



## DUSHI VISHA W.R.T. MODERN SLOW-ACTING POISON AND THEIR SKIN MANIFESTATION

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## ABSTRACT

According to *Ayurveda*, prevention of disease and maintenance of health are more important than the treatment of disease. As given in *Ayurvedic Samhitas*, a poison is a substance that vitiates the normal functioning of *dosha*, *dhatu*, *mala*. Thousands of harmful toxins are present in our atmosphere (Air, water and earth) that are ingested by human beings on daily basis. As described in our *Ayurvedic Samhitas*, *Dushi Visha* is an intake of toxic drugs which is less potent (Denatured) and remains in a dormant state within the body for years together without causing any major harm to the body. As we see in today's era workers working in the lead industry like enamel workers, glass blowers, printing works have typical chronic lead poisoning symptoms such as constipation, tremors, menstrual disarrangements etc. Due to chronic exposure to lead which accumulates in the body and produces its ill effect like *Dushi Visha*. Arsenic, copper, mercury chronic occupational poisoning also happened due to long exposure of poison working in the respective industry. In agriculture, chronic exposure to OPP, OCP, weed killers like parquat, chlorophenoxy acetates, chlorates used to prevent infection in plants, being sprayed by farmers on daily basis, leads to symptoms like dysphasia, oropharyngeal ulcers, coughing, pain in the abdomen, etc. These symptoms resemble *Dushi Visha* like symptoms. From this article, we may correlate the symptoms of *Dushi Visha* with the dermatological manifestation of chronic occupational poisoning and agricultural field exposure to weed killers, which may be

helpful to understand the concept of *Dushi Visha*. We need to realize the health hazardous effects of cumulative poison and its proper time to time prevention as well as its proper treatment.

**Keywords:** *Dushi Visha*, Skin manifestation, Slow acting poison

## INTRODUCTION

The term *Dushi Visha* is a combination of two different types of words, *Dushi* and *Visha*. *Dushi* means denatured, attenuated, latent and vitiated and *visha* means poison. *Dushi visha* produces pustules, kitibha and urticarial rashes due to disorders of the blood. Thus, the poison takes away life soon by affecting each *dosha*. *Visha* means poison. Attenuated and denatured poisons function as a latent toxin in the body. In *Ayurveda*, while describing *Visha*, *visha* is classified in various categories such as *Sthavar-jangham*, *Gara-Dushi Visha*, etc. All *Acharya* describe *dushi visha* as a slow-acting poison that accumulates in our body, due to its low potency (because it does not have all ten characteristics of poison) it does not produce acute ill effects but produces chronic illness due to long term exposure to the poison. While simplifying this concept of *Dushi Visha* in the present era, we can compare the same effect of occupational chronic exposure to human beings with poisons such as lead, arsenic, mercury, copper etc. Workers in such industries come in direct contact with poisons and that too for decades of duration which ultimately leads to chronic accumulation of the poison in their body and that lead to chronic illness. Farmers working on the field also have similar kinds of chronic exposure to poisons such as OCP, OPP, paraquat, chlorophenoxy acetate, chlorates which are used as weed killers to prevent infection to the crops. This kind of exposure for a longer duration also leads to ill health effects with many dermatological manifestations. In the present era, we can correlate these health hazards in the concept of *Dushi visha*.

*Dushi Visha* is not fatal, but it shows many ill effects with dermatological symptoms, different types of *dushi visha* causes different types of skin manifestation.

### AIM AND OBJECTIVES:

Study of *dushi Visha* concerning slow-acting poison and their skin manifestation.

1. To collect and analyze the literature review of *Dushi Visha*.
2. Skin manifestation of pollution.
3. Skin manifestation of toxic drugs.
4. Skin manifestation of COVID-19.
5. Skin manifestation in contact allergy.
6. Skin manifestation of insect and animal bite.
7. Skin manifestation of corrosive substance.
8. Skin manifestation of agricultural hazards etc.

