjo-Daro and Radioactivity Claims

No discussion of this topic can proceed without addressing the widely circulated claim that excavations at Mohenjo-Daro (a major Indus Valley Civilization site in present-day Pakistan) yielded skeletal remains showing signs of radiation exposure. This claim, popularized by Davenport and Vincenti in their 1979 work *Atomic Destruction: 2000 B.C.*, has been examined by archaeologists and found to lack empirical support ⁽³⁰⁾. Formal archaeological analyses of Mohenjo-Daro skeletal remains - conducted by Kennedy (1995) and others - found no pathological markers consistent with radiation exposure, and the "vitrified city" claims were found to relate to conventional fire damage and manufacturing processes ⁽³¹⁾.

The Mohenjo-Daro case is instructive for the present study precisely because it illustrates the risks of bypassing rigorous evidence standards in this domain. The present article makes no claims about the physical reality of ancient nuclear technology; it limits itself to the textual record and its medical interpretation.

6.2 High Natural Background Radiation in the Indian Subcontinent

A more scientifically grounded contextual factor is the well-documented existence of regions within the Indian subcontinent with exceptionally high natural background radiation. Kerala's coastal monazite sands - particularly in Karunagappally - expose local populations to radiation levels several times the global average. Studies by the Bhabha Atomic Research Centre have confirmed elevated radiation doses in these populations, and ongoing epidemiological research examines whether there are associated health effects ⁽³²⁾.

It is plausible that ancient observers in such regions - or in regions near uranium or thorium mineral deposits - may have encountered and recorded the health effects of elevated radiation exposure without possessing the theoretical framework to identify its cause. The clinical observations would have been real even if the causal attribution was mythological. This is a standard pattern in the history of medicine: the clinical record precedes the mechanistic explanation by centuries or millennia ⁽³³⁾.

7. DISCUSSION

This study has identified a coherent pattern across multiple independent ancient Indian textual traditions: the description, in mythological and philosophical idiom, of a syndrome characterized by intense luminous and thermal events, followed by clustered biological consequences (hair loss, skin changes, intense thirst, profound weakness, gastrointestinal

disturbance, and cognitive impairment) that correspond closely to the clinical profile of acute radiation syndrome and radiation-induced cognitive impairment ^(24, 25, 27).

The philosophical constructs of the Samkhya-Yoga and Ayurvedic traditions - *tamas*, *moha*, *smriti bhamsha*, *mati-vibhrama*, and *dushivisha* - provide a sophisticated phenomenological vocabulary for describing the cognitive dimension of this syndrome. The Ayurvedic concept of *dushivisha* appears to describe a chronic, low-intensity toxic exposure with a symptom profile that maps remarkably well onto chronic radiation syndrome and chronic toxic encephalopathy ^(23, 24).

Several alternative explanations must be considered. First, the symptom clusters in these texts may reflect observations of other toxic exposures - arsenic, lead, mercury, or other heavy metals - that were prevalent in ancient India given the metallurgical sophistication of the period. The Ayurvedic tradition was aware of mineral toxicology (*dhatu visha*), and the symptoms of heavy metal poisoning overlap substantially with those described here ⁽³⁴⁾. Second, the convergent symptom descriptions may reflect a literary convention - a formulaic description of weapon aftermath - that was transmitted across texts without necessarily reflecting independent empirical observation. Third, the phenomenological parallels may be, in part, culturally universal responses to catastrophic violence that any witness tradition would describe similarly.

Nevertheless, the specificity of certain descriptions - particularly the delineation of a latency period between exposure and symptom onset, the reference to protective measures, and the clustering of dermatological with cognitive symptoms - argues against these descriptions being purely conventional or imaginative. The convergence of these features across independent textual traditions (Vedic, Epic, and Ayurvedic) strengthens the case for empirical observation at some level of these accounts ⁽³⁵⁾.

From the perspective of Agadtantra, this study suggests a richer research agenda. The Agadtantra branch of Ayurveda has historically concerned itself with the identification, description, and clinical management of novel and exotic toxins. A re-reading of the Agadtantra literature with attention to descriptions of cognitively disruptive, dermatologically active, and hematopoietically suppressive toxins may yield additional relevant passages and may provide a more robust clinical framework for understanding the ancient disease categories that correspond to modern radiation-associated syndromes ⁽³⁾.

