

## CONCEPTUAL STUDY OF CUMULATIVES POISONS WITH SPECIAL REFERENCE TO DUSHI VISHA.

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### ABSTRACT

The substances which are not excreted from the body & tend to pile-up in different organs of the body for a long period is called as Cumulative Poison. They are not causing any toxic effect when entering in low doses. However, when such poisons enter the body over a long period, even in low doses, may ultimately cause harm when their concentration in different tissues reaches high level due to their cumulative effect. Bioaccumulation refers to the accumulation of substances, such as pesticides, or other organic chemicals in an organism. Bioaccumulation occurs when an organism absorbs a toxic substance at a rate greater than that at which the substance is lost. Thus, the longer the biological half-life of the substance the greater the

risk of chronic poisoning, even if environmental levels of the toxin are not very high. Many bioaccumulative chemicals are fat-soluble so that they tend to reside primarily in fat deposits or in the fatty substances in blood. This explains why fat-soluble bioaccumulative chemicals are often found at elevated levels in fat-rich breast milk. But bioaccumulative substances may also be deposited elsewhere, including bone, muscle, or the brain. *Dushi Visha* is one of the unique concept explained in Ayurveda. It is a type of toxin which remains inside the body for long & then produces various ill effects on the body. The ancient concept of *dushi visha* seems to be more relevant in this context. our *acharyas* has defined *dushivisha* as intake of toxic drug which are less potent remains in dormant state within the body for year together without causing any harm to the body.

**KEYWORDS:** cumulative Poison, *Dushivisha*.

## INTRODUCTION

Cumulative toxicity is the accumulation of the toxins over a period of time & in turn resulting in the harsh effects on the body & mind. This cumulative toxicity is similar to the *Dushivisha* concept defined by *Acharya Sushruta*. *Dushivisha* is a burning issue in the present scenario. This is fact that in today's fast life every person is exposed to the pollutants in one or the other way. The exposure may be due to polluted atmosphere, certain professions & long term use of certain medicines & therapies also. After exposure to the body some of the component of this substance does not get completely eradicated from the body. In *Ayurvedic* classical texts we found some associated reference by the name *Dushivisha*. According *Sushruta*- A part of *sthavara, jaangama, or krittirima visha*, which has not gone out from the body completely without leaving any residues, that poison which is very old, inactivated by antipoisonous things that which by nature is poor in its qualities, attain the name *Dushivisha* (impotent/weak poison); because poor potency it does not kill the person quickly and remains in the body for many years covered by *Kapha*.

## AIMS AND OBJECTIVES

1. Discuss, evaluate & elaboration of Bioaccumulation & Cumulative Poison with special references to *Dushee Visha*.
2. To study the concept of *Dushivisha* according to *Ayurveda*.
3. To correlate the *Dushivisha* w.s.r. cumulative Toxicity.

## MATERIALS AND METHODS

Literature search- Review of literature regarding *Dushivisha* is collected from *Ayurvedic* compendium. Review of literature regarding cumulative toxicity is collected from modern science & on different website. Research articles are also searched from various websites. All Compiled matter is reorganized and critically analysed for the discussion and attempt has been made to draw some fruitful conclusions.

## LITERATURE REVIEW

**Definition of *dushi visha* / concept of *dushi vish*:** "*Sthavar, Jangam* or *Krittirima visha* which cannot be eliminated from the body completely but it is destroyed or denatured due to 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 doshsa* it remains accumulated in the body for several years producing various ill effects.”

Different factors like, *Dushta desha* (wet lands), *Dushta Kaal* (cloudy days), *Dushta anna* (e.g. alcohol), *Diwaswapna* (day sleep) , *Pragwat* (air fm eastern region), *Ajirna* (Indigestion), *Ativyayam* (over exertion), *Ativyavay* (excessive sexual intercourse), *Krodha* (anger) aggravates this condition, producing Pre existing Symptoms such as, *Nidra* (Sleepiness), *Gurutva* (Heaviness), *Jrumbha* (Yawning), *Vishlesh* (Sense of looseness in joints), *Romancha* (Horripilation), *Angamarda* (Bodyache).

The word Dusi is derived from the root word “*Dusa*” & with suffix “*Nic*” & “*In*”. The word *Dushi* means impure or possessing the property to vitiate.

**Definition of *Dushivisa*:** The poison which vitiates *Dhaatus* because of factors such as *Desha*(habitat), *Kaala*(season), food & sleeping during day time is called *Dushivisa*.<sup>4</sup> A poison either *Sthavara*, *Jangma* or *Kritrima* whenever not fully eradicated from the body & weakened by anti Poisonous medications or gets dried up by *Davagni*, *Vata*, *Tapa*(the fire, the wind & the sun) or when foresaid natural ten qualities of poison becomes less potent is called as *Dushivisa*<sup>5</sup> Because of its mild strength does not prove fatal for an individual & as it get enveloped by the *Kapha* it be present in in the body for many years.

***Avyakta Awasthaa of Dushivisa*:** The *Veerya* of *Dushivisa* being less, it does not show any immediate fatality. On the other hand, it becomes *Aavritta* by *Kapha* & stays in that state for years. Its symptoms do not arise immediately.

