



ISSN: 2277- 7695  
TPI 2015; 4(7): 16-19  
© 2015 TPI  
www.thepharmajournal.com  
Received: 10-07-2015  
Accepted: 13-08-2015

**Ittoop J Ancheril**  
Research scholar,  
Department of Agada Tantra,  
SDM College of Ayurveda and  
Hospital, Hassan -573201,  
Karnataka, India.

**Ashwin Kumar Bharati**  
Professor and Head,  
Department of Agada Tantra,  
SDM College of Ayurveda and  
Hospital, Hassan -573201,  
Karnataka, India.

**Arun Raj GR**  
Assistant Professor,  
Department of Kaumarabhritya,  
SDM College of Ayurveda and  
Hospital, Hassan -573201,  
Karnataka, India.

**Rajalakshmi R**  
Research scholar,  
Department of Agada Tantra,  
SDM College of Ayurveda and  
Hospital, Hassan -573201,  
Karnataka, India.

**Harshavardhan B**  
Research scholar,  
Department of Agada Tantra,  
SDM College of Ayurveda and  
Hospital, Hassan -573201,  
Karnataka, India.

**Deepthi Vijayan**  
Resident Medical Officer, SDM  
College of Ayurveda and  
Hospital, Hassan -573201,  
Karnataka, India.

**Correspondence:**

**Ittoop J Ancheril**  
Research scholar,  
Department of Agada Tantra,  
SDM College of Ayurveda and  
Hospital, Hassan -573201,  
Karnataka, India.

## Concept of cumulative toxicity (Dushi Visha) in Ayurveda

**Ittoop J Ancheril, Ashwin Kumar Bharati, Arun Raj GR, Rajalakshmi R, Harshavardhan B, Deepthi Vijayan**

### Abstract

A poison, which is having fewer properties, which means less than ten classical properties that actually a poison should have, or either the poison which is having lesser potency of all the ten properties, attains a latent or hidden stage in the body is called Dushi Visha (latent poison). Low potency of all the ten qualities are said to be responsible for the delayed action and cumulative toxicity on the body. A much-detailed description about Dushi Visha is not seen in Ayurvedic classics. The concept of Dushi Visha is still an enigma. That is, what factors can be considered under Dushi Visha, how it remains in the body without undergoing elimination, how does it causes cumulative toxicity, which factors will aggravate Dushi Visha, how the clinical features of Dushi Visha can be better understood? To get proper answer to all these practical queries, it is very much necessary to go through the pathology and clinical impact of Dushi Visha. Here an attempt is made to review the concept of Dushi Visha in detail.

**Keywords:** Dushi Visha, cumulative toxicity, Virudhahara, latent poison.

### Introduction

The term Dushi Visha is a combination of two different words, 'Dushi' and 'Visha' [1]. 'Dushi' means denatured, attenuated, latent, vitiated. Visha means poison [2]. Thus Dushi Visha means denatured poison or attenuated poison [3]. Attenuated or denatured poisons function as latent toxin in the body [4]. Susruta and Vagbhata described Dushi Visha as any kind of poison originating from inanimate or animate sources or any artificial poison (Kritrima Visha) retained in the body after partial expulsion or which has provisionally undergone detoxification, by the anti-poisonous drugs, forest fire, the wind or the sun is termed latent poison (Dushi Visha) [5]. Any poison that is devoid of the natural ten properties of Visha, incapable of producing acute symptoms of poisoning can also be designated Dushi Visha. A poison, which is having fewer properties, which means less than ten classical properties that actually a poison should have, or either the poison, which is having lesser potency of all the ten properties, attains a latent or hidden stage in the body called Latent poison (Dushi Visha). Low potency of all the ten qualities is said to be responsible for the delayed action and cumulative toxicity on the body [6]. Because of the low potency of the poison, it usually won't causes sudden death. Because of the enveloping (Avarana) action by humor Kapha, these low potency poisons is retained in the body for a long period without producing any grave or fatal symptoms [3].

### Clinical features of Dushi Visha

The prodromal symptoms of latent poison (Dushi Visha) are narcolepsy, a feeling of heaviness of the body, yawning, laxity of joints, horripilation and body ache [5]. One who suffers from latent poison (Dushi Visha) will have loose motion, his complexion will be altered, his mouth will emit foul smell, olfactory and gustatory senses will be impaired and he will suffer from unquenchable thirst. Slurring and broken speech, vomiting, sorrow, and sudden bouts of unconsciousness are also seen, and symptoms of ascites (Dooshyodara) can be seen. The above symptoms are followed by sense of intoxication after consuming food, indigestion, anorexia, appearance of red patches all over the body, edema of the face and extremities, urticaria, fainting, ascites, vomiting, diarrhea, discoloration, epileptic attacks, intermittent fever and increased thirst [5].