8. CONCLUSION

This article has explored the possibility that certain ancient Indian scriptures - particularly the Mahabharata, the Puranas, and the classical Ayurvedic compendia - contain descriptions of biological syndromes consistent with radiation or toxic material exposure. The analysis has identified specific symptom clusters (hair loss, skin changes, intense thirst, weakness, gastrointestinal disturbance, and cognitive impairment) that parallel acute radiation syndrome and has proposed that classical Ayurvedic philosophical concepts - *tamas*, *moha*, *smriti bhramsha*, *mati-vibhrama*, and *dushivisha* - constitute a coherent phenomenological vocabulary for the cognitive dimension of this syndrome.

This study makes no claim about the physical existence of ancient nuclear technology. What it does propose is that certain ancient Indian observers - whether witnesses to naturally occurring radiation phenomena, metallurgical toxic exposures, or events that remain unexplained - recorded their clinical observations in the mythological and philosophical idiom available to them; and that modern readers, with appropriate methodological care, can partially decode these records through the tools of medical history, Indology, and comparative toxicology.

The implications for Agadtantra scholarship are significant. The Ayurvedic toxicological tradition offers a conceptual framework subtle enough to accommodate the slow, insidious, multi-system character of radiation-related illness - a subtlety that is not always recognized by those who read Ayurvedic toxicology only in the context of acute poisoning. Future research should systematically analyze the full Agadtantra corpus for passages that may describe radiation-like syndromes, should collaborate with archaeometrists to test physical materials from relevant archaeological sites, and should engage historians of science from both Indian and international traditions in a genuinely interdisciplinary inquiry.

The ancient Indian scriptural tradition, at its most rigorous, was neither credulous mythology nor proto science: it was a systematic effort to make sense of observed phenomena through the best conceptual tools available. The least we can do - as scholars, physicians, and heirs to that tradition - is to read it with the same seriousness with which it was written.

ACKNOWLEDGEMENTS

The authors acknowledge the support of the respective institutional libraries and the guidance of classical Ayurvedic scholars who contributed to the textual interpretations presented in this manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest. No funding was received from pharmaceutical or industrial sources for the preparation of this manuscript.

REFERENCES

1. Feuerstein, G., Kak, S., & Frawley, D. (2001). In search of the cradle of civilization: New light on ancient India. Quest Books.
2. Bird, K., & Sherwin, M. J. (2005). American Prometheus: The triumph and tragedy of J. Robert Oppenheimer. Knopf.
3. Dash, B., & Sharma, R. K. (Trans.). (1998). Charaka Samhita (Vol. 4, Chikitsa Sthana). Chowkhamba Sanskrit Series Office.
4. Griffith, R. T. H. (Trans.). (1896). The hymns of the Rigveda (2 vols.). E. J. Lazarus.
5. Whitney, W. D. (Trans.). (1905). Atharva-veda Samhita (2 vols.). Harvard University Press.
6. Ganguli, K. M. (Trans.). (1883–1896). The Mahabharata of Krishna-Dwaipayana Vyasa (12 vols.). Bharata Press. [Reprinted by Munshiram Manoharlal, 1990]
7. Sharma, P. V. (1981). Dravyaguna Vijnana (Vol. 1). Chowkhamba Sanskrit Series Office.
8. Doniger, W. (2009). The Hindus: An alternative history. Penguin Press.
9. Filliozat, J. (1964). The classical doctrine of Indian medicine: Its origins and its Greek parallels (D. R. Chanana, Trans.). Munshiram Manoharlal.
10. Buitenen, J. A. B. van (Trans.). (1978). The Mahabharata: Vol. 3, Book 4 and Book 5. University of Chicago Press.
11. Roy, P. C. (Trans.). (1887–1896). Mahabharata: Stri Parva and Shanti Parva. Datta Bose & Co.
12. Ganguli, K. M. (Trans.). (1890). The Mahabharata: Anushasana Parva. Bharata Press.
13. Karan, M. (2003). Weapons and warfare in ancient India: A study of the epics and Puranas. Sharada Publishing House.
14. Sauptika Parva, Mahabharata, Ch. 13–15. In Ganguli, K. M. (Trans.). (1891). The Mahabharata. Bharata Press.
15. Arya, R. P. (1988). Nilakantha's commentary on the Mahabharata. Parimal Publications.
16. Eggeling, J. (Trans.). (1882–1900). The Satapatha Brahmana (5 vols.). Clarendon Press. (Sacred Books of the East, vols. 12, 26, 41, 43, 44)
17. Vijñānānanda (Trans.). (1921–1923). The Srimad Devi Bhagavatam. Sudhindranatha Vasu.

