

# A critical review on cumulative effect of Dushi Visha and its management in Ayurveda

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## Abstract

Disease anticipation and safeguarding of health are primary objectives of *Ayurveda*. Poison is a substance which causes harmful consequences on human health and vitiates *dosha*, *dhatu*, and *mala*. Nowadays, humans are persistently exposed to thousands of potentially poisonous chemicals. Employees working in metallic lead production like enamel employees, glass blowers, printing works have typical chronic lead, arsenic, copper, mercury constant industrial poisoning as well as pesticides, ecological pollutants, communal poisons like tobacco, alcohol etc. In farming, continue exposure to OPP(organophosphorus pesticides), OCP(organophosphorus compounds), weed killers like parquet, chlorophenoxy acetates, chlorates used to avert contagion in plants, being sprayed by farmers on daily basis, Symptoms construct resemble *DushiVisha* like symptoms. *DushiVisha* term indicates rather which gets accumulated inside the body and causes sick health effects after some time. Prehistoric literature suggests that it may be due to inert, animate, or artificial poisons. A patient affliction from *DushiVisha* should be first done *Swedana* and follow the *Vamana* and *VirechanaKarma* according to *Dosha* preponderance. After Deha Shodhana (purification therapies), daily Agadapana (anti-toxic drugs) with *DushiVishariagada* is to be done. *DushiVisha* in *Rakta* (Blood) should be treated with *raktamokshan* by *shira*. *Sudhakalpam* use in the patient suffering from *Visha* (*DushiVisha*) should be given.

**Key words:** *Agadpan*, cumulative toxicity, *DushiVisha*, *Shodhan*

## INTRODUCTION

*Agadtantra* deals with the study of various toxins and *DushiVisha* is one of the very important concepts explained *DushiVisha* term indicates something which gets accumulated inside the body and causing ill health effects after sometime. Ancient literature suggests that it may be due to inanimate, animate, or artificial poisons<sup>[1]</sup> Nowadays, humans are constantly exposed to thousands of potentially toxic chemicals such as metals, pesticides, environmental pollutants, and social poisons such as tobacco and alcohol. Human body cannot get rid of them, which may be due to fat solubility and limited excretory capacity. This results in the accumulation of toxins, causing serious health problems. Many times, etiology is also not known in various diseases. So here, the concept of *dushivisha* can be incorporated. This paper aims to highlight the concept of *dushivisha* with respect to inanimate,

animate, and artificial poisons and their management for its practical applicability in the practice of Ayurveda.

## DEFINITION OF DUSHIVISHA/CONCEPT OF DUSHIVISH

“*Sthavar*, *Jangam*, or *Kritrimavisha* cannot be eliminated from the body completely but it is destroyed or denatured

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due to the use of anti-poisonous remedies in past fire, air, sun exposure or due to its low potency, it does not kill the human instantly. But as it is encapsulated by *kapha dosha*, it remains accumulated in the body for several years, producing various ill effects.<sup>21</sup> Different factors such as *Dushtadesha* (wet lands), *Dushta Kaal* (cloudy days), *Dushta anna* (e.g., alcohol, junk, and hybrid food), *Divaswapna* (day sleep), *Pragwat* (air from eastern region), *Ajirna* (Indigestion), *Ativyayam* (over exertion), *Ativyavay* (excessive sexual intercourse), *Krodha* (anger) aggravate this condition, producing pre-existing symptoms such as *Nidra* (Sleepiness), *Gurutva* (Heaviness), *Jrumbha* (Yawning), *Vishlesh* (sense of looseness in joints), *Romancha* (Horripilation), and *Angamarda* (Bodyache).

### Pathogenesis

*DushiVisha* situated in *amashaya* vitiates *kapha* and *vata* and situated in *pakvashaya* vitiates *pitta* and *vata*. The patient's hairs fall off, his body emaciated, and he appears like a bird clipped off from feathers and wings.