### Symptoms according to site

When Dushi Visha is retained in stomach (Amashaya) it produces the diseases due to derangement of humors Kapha and Vata humors i.e. unconsciousness, vomiting, diarrhea, tympanitis, burning sensation, tremors, altered sensorium etc. When located in intestines

(Pakwashaya), it produces diseases of deranged Vata and Pitta humors such as burning sensation all over the body, fainting, diarrhoea, tympanitis and anemia [5].

**Symptoms according to predominance of humor (Dosha):**

Vitiating of each humor (Dosha) produces specific clinical features and these are described in Charaka Samhita [7]. The predominance of humor (Dosha) in latent poison (Dushi Visha) can be ascertained by the respective symptoms (table 1).

**Table 1:** Clinical feature produced by Doshas

Dosha	Symptoms
Vata	Chest pain (Hrtpeeda), belching (Urdhwanila), stiffness (Sthambha), pain in the bones (Asthiruk), joint pain (Parvaruk), binding pain (Udveshtana), Lassitude (Gatrasada)
Pitta	Sensory loss (Sanjnanasha), warm expiration (Ushnanishwasa), chest burn (Hrtidaha), pungent taste in the mouth (Katukasyata), edema (Sopha)
Kapha	Vomiting (Chardi), anorexia (Arochaka), heart burn (Hrillasa), salivation (Praseka), heaviness of the body (Gourava), coldness (Shaitya), sweet taste (Mukhamadhurya)

**Factors that aggravate Dushi Visha**

Polluted land (Dooshitadesha), deranged seasons (Kala), toxic food (Anna) and daytime sleep (Diwaswapna) are factors that aggravate latent poison (Dushi Visha). Existing latent poison (Dushi Visha) can aggravate in the presence of these factors. Commentator Dalhana has explained these symptoms in detail [5].

**Polluted land:** Polluted land (Dushita Desha) can be considered as wet, watery or humid land (Anupa Desha) where excess wind, cold weather and increased rainfalls are present. Such land (Anupa Desha) influences on humors Kapha and Vata, and leads to aggravation of poison (Visha) in the body as latent poison (Dushi Visha) is enfeebled by humor Kapha.

**Deranged atmosphere:** Kala can be considered as cold wind (Sheet Anila) and cloudy days (Durdina), which may have relation with latent poison (Dushi Visha). Rain makes body moist (Klinna), cold air reduces the power of digestion (Pachakagni) i.e. metabolism or detoxification is deranged and may lead to aggravation of both Kapha and Vata Dosha.

**Toxic or harmful food:** Food (Anna) can be considered as alcohol, sesame oil and horse gram, hot (Teekshna), Vidahi Dravyas and unwholesome food, which aggravate Pitta Dosha by their nature. And other aggravating factors like anger, indulgence in sex, exercise etc affect both body and the mind are also equally capable to aggravate latent poison (Dushi Visha). Hence these factors can be further classified as Aharaja (the factors concerned to food like Sura (alcohol), Tila (sesame) etc.), Viharaja - the factors concerned to activities like exercise, over strain etc. and Kalaja (seasonal factors like wetland, cold weather, cloudy weather etc.). Based on the body and mind, they can be classified as somatic (Shareerika) factors that are concerned with the body and psychic (Manasika), factors that are concerned with the mind. These secondary causative factors can again be broadly classified as Exogenous (external factors) and Endogenous (internal factors). Endogenous comprises of Psychic (Manasika) and dietary (Aharaja) factors whereas Exogenous factors

comprises Seasonal (Kalaja) and lifestyle dependent (Viharaja) factors.

**Complications of Dushi Visha:** Complications like pyrexia, burning sensation, hiccough, distension of abdomen, impotence, edema, diarrhea, fainting, cardiac disorders, abdominal enlargement, insanity, tremors, and similar other complications should be treated with the respective remedial measures for the aforesaid diseases by the use of anti-poisonous drugs [8].

**Prognosis of Dushi Visha:** Dushi Visha in the prudent and in early cases of poisoning is curable, cases of one year's standing become relievable, while even this type of poisoning in an enfeebled and imprudent patient, who is taking unwholesome food should be considered to be incurable [8].