**Table No.1: General Clinical Features of Dushee Visha as per Various Acharya.**

| Sr. | Feature                                   | S.S. | Ch. | A.S. | A. H. | Y.R. | B.R. | V.S. |
|-----|---|------|-----|------|-------|------|------|------|
| 1   | Inebriant after Food (Annamada)           | ✓    | -   | -    | -     | ✓    | ✓    | ✓    |
| 2   | Indigestion (Vipaka)                      | ✓    | -   | -    | -     | ✓    | ✓    | ✓    |
| 3   | Loss of Taste (Arochak)                   | ✓    | -   | -    | -     | ✓    | ✓    | ✓    |
| 4   | Patches & Rashes on Skin (Mandal-Kotha)   | ✓    | ✓   | ✓    | ✓     | ✓    | ✓    | ✓    |
| 5   | Delusion (Moha)                           | ✓    | -   | -    | -     |      |      |      |
| 6   | Wasting of Tissue (Dhatukshaya)           | ✓    | -   | -    | -     | ✓    | ✓    | ✓    |
| 7   | Edema of Feet & Hand (Pada-Karasya Shoph) | ✓    | -   | -    | -     | ✓    | ✓    | ✓    |
| 8   | Ascites (Dusyodar)                        | ✓    | -   | ✓    | ✓     |      |      |      |
| 9   | Vomiting (Chhardi)                        | ✓    | -   | ✓    | ✓     | ✓    | ✓    | ✓    |
| 10  | Lose Motion (Atisar)                      | ✓    | -   | ✓    | ✓     | ✓    | ✓    | ✓    |
| 11  | Discoloration of Body (Vaivarya)          | ✓    | -   | ✓    | ✓     |      |      |      |
| 12  | Unconsciousness (Murchha)                 | ✓    | -   | ✓    | ✓     | ✓    | ✓    | ✓    |

|    |                                     |   |   |   |   |   |   |   |
|----|-------------------------------------|---|---|---|---|---|---|---|
| 13 | Fever (Visham Jwar)                 | ✓ | - | - | - | ✓ | ✓ | ✓ |
| 14 | Profound Thirst (Trushna)           | ✓ | - | ✓ |   | ✓ | ✓ | ✓ |
| 15 | Insanity (Unmad)                    | ✓ | - | - | - | - | ✓ | - |
| 16 | Flatulence (Anaha)                  | ✓ | - | - | - | - | ✓ | - |
| 17 | Aspermatogenesis (Shukra Kshaya)    | ✓ | - | - | - | - | ✓ | - |
| 18 | Stammering Speech (Swar Vikriti)    | ✓ | - | ✓ | ✓ | ✓ | ✓ | - |
| 19 | Bad Smell of Mouth (Vaigandha Mukh) | ✓ | - | - | - | ✓ | - | ✓ |
| 20 | Bad Taste of Mouth (Vairasya Mukh)  | ✓ | - | - | - | ✓ | - | ✓ |
| 21 | Giddiness (Bhram)                   | ✓ | - | - | - | ✓ | - | ✓ |
| 22 | Abnormal Activity (Vicheshta)       | ✓ | - | - | - | ✓ | - | ✓ |
| 23 | Dyspnea (Shwas )                    | ✓ | - | ✓ | ✓ | ✓ | ✓ | ✓ |

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Modern science classified these poisons on the basis of effect produced by them in to four types. Fulminant, acute, chronic & sub-acute. Out of which fulminant means poisoning produced by massive dose of poison by which death occurs rapidly, acute means poisoning produced by a single large dose or several small doses taken in a short period, onset of signs & symptoms is usually abrupt. Chronic poisoning produced by small doses taken over a long period. Onset is insidious. Subacute is characterised by mixture of features of acute & chronic poisoning.

Chemicals that are persistent in the environment, bioaccumulate in people and/or wildlife, and are toxic are called Persistent, Bioaccumulative and Toxic Chemicals (PBTs). Because of these features, as long as they remain in commerce and may therefore be released into the environment, they will threaten the health of humans and wildlife. The nature of the risk will depend on their specific toxic properties, the size of the exposed population or ecosystem, and the extent and duration of exposure. But, because of their persistence and ability to bioaccumulate, once exposure levels are sufficient to cause adverse effects in humans, domestic animals, or wildlife, their impacts are not easily reversed. Then, even if their production and use are discontinued, many years may pass before their concentrations have sufficiently declined so that they no longer pose risks. Because of this combination of properties, the government should take immediate action to phase PBTs out of commerce.

## CONCLUSION

From above discussion we can conclude that as per Ayurveda *Dushivisha* can be correlate with cumulative toxicity. *Dushivisha* is not acute condition its effect seen gradually on the body if it is accumulated in the body frequently. It definitely produce the toxic effect in the

body. *Dushivisha* shows various types of toxic symptoms & disorders on different systems of the body which mainly includes skin, G.I tract, nervous system & many more. Pesticides, pollutants can be embraced under the cumulative type of toxicity. Long term exposure of pesticides, pollutants gives rise to hazardous toxic effect & multiple system disorders. So we can correlate the accumulative poisons with the *Dushivisha*.

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