## STUDY OF DUSHIVISHA WITH RESPECT TO INANIMATE POISONS

Herbs and minerals which are naturally occurring in nature are taken in this category and their cumulative toxicity is studied.

### Cumulative Toxicity of Herbs<sup>3</sup>

Herbs may get toxic due to extrinsic factors such as pesticides and adulteration or due to intrinsic factors such as alkaloids, toxalbumins, and glycosides. Thus, these factors play an important role in the accumulation of toxins inside the body.

The cumulative toxicity of few herbs is explained below.

1. *Sarpagandha* – Parkinsonism, impotency, infertility, depression
2. *Bhallatak* – Hepatitis, urticaria, albuminurea
3. *Ishwarmoolee* – Nephrotoxicity, Carcinomatous changes
4. *Kaarpaasa* – Azoospermia, dysmenorrhea, sterility
5. *Tamakhu* – Cough, bronchitis, pulmonary emphysema, cancer, etc.

### Cumulative Toxicity of Minerals

Workers in the industries of paints, dyes, etc., where minerals (metals) are used abundantly, patients consuming Herbo-mineral combinations for long time may suffer from their chronic cumulative toxic effects. Ill effects of some minerals are explained,

1. Lead – Anemia, weakness, anorexia, foul breath, dyspepsia, discoloration of gums (Burtonian lines on gums), delirium, alopecia, paralysis (wrist drop, foot drop), sterility etc.

2. Mercury – Excessive salivation, metallic taste, skin eruptions, erethism, Mercuria lentils, discoloration of gums, GIT disturbances, etc.
3. Arsenic – Alopecia, pigmentation of skin, hoarseness of voice, loss of appetite, weakness, etc.
4. Copper – Purple lines on gums, nausea, vomiting, giddiness, diarrhea, laryngitis, bronchitis, anemia, dermatitis, etc.

## STUDY OF DUSHIVISHA WITH RESPECT TO ANIMATE POISONS

In Ayurvedic literature, the references to *dushivisha* related with *Jangam visha* are traced in the following creatures.

### Mooshaka Visha (Rat Bite)<sup>4,5</sup>

The poison of rat even though eliminated from the system may sometimes still be aggravated in cloudy days. In such case, the treatment stated for *dushivisha* can be incorporated here.

### Keeta Visha (Insect Bite)

Acharya Charak classifies *keetavisha* as *dushivishakeeta* and *Pranaharakeeta* and the symptoms of its poisoning are explained.<sup>6</sup> While describing the symptoms of *teekshnakeeta visha*, acharya Sushrut spells out *dushivisha* as one of the complications of *teekshnakeeta visha*.<sup>7</sup>

### Luta Visha (Spider Poison)

Acharya Charak classified *luta* as *Pranaharaluta* and *Dushivishaluta* and the symptoms of its poisoning are explained.<sup>8</sup>

### Shwaana Damshttra (Dog Bite)

Here, the term *dushivisha* is not mentioned but its chronic toxicological nature is explained as though during the management of dog bite, anti-poisonous remedies are used previously, one should not avoid strong *sanshodhan* in this case. Because even if there is suppression of acute lesion, there is a possibility of its aggravation after some specific time.<sup>9</sup>

### Sarpa Visha (Snake Bite)

Designating the treatment of *Sarpavisha*, acharya Vagbhat advised to expel out the remaining poison from the lesion using suitable *lepa*; otherwise, it may get vitiated, resembling *DushiVisha*.<sup>10</sup>

Animal bites are the most common source of acute poisoning. If the patient is cured from this acute condition, he may

suffer from its post-management complications in later life. This criterion is clearly mentioned in Sushrut Samhita while describing symptoms of *teeksnakeeta visha*.<sup>[11]</sup>

## STUDY OF DUSHIVISH WITH RESPECT TO ARTIFICIAL POISONS

A combination of poisonous or non-poisonous substances is known as artificial poisons. Hence, in these categories, agricultural poisons, medicinal preparations, alcoholism, and incompatible diet are included.