### 1. Concept of *Dushi Visha*:

According to *Aacharya Sushruta*, a poison that is vitiated by habitat, season, food and *Divaswapna* (afternoon sleep) and which vitiate the *Dosha*, *Dhatus* are called *Dushi visha*. A part of *Sthavar* (plant poisons), *Jangham* (animal poison) or *KritrimVisha* (artificial poison) which does not get eliminated from the body, but due to digestion or due to antidotes presence their potency gets decreased by the effect of *Aatap* (sunlight), *Vayu* (air), *vyavayi* and *vikasi* by nature, this cumulative poison stays in the body. This low potency poison is known as *Dushi visha*. According to *Ash-tanga Sangrah Samhita*, poisonous substances are very old, contaminated with other anti-poisonous drugs, partially destroyed by forest fire, breeze, sunlight, not endowed fully with all qualities (10) of poison by nature itself- all these derive the name *dushi visha*. Because of its *alpa veerya* (low potency), it does not produce acute symptoms (though present inside the body). It gets *Avarana* (covering) with *kapha* and remains in the body for many years. Due to *Avarana* of *Kapha* and *alpa Veerya*, this *Dushi visha* stays in the body in *Avyakta Avastha* (invisible state) for a longer time.

### Lakshana of *Dushivisha*:

**Purvaroopas of *Dushivisha***- *Nidra* (sleep), *jrymbha*, *gurutva*, *harsha*, *sandhi vishleshana*, *angamarda* (body ache) these are the *Purvaroopas* of *Dushivisha* which can be correlated with anxiety, drowsiness,

body ache, weakness, joints weakness etc. premonitory symptoms of *dushi visha*.

**Roopa of Dushi visha-** According to *Aacharya Charaka*, *dushivisha* principally vitiate *Rakta* (blood) which lead to *Kitibh Koth Utpatti* (skin disorder) in the body, like this *DushiVisha* vitiate one by one *Dosha* and ultimately lead to *Pran-nasha* (death).

**According to Aacharya Sushruta-**

*Lakshana* (signs) of *Dushivisha-*

<i>Atisaar</i>	- Diarrhoea
<i>Tvaka Vaivarnya</i>	- Depigmentation of skin
<i>Mukha Daurgandhya</i>	- Foul smell from mouth
<i>Virasta</i>	- Nausea
<i>Trishna</i>	- Thirst
<i>Murchha</i>	- Syncope
<i>Vaman</i>	- Vomiting
<i>SwarVaikrutya</i>	- Hoarseness of voice
<i>Dushyodar</i>	- Ascites

**Other Lakshana includes:**

<i>Annamada</i>	- Nausea
<i>Avipaka, Arochaka</i>	- Anorexia
<i>Mandala</i>	- Skin blisters
<i>Moha, Dhatukshaya</i>	- Weakness
<i>Kotha</i>	- Leprosy
<i>Hasta paad shotha</i>	- Oedema on extremities
<i>Dakodara</i>	- Ascites
<i>Chhardi</i>	- Emesis
<i>Vishamjvara</i>	- Fever
<i>Unmada</i>	- Insanity
<i>Anaha</i>	- Distention
<i>Shukra kshaya</i>	- Oligospermia
<i>SwaraVikriti</i>	- Change in voice

**According to Dhatu that contaminated by Dushivisha Lakshana varies:**

<i>Rasa Dhatu</i>	- <i>Aruchi, Ajirna</i>
<i>RaktaDhatu</i>	- <i>Kushtha, Visarpa</i> (Herpes)
<i>Mans Dhatu</i>	- <i>Mansarbud</i> (Tumour)
<i>Med Dhatu</i>	- <i>Med Granthi</i> (Lipoma)
<i>AsthiDhatu</i>	- <i>AsthiDantadiVikara</i> (Osteological changes)
<i>MajjaDhatu</i>	- <i>TamoDarshana</i> (Blurred vision, blackouts)
<i>ShukraDhatu</i>	- <i>Klaibya</i> (Infertility)

## 2.Skin manifestation of pollution:

### • Arsenic poisoning-

Arsenic exerts its toxicity by inactivating up to 200 enzymes, especially those involved in the cellular energy pathway and DNA synthesis and repair. Acute arsenic poisoning is associated initially with nausea, vomiting, abdominal pain and severe diarrhoea. In the body, if 0.1% arsenic is present in plasma, after 24 hours, 55% excrete through urination and the rest 45% store in different tissue and organ.