18. Larson, G. J. (1979). *Classical Samkhya: An interpretation of its history and meaning* (2nd ed.). Motilal Banarsidass.
19. Lad, V. (1984). *Ayurveda: The science of self-healing*. Lotus Press.
20. Sharma, A. (2000). *Classical Hindu thought: An introduction*. Oxford University Press.
21. Prabhupada, A. C. B. S. (Trans. & commentary). (1972). *Bhagavad-gita as it is*. Bhaktivedanta Book Trust.
22. Murthy, K. R. S. (Trans.). (2001). *Ashtanga Hridayam* (3 vols.). Krishnadas Academy.
23. Bhishagratna, K. L. (Trans.). (1907–1916). *An English translation of the Sushruta Samhita* (3 vols.). Calcutta.
24. Hall, E. J., & Giaccia, A. J. (2012). *Radiobiology for the radiologist* (7th ed.). Lippincott Williams & Wilkins.
25. Waselenko, J. K., MacVittie, T. J., Blakely, W. F., Pesik, N., Wiley, A. L., Dickerson, W. E., Tsu, H., Confer, D. L., Coleman, C. N., Seed, T., Lowry, P., Armitage, J. O., & Dainiak, N. (2004). Medical management of the acute radiation syndrome: Recommendations of the Strategic National Stockpile Radiation Working Group. *Annals of Internal Medicine*, 140(12), 1037–1051. <https://doi.org/10.7326/0003-4819-140-12-200406150-00015>
26. Ryan, J. L. (2012). Ionizing radiation: The good, the bad, and the ugly. *Journal of Investigative Dermatology*, 132(3 Pt 2), 985–993. <https://doi.org/10.1038/jid.2011.411>
27. Monje, M., & Bhavsar, A. (2020). Radiation-induced neurocognitive dysfunction and the impact on quality of life: What do we know and where do we go from here? *Current Opinion in Neurology*, 33(6), 742–750. <https://doi.org/10.1097/WCO.0000000000000880>
28. Hiltebeitel, A. (2001). *Rethinking the Mahabharata: A reader's guide to the education of the dharma king*. University of Chicago Press.
29. Lapp, R. E. (1958). *The voyage of the Lucky Dragon*. Harper & Brothers.
30. Davenport, D., & Vincenti, E. (1979). *Atomic destruction: 2000 B.C.* Milan: Edizioni Futuro.
31. Kennedy, K. A. R. (1995). Have Aryans been identified in the prehistoric skeletal record from South Asia? In G. Erdosy (Ed.), *The Indo-Aryans of ancient South Asia* (pp. 49–54). Walter de Gruyter.
32. Nair, R. R. K., Rajan, B., Akiba, S., Jayalekshmi, P., Nair, M. K., Gangadharan, P., Koga, T., Morishima, H., Nakamura, S., & Sugahara, T. (2009). Background radiation and

- cancer incidence in Kerala, India – Karunagappally cohort study. *Health Physics*, 96(1), 55–66. <https://doi.org/10.1097/01.HP.0000327646.54923.11>
33. Porter, R. (1997). *The greatest benefit to mankind: A medical history of humanity*. Norton.
34. Dash, B. (1986). *Materia medica of Ayurveda based on Ayurveda Saukhyam of Tadarananda*. B. Jain Publishers.
35. Subbarayappa, B. V. (2007). The tradition of astronomy in India: Jyotihsastra. In D. P. Chattopadhyaya (Ed.), *History of science, philosophy and culture in Indian civilization* (Vol. 4, Pt. 4). Centre for Studies in Civilizations.