### Agricultural Poisons

Symptoms related to Chronic exposure to fertilizers, particularly chemical or synthetic fertilizers, mainly causes a variety of serious, long-term health and environmental issues, Cancer and Chronic Diseases, Respiratory and Skin Issues, Reproductive and Neurological Toxicity, Water and Soil Contamination, Methemoglobinemia. The effects of chronic toxicity, as with acute toxicity, are dose-related. In other words, low-level exposure to chemicals that have the potential to cause long-term effects may not cause immediate injury, but repeated exposures through careless handling or misuse can greatly increase the risk of chronic adverse effects.

### Medicinal Preparations

Long-term use of medicines in an injudicious way, chemotherapy drugs result in many complications after a particular time. This can be correlated with *dushivisha*.

Chemotherapy can produce many side effects, such as<sup>[12]</sup> anemia, low red blood cell count, low white blood cell count (this increases risk for infection), hair loss, or thinning hair, bleeding or bruising (due to low platelet count), dry skin, or rashes, fatigue, diarrhea, constipation, nausea or vomiting, muscle and nerve problems, lung problems and difficulty breathing, coughing excessively, fertility, and sexuality problems.

### Alcoholism

Symptoms of chronic alcoholism, i.e., *Madatyaya*, show gross similarity with the symptoms of *dushivisha*. *Pramoha*, *Hrudvyatha*, *Vibheda*, *Pratatam Trushna*, *Saumyaagneya Jwara*, *Aruchi*, *Shirah-Parshvashthiruk*, *Kampa*, *Marmabhedha*, *Trikgraha*, *Uravibandha*, *Timira*, *Kasa*, *Shwasa*, *Prajagara*, *Atisweda*, *Vishtambha*, *Shwayathu*, *Chittavibhrama*, *Pralapa*, *Chhardi*, *Utklesha*, *Bhrama*, *Duhsvapna*.<sup>[13]</sup>

### Incompatible Diet

The diet which vitiates *doshas* from their places but does not eliminate it out of body and becomes harmful is said to

be incompatible. 18 types of incompatibilities and diseases caused by them are mentioned in Charak Samhita. These diseases are also similar to that of *dushivisha*, as mentioned below, *Shandhya*, *Andhyata*, *Visarpa*, *Dakodara*, *Visphotak*, *Unmada*, *Bhagandara*, *Murchha*, *Mada*, *Aadhman*, *Galagraha*, *Pandu*, *Kilas*, *Kushtha*, *Grahani*, *Shotha*, *Amlapitta*, *Jwara*, *Peenasa*, *Santandosha*, *Mrutyu*.<sup>[14]</sup> The symptoms of *dushivisha* can be explored as follows,