Arsenic mainly affects on –

- (a) Nerve
- (b) Neuro-circulatory tissue
- (c) Endocrine tissue

Skin manifestation of arsenic-

- (a) Pigmentary changes
- (b) Hyperkeratosis
- (c) Skin carcinoma- Bowel's disease, squamous cell carcinoma

Other changes-

- (a) Erythromatus changes
- (b) Exfoliative changes
- (c) Urticarial changes
- (d) Scarletiform changes
- (e) Patriarchy changes

Arsenic accumulates in hair, skin, nail, oesophagus, stomach, and intestine.



Arsenic 5+ replace the phosphate of apatite in the bone and accumulate in it. The differentiation and proliferation are dependent on the growth factor and transcription factor. Arsenic changes its growth factor and transcription factor. Arsenic increases the secretion of cytokinin (interleukins) IL8. Autocrine effects of IL8 are more (Due to arsenic genotoxic) and that cause pigmentary changes and hyperkeratosis (If keratin loses then it is exfoliative changes).

G.M.C.S.F. (Granulocytes, monocytes, colony-stimulating factors), T.G.F.-Beta (Transforming growth factors), T.N.F. Alfa (Tissue necrosis factor) and I.L.1 are growth factors that increase due to arsenic poisoning.

Clinical symptoms of skin-

- (a) Pigmentary changes – Melanosis

(b) Hyperkeratosis – Pityriasis, ventriculus

(c) Skin cancer

Pigmentary changes:

- Lichen planus
- Localized patchy pigmentation
- Raindrop pigmentation
- Leucomelanosis- White on dark pigmentation
- Blotchy pigmentation

**Mercury Industry** –If mercury is inhaled or swallowed as vapour, or if applied to the skin or mucus membrane in a finely divided state it is absorbed. Industries such as glass blowing mirror manufacturing firms, Chronic exposure to elemental mercury yields classic symptoms like- Gingivitis and salivation- blue line of gums Tremors- hatters shakes and Neuropsychiatric changes, Mercurialentis -It is peculiar eye change due to exposure to vapour of mercury, Acrodynia– anorexia, insomnia, sweating, skin rash, photophobia.

All above are occupational hazards effects of industrial poisoning

### 3. Skin manifestation of toxic drugs:

- **MARIJUANA**-It is the most common abused drug, especially among teenagers and students. Marijuana has been known to cause vessels constriction. In severe cases, the user may experience a cold feeling in the hands, which can further lead to the development of an ulcer or ischemia.
- **HEROIN**- Most common method is used is intravenous injection, often chronic drug users resort to injecting drugs into the blood using a hot needle, which leads to the accumulation of carbon and soot into the dermis causing serious skin problems. Another common skin issue among IV drugs users is skin discolouration.
- **COCAINE**: Cocaine is one of the most used illicit drugs. Skin issues associated with injection marks are common in cocaine abusers. Cocaine also causes skin discolouration from internal bleeding, also known as ecchymosis. Symptoms such as chronic skin tightening, hemorrhagic skin lesion, inflammation of blood vessels and itchy hives break out in several parts of the body are also common with cocaine users.

**4. Skin manifestation of COVID-19:** COVID-19 can feature signs of small blood vessel occlusion. These can be petechiae or tiny bruises and transient livedoid eruptions.

**5. Skin manifestation in contact allergy:** *Bhalla-latak* seed also cause blister formation when it comes in contact with skin.