**Explanation on Latent Poison (Dushi Visha)**

**1. Partially metabolized:** It has got two aspects;

- When Visha, which is capable of producing acute ill effects, is kept for long time, some of them may lose its original properties, ultimately gets converted to low potential Visha, which is latent poison (Dushi Visha).
- Poison (Visha) whether inanimate (Sthavara), animate (Jangama) or artificial (Kritrima) which is not completely eliminated from the body or partially detoxified and being retained or accumulated in the body and localized at various sites of tissues producing cumulative effect is latent poison (Dushi Visha). It can also be called chronic poisoning or latent poisoning. In the chronic poisoning symptoms develop insidiously and more gradually. There is exacerbation of symptoms after the suspected food, medicine and exposure to environment factors like cloudy weather, rain etc. there is remission or even complete disappearance of symptoms on the removal of the patient from his usual surroundings.

**2. Incompletely inactivated by antitoxic drugs:** It means partial detoxification by antidotes on in-complete metabolism of poison, which also retains some properties. Detoxification is a chemical process that occurs in the body to convert toxic substances in to non-toxic substances for eliminated from body through excretion.

**3. Burnt by forest fire:** Exposure to heat flame or fire etc. converts Visha in to latent poison (Dushi Visha). This is because, certain properties of Poison (Visha) are altered by exposure to heat and fire and this, in turn results in reduced potency of Visha whereby, its properties are altered, leading to latent poison (Dushi Visha).

**4. Dried up in wind:** Cold wind (Sheetalavata) dries up the water content of poison (Visha) reducing its properties such as Teekshna, Ushna etc. thus transforming potent Visha into less potent latent poison (Dushi Visha).

**5. Dried in the sun:** Sunrays, which contain ultra-violet rays, infra-red and x-radiations has got influence on the earth as solar terrestrial effects. Among those, UV rays are important because of its effect on the biological phenomenon. It disinfects air, water and other substances including even poisonous substances if kept on sun exposure more detoxification takes place, which in turn reduces the potency of poison.

## 6. Lacking in the classical ten properties of poison:

Naturally all Visha whether it is inanimate (Sthavara), animate (Jangama) or artificial (Krtrima) have all the classical ten properties (Gunas) like Teekshna, hot (Ushna), dry (Ruksha) etc. Presence of these Gunas can cause acute or sub-acute poisoning. But if any one or more of these properties (Gunas) are absent in a particular Visha, it can become Dushi Visha that is of low potency by nature. In Dushi Visha, presence of Teekshna, hot (Ushna) etc, Gunas are not potent enough to produce acute or sub-acute poisoning. At the same time consumption of these will produce symptoms of Dushi Visha. It flares up in the presence of aggravating factors. This may be due to the absence of quick spreading (Vyavaayi), Vikasi and fast acting (Ashukari) Gunas, which are more potent in acute poisoning. Some substances are naturally less potent and may produce symptoms of latent poison (Dushi Visha) as Charaka has classified worms & insects (Keetas) into Pranaharakeeta and Dushi Vishakeeta and commentator Chakrapani has commented on Dushi Vishakeeta as mild (Alpa Visha) keeta.

### Treatment of Dushi Visha

A patient afflicted with the effect of Dushi Visha inherent in the system should be first done Swedana and follow the Vamana and Virechana Karma (detoxifying procedures) according to Dosha predominance. After Kaya Shodhana (purificatory therapies), daily Agadapana (anti-toxic drugs) should be done with Dushi Vishari agada (table 2) [9].

**Table 2:** Ingredients of Dushi Vishari agada

Sl. No.	Drug	Botanical Name
1.	Pippali	<i>Piper longum</i> Linn. [10]
2.	Dhyamaka	<i>Cymbopogon martinii</i> (Roxb.) Wats. [11]
3.	Jatamamsi	<i>Nardostachys jatamansi</i> (D.Don) DC. [12]
4.	Lodhra	<i>Symplocococcus racemosa</i> Roxb. [13]
5.	Ela	<i>Elettaria cardamomum</i> Maton. [14]
6.	Suvarchika	<i>Tribulus terrestris</i> L. [15]
7.	Kutannatum	<i>Oroxylum indicum</i> (L.) Benth. ex Kurz [16]
8.	Natam	<i>Valeriana wallichii</i> [17]
9.	Kusta	<i>Saussurea lappa</i> DC. [18]
10.	Yastimadhu	<i>Glycyrrhiza glabra</i> L. [19]
11.	Chandana	<i>Santalum album</i> L. [20]
12.	Gairika	Red ochre [21]