1. *Bhinnavarna* – Here, altered color of skin, mucous membrane, nails, or hairs can be considered. For example, facial pallor in chronic lead/arsenic poisoning, blue lines on gums in chronic lead/mercury poisoning, greenish discoloration of hairs in chronic copper poisoning, nutritional deficiencies leading to alteration in complexion occur in alcoholism, Mee's lines are seen on nails in chronic arsenic poisoning, anemia, and jaundice is observed in chronic phosphorous poisoning
2. *Bhinnapurisha* – Altered nature of stools can be stated as *bhinnapurisha*, so diarrhea as well as constipation can also be included under this term. Diarrhea is seen in alcoholism, chronic phosphorus poisoning, and constipation is observed in chronic lead/tobacco poisoning
3. *Trushna* – i.e., thirst. Dehydration due to diarrhea as seen in chronic arsenic poisoning or alcoholism can lead to excessive thirst
4. *Arochak* – i.e., anorexia. It is one of the symptoms of chronic poisoning of lead, arsenic, copper, mercury, agrochemical poisons, alcoholism, etc.
5. *Vaman* – i.e., vomiting. It is observed in chronic lead, phosphorus, and tobacco poisoning
6. *Avipak* and *Aanaha* – *Avipak*, i.e., indigestion and *Aanaha*, i.e., flatulence; these GIT manifestations are observed in chronic poisoning of lead, arsenic, mercury, alcoholism, and incompatible eating habits
7. *Vigandha* – i.e., foul smell of breath. Halitosis is present in chronic mercury poisoning and fetor hepaticus is present in alcoholism
8. *Dushyodara* – i.e., ascitis. It is commonly observed in alcoholism
9. *Vishamjwara* – i.e., irregular fever. It occurs in metallic poisoning and incompatible eating habits
10. *GadgadvakVishannata* and *Unmad* – *Gadgadvak*, i.e., slurring of speech, *Vishannata*, i.e., depression and *Unmad*, i.e., insanity. These signs are observed in chronic mercury poisoning, alcoholism, post-management complications of snake bite, in rabies, incompatible eating habits, and chronic health hazards of agrochemical poisons
11. *Bhrama*, *Moha*, and *Murcha* – *Bhrama*, i.e., giddiness, *Moha*, i.e., unconsciousness, *Murcha*, i.e., syncope. These are the central nervous system manifestations observed in chronic poisoning of arsenic, lead, mercury, alcoholism, and incompatible eating habits
12. *Dhatukshaya* – It can be considered as weight loss, which is commonly seen in chronic metallic poisoning, agrochemical poisons, and alcoholism

13. *Vicheshta* – i.e., ataxia or dysarthria. It is seen in chronic mercury poisoning, agrochemical poisons, and alcoholism
14. *Kushtha, Mandala, Kotha, Kitibha, Aruh* – All these come under skin disorders which are commonly seen in chronic mercury poisoning (pink disease), chronic arsenic poisoning (raindrop pigmentation), alcoholism (erythema, spider nevi), incompatible eating habits, as a complication of snake bite, insect bite, etc.
15. *Shwasa* – i.e., Dyspnea. It is seen in chronic poisoning of arsenic, tobacco, copper (vineyard sprayer's lung disease), and alcoholism. Chemotherapy drugs can also produce this symptom
16. *Mansakshaya* – Emaciation as well as muscle atrophy are seen in chronic poisoning of arsenic (wrist drop, foot drop) and phosphorus (wasting of muscles)
17. *Shukranasha* – Amenorrhea, sterility in chronic lead poisoning and alcoholism. Impotency in chronic poisoning of arsenic and incompatible eating habits. Oligospermia in chronic poisoning by agrochemical poisons. Fertility and sexuality problems due to chemotherapy drugs can be included here
18. *Keshanasha* – i.e., alopecia is occurring in chronic arsenic poisoning as well as in chemotherapy
19. *Vishamjwara* – i.e., irregular fever is seen in chronic poisoning of metals and incompatible eating habits
20. *Panipadashotha, Mukhashotha, Akshishotha* – i.e., edema of extremities, face, and periorbital region, respectively. These are commonly seen in chronic poisoning of metals due to their nephrotoxic effect and incompatible eating habits
21. *Dushtastrarogi* – i.e., diseases related to *raktadushti* such as *Raktapitta, Kushtha, Angamarda, Visarpa, and Indralupta* are included here. These clinical manifestations are generally observed in chronic poisoning of metallic poisons and alcoholism
22. *Annamada* – i.e., intoxication is seen in alcoholism and incompatible eating habits.

Thus, the symptoms of *dushivisha* are observed in various health hazards due to metallic poisons, alcoholism, incompatible, eating habits, drug therapy, etc., reflecting its cumulative and denatured nature.