Poison Ivy, poison oak and poison sumac are plants that contain an irritating, oily sap called urushiol. Urushiol triggers an allergic reaction when it meets skin, resulting in an itchy rash, which can appear within hours of exposure up to several days later.

### 6. Skin manifestation of insect and animal bite:

- ❖ **Insect bite**- Insect bite is a general term for dermatitis that is caused by the bite or sting of a mosquito, horsefly, bee or insect bite.
- ❖ **Caterpillar dermatitis**- Urticating's hairs of larval moth and butterfly cause caterpillar dermatitis.
- ❖ **Dermatitis linearis**- Causes by beetle *paederast fuscipes Curtis*.
- ❖ **Scabies** - Caused by *Sarcoptes scabiei* var. hominis.
- ❖ **Tick bite** – It is caused by ixodid ticks. The main symptoms are inflammation around the bite, erythema, edematous swelling, bleeding and blistering. Insects typically inject formic acid. This led to blisters, inflammation, redness, swelling, pain, itching and irritation.

**7. Skin manifestation of corrosive substance:** Poison that destroys body tissue by direct chemical action is called a corrosive substance.

- Inorganic acid-  $H_2SO_4$ ,  $HNO_3$ ,  $HCl$
- Organic acids – Oxalic acids, Carbolic acids
- Alkalis -  $NaOH$ ,  $NH_3CO_3$

It causes a painful and burning sensation in the mouth and throat. Difficulty in swallowing and oedema, ulceration and whitish plaques in mouth and oesophagus, laryngospasm and oesophageal stenosis.

**8. Skin manifestation of agricultural hazards** - In agriculture, the chronic exposure to OPP, OCP, weed killers like parquat, 4-chlorophenoxyacetates, chlorates used to prevent infection in plants, being sprayed by farmers on daily basis, leads to

symptoms like dysphasia, oropharyngeal ulcers, coughing, pain in the abdomen, etc. Pyrethrin and pyrethroids are used as insect repellents, insecticides, pesticides. And Available as sprays, dust, powders, mats, coils. The most used are pyrethrum, permethrin, allethrin.

9. Chronic exposure may lead to the following symptoms are Convulsion, Rhinorrhea, sore throat, wheezing, and skin contact blisters, dermatitis, paresthesia.

## DISCUSSION

Toxicity is nothing but a substance that can harm or alter the well-being of an individual. Chronic toxicity refers to the ability of a toxic substance to cause harmful effects over an extended period usually upon continuous exposure. Chronic exposure to these occupational or agricultural poisons, enter the body in the form of air, water, soil, vapour. And usually, it does not get eliminated from the body (*Dushi visha*). This repeated accumulation of ingredients leads to cumulative toxicity. In *Ayurveda*, *Aacharya Charaka*, *Aacharya Sushruta*, and *Aacharya Vagbhata* are opined that *Dushivisha* is of any type *Sthavar* (plant poisons) *Jangham* (animal poison) or *KritrimVisha* (artificial poison) which does not get eliminated from the body, but due to digestion or due to antidotes presence their potency gets decreased. By the effect of *Aatap* (sunlight), *Vayu* (air), *Jala* (water) like external factors this cumulative poison stays in the body. This low potency poison is known as *Dushivisha*. Dermatological manifestation of *sushi visha* is the main symptom.

## CONCLUSION

From the above study, the *Lakshana* of *DushiVisha* described in *Vrihatrayi Samhita*, are near about like that of cumulative poisons find in today's occupational and agricultural industry and due to lifestyle changes. The concept of *DushiVisha* which was described in ancient times that resembles today's lifestyle also, and this shows how deeply our *Aacharyas* studied poisons and their property, so as in today's era also we can co-relate *DushiVisha* with low acting poisons. Due to incomplete *visha* characters (>10), *dushi visha* shows many

dermatological symptoms in the body. In an industrial area, skin problems are common due to *dushi visha*.

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