### Discussion

According to Charaka, latent poison (Dushi Visha) vitiates Raktadhatu (blood) and causes skin diseases such as Kitibha and Kota. Latent poison (Dushi Visha) vitiates the humors (Doshas) one by one and at last causing death. Chakrapani's comment on this verse as, the poison, which gets aggravated after a long time is latent poison (Dushi Visha). Even Dushi Visha Keetas are also considered as low potency poison (Heena Visha). Vagbhata has also endorsed the view of Susruta. Madhava Nidana has given same explanation as that of Sushruta. But in Madhukosha commentary on Madhava Nidana author has given some clarifications regarding Dushi Visha. Cold wind (Sheetanila), cloudy days (Durdina) are considered as aggravating factors of latent poison (Dushi Visha) as they aggravate Kaphadosha, and latent poison (Dushi Visha) is covered (Avrita) by Kapha. Laxity of joints (Vishlesha) and Romaharsha (horripilation) are Vata-kapha Lakshanas, Annamada is considered as improperly metabolized tissue rasa (Rasaajeerna) by author Gadadhara. Avipaka is clarified as improper digestion (Annasyaapaka). It is also told that, latent poison (Dushi Visha) can cause impotence. Author Bhavamisra, in his work Bhavaprakasha

has also agreed to the same explanation as of Susruta. The commentator has clarified some of the points like 'Kaphavrutam' by saying that the potency of hot (ushna), minute (Sukshma), dry (Ruksha) etc. Gunas are reduced by Kapha. Because of Kapha Dosha, Avarana defective digestion (Agnimandya) and defective metabolism (Dhatwagnimandya) occurs which in turn leads to Apakata of latent poison (Dushi Visha) and stays for long time in the body without producing any signs and symptoms. According to Yogaratnakara, artificial poison (KrtrimaVisha) is of two types, one is latent poison (Dushi Visha) formed by mixing toxic components (Savishadravyas) another is Gara Visha formed by non-toxic components (Nirvishadravyas). According To Kriyakoumudi, the author agrees with the explanation of Susrutha but added that, even external application of medicated paste (Pralejadi) may transform to latent poison (Dushi Visha) after the initial absorption. Bacterial toxins and drugs like antibiotics, steroids etc, frequent food (Adhyshana), incompatible food (Viruddhahara), intake of food prior to digestion of food last taken (Ajeernaavastha) also come under latent poison. He adds that feces (Mala), urine (Mutra), menstrual blood (Artava), not properly discharged from the body may also become latent poison (Dushi Visha). Some secondary aggravating factors mentioned are fear (Bhaya), thirst (Trishna), weakness (Dourbalya), sorrow (Vyasana), hunger (Kshuda), exercise Aadhvana), diarrhea (Atisara), and an increase in Vata and Pitta, thunder, sexual intercourse, and Vishasankata. In Gara Visha or Kaivisha condition also same features of latent poison (Dushi Visha) are seen but death supervenes only in Kaivisha and not in latent poison (Dushi Visha). He also has mentioned some of Dushi Vishakeeta, spider (Luta) and rat (Mushika) features (Lakshanas). In Dushi Vishaasadhyaalakshanas (symptoms), bleeding and fever are extra symptoms mentioned.

In classics it is very well mentioned that 'any type of poison irrespective of inanimate (Sthavara), animate (Jangama) and artificial poison (KrtrimaVisha) will attain a stage called latent poison (Dushi Visha) after they divest their potency to some extent or if they are improperly expelled or partially detoxified in the body. And some things are basically less toxic can be considered as latent poison. Present food habits, life style and mental attitudes etc. are entirely different from that of the past. The basic essentials of life air, food and water are all polluted and the hazards paint a gloomy picture for the coming generation. So by considering factors such as Viruddhahara and Ahitahara, Fast foods and cold beverages like colas, Alcohol, tobacco, Drugs like quinine, NSAIDs, steroids, Pesticides, metals, minerals, pollutants etc. can be considered under latent poison (Dushi Visha).

### Conclusion

The concept of latent poison (Dushi Visha) is not clearly explained in many of Ayurvedic classics. Certain points need clarification like the topics that can be considered under the heading of Dushi Visha or its extent. It is not explained anywhere in the Ayurvedic literature. It is felt that this is the proper time to consider these factors and these should further be studied separately under the heading of latent poison (Dushi Visha) for the better perception.

### Acknowledgement

Authors are highly grateful to the constant guidance and support from the faculty and post graduate scholars, Department of Agada Tantra, SDM College of Ayurveda and Hospital, Hassan.