## TREATMENT

Acharya Sushrut advised to give *swedan* followed by *vaman* and *virechan*. After such *shodhankarma* (detoxification), *Dushivishari Agad* should be given orally with honey daily.<sup>[15]</sup> Which is helpful to eliminate *dushivisha* scattered in all over body. In Yogratnakar, the *agad* used is named as “*Pippalyadi agad*.”<sup>[16]</sup>

## According to Acharya Charaka

Acharya Charaka has stated a different line of treatment for *DushiVisha*. Charaka in *Chikitsa sthan* chapter 23 *sloka* 63 states that *DushiVisha* in *Rakta* (Blood) should be treated with *raktamokshanby shira*. Also in chapter 13 of *Sutra sthan Sloka* 54–56, Acharya has given details of person not fit for *Snehan* (Oilation Therapy) that those persons suffering from *visha* are not fit for *snehan*.

In chapter 14 of *Sutra sthan Sloka* 17, Acharya has given details of person not fit for *Swaden* (Steam Therapy) that those people suffering from *visha* are not fit for *Swedan*.

## DISCUSSION

The definition of *Dushivisha* indicates that it is a part of inanimate, animate, or artificial poisons which is accumulating inside the body and having chronic cumulative nature. It is a kind of low-potency poison causing delayed action on the body.<sup>[17]</sup>

Inanimate poisons include herbs and minerals. While studying the literature, it is noted that herbs such as Tobacco, *Bhallataka, Karpas, Ishwarmoolee*, and *Sarpagandha*<sup>[18]</sup> as well as minerals such as Lead, Mercury, Arsenic, and Copper<sup>[19]</sup> show its cumulative toxicity effects after specific time. Such toxicity effects are considered under *dushivisha* with respect to inanimate poisons.

Acharya Charak classified *Luta* and *Keeta* visha as *dushivisha* and *pranahara* which clearly indicates its slow toxicity nature.<sup>[20,21]</sup> *Dushivisha* is mentioned as a complication of *teekshnakeetavisha*. In a dog bite, it is advised to give the patient strong *sanshodhan chikitsa* to avoid its further aggravation. It means that there are certain toxins that need to be washed off from body with appropriate detoxification measures. In snake bite treatment, acharya Vagbhat advised to expel out remaining poison from lesion by suitable *lepa*; otherwise, it may get vitiated like *dushivisha*. From all these references, it can be concluded that *dushivisha* resulting due to animate toxicity is a kind of residual poison showing health hazards in future. In general, practice also, patients having health problems such as sterility, skin diseases, pyrexia of unknown origin, etc., generally have significant past history of animal bites. Diseases such as malaria, tuberculosis, allergic bronchitis, tick born fever, rat bite fever, and leptospirosis are related with animate poisoning. Microbial or chemical agents through these creatures may stagnant inside the body for several years. Hence, these conditions can be included under *dushivisha*. Literature review of health hazard due to persistent exposure of artificial poisons such as agrichemical poisons, alcohol, drugs of chemotherapy, and incompatible food habits shows gross similarity with the

symptoms of *dushivisha*. In chapter 3 of *Kalpa sthan Sloka* 4, *Aacharya* has given indication of *Ikshavakukalpam* use in the patient suffering from *Visha (DushiVisha)* should be given yoga from this as per the site of settlement made by the *visha*. Furthermore, in chapter 10 of *Kalpa sthan Sloka* 5, *Aacharya* has given indication of *Sudha kalpam* use in the patient suffering from *Visha (DushiVisha)* should be given yoga from this as per the site of settlement made by the *visha*.

## CONCLUSION

1. *Sthavar, Jangam, and Krutrimvisha* are different modes of *dushivisha*
2. Preventive measures should be taken to avoid *dushivishaktata*. For that people who are more prone to develop such toxicity such as industrial workers should be encouraged for periodic detoxification methods
3. *Panchakarma* therapy and counseling regarding *pathyapthya* should be adopted after recovery from an acute attack of poisoning
4. Physician must prescribe the drugs in proper doses and in a judicious way
5. Common people must be educated regarding incompatible habits, diet, and alcoholism.

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