## References

1. Ashish BG, Sharon P, Garima S. Dushi Visha and Oxidative Stress - A Correlation. *Int. J Ayu Alt Med.* 2015; 3(1):1-5.
2. Kalpana RC. Concept of 'Visha' - An Ayurvedic Perspective. *Int. J Ayu Alt Med.* 2014; 2(3):14-20.
3. Shilpa SH, Mahesh PS, Bannapa SU. Role of Dooshivishari Agada on Teratogenic Effect of Cyfluthrin in Experimental Model W.S.R. Fetal Weight and Height. *Journal of Ayurveda and Holistic Medicine (JAHM).* 2014; 2(2):5-12.
4. Bechan Sharma, Shweta Singh, Nikhat JS. Biomedical Implications of Heavy Metals Induced Imbalances in Redox Systems. *Biomed Res Int* 2014; 2014:640754.
5. Murthy KRS ed., *Susruta Samhita, Kalpasthana 2/25-33.* reprint, Varanasi; Chaukhamba orientalia, 2012, 423-424.
6. Bhide Bhargav, Acharya Rabinarayan. Concept of visha and its pharmacological basis in ayurveda. *IJRAP* 2012; 3(2):137-140.
7. Sharma PV. ed., *Charaka Samhita, Chikitsasthana 23/28-30.* 8<sup>th</sup> edition, Varanasi; Chaukhamba orientalia, 2007, 367.
8. Murthy KRS. ed., *Susruta Samhita, Kalpasthana 2/53-55.* reprint, Varanasi; Chaukhamba orientalia, 2012: 427.
9. Murthy KRS. ed., *Astanga Hridaya of Vagbhata, Uttarasthana 35/38.* 6<sup>th</sup> edition, Varanasi; Chaukhamba Krishnadas academy, 2012, 334.
10. Arun Raj GR, Shailaja U, Parikshit Debnath, Subhadip Banerjee, Prasanna N Rao. Exploratory studies on the therapeutic effects of Kumarabharana Rasa in the management of chronic tonsillitis among children at a tertiary care hospital of Karnataka. *Journal of Traditional and Complementary Medicine.* 2015; 2(1):S480.
11. Rajeswara Rao BR, Rajput DK. Response of palmarosa {*Cymbopogon martinii* (Roxb.) Wats. var. *motia* Burk.} to foliar application of magnesium and micronutrients. *Industrial Crops and Products* 2011; 33(2):277-281.
12. Chunmei Li, Myeong-Hyeon Wang. *Nardostachys jatamansi* (D. Don) DC prevents LPS-induced inflammation in RAW 264.7 macrophages by preventing ROS production and down-regulating inflammatory gene expression. *Food Science and Biotechnology.* 2014; 23(3):903-909.
13. Bhutani KK, Jadhav AN, Kalia V. Effect of *Symplocos racemosa* Roxb. On gonadotropin release in immature female rats and ovarian histology. *J Ethnopharmacol.* 2004; 94(1):197-200.
14. Arun Raj GR, Shailaja U, Prasanna Rao N, Ajayan S, Nivya Thomas P. Review on the contribution of Ura-Marunnu, A traditional baby care practice in Southern India. *The Pharma Innovation* 2014; 2(11):42-70.
15. Arun Raj GR, Shailaja U, Rao Prasanna N. Preventive Medicine in Children: An Ayurvedic Approach Highlighting Native Vaccinations. *International Journal of Innovative Research and Development.* 2013; 2(6):886-893.
16. Deka DC, Vimal Kumar, Chandan Prasad, Kamal Kumar, Gogoi BJ, Lokendra Singh *et al.* *Oroxylum indicum* - A medicinal plant of North East India: An overview of its nutritional, remedial, and prophylactic properties. *J App Pharm Sci.* 2013; 3(1):104-112.
17. Harish Kumar Singhal, Neetu. A comprehensive review on Tagara (*Valeriana wallichii*). *Ayurpharm Int J Ayur Alli Sci.* 2013; 2(5):144-150.
18. Madhuri NK, Elango K, Ponnusankar S. *Saussurea lappa* (Kuth root): review of its traditional uses, phytochemistry and pharmacology. *Oriental Pharmacy and Experimental Medicine* 2012; 12(1):1-9.
19. Shailaja U, Rao Prasanna N, Arun Raj GR, Mallannavar V. Effect of Kumarabharana Rasa on Chronic Tonsillitis in children: A pilot clinical study. *Int. J Res Ayurveda Pharm.* 2013; 4(2):153-157.
20. Nagaveni HC, Sundararaj R, Vijayalakshmi G. First Report of Canker disease on Indian sandalwood (*Santalum album* Linn.) in India. *Journal on New Biological Reports.* 2014; 3(2):120-124.
21. Wil Roebroeks, Mark JS, Trine Kellberg Nielsen, Dimitri De Loecker, Josep Maria Parés, Charles Arps ES *et al.* Use of red ochre by early Neandertals. *Proc Natl Acad Sci USA* 2012; 109(6):1889-1894.