



A REVIEW ON DOOSHI VISHA AS ENDOCRINE DISRUPTORS IN MANIFESTATION OF METABOLIC DISORDERS W.S.R TO DHATUPRADOSHAJA VIKARAS.

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ABSTRACT

Dooshi visha is a frail toxic substance that pollutes every *Dhatu* over a period of time due to the accumulation of miniscule doses of poison in the system. *Dooshi visha* targets the specific organ and causes damage. Whichever system or *dhatu* gets more affected shows related defects or symptoms.

Endocrine disruptors are group of exogenous chemicals which can interfere with hormone action in the body and have been implicated in disrupting endocrine functions which negatively affects human health and development. Endocrine disrupting chemicals are ubiquitously detected in consumer products, foods, beverages, personal care products and household products. Consumption and external application of these products over a long period may cause health problems like impotency, testicular cancers, breast cancers, obesity, GIT disorders, premature greying of hair, alopecia, hypothyroidism, reproductive disorders and many have been linked to some of the endocrine disrupting chemicals.

The purpose of this study to establish correlation between *dooshi visha* and endocrine disruptors in manifesting the metabolic and endocrine disorders with special reference to *Dhatupradoshaja vikaras*.

Keywords: *dooshi visha*, endocrine disruptors, *dhatupradoshaja vikaras*

Introduction

The word *Visha* is derived from the root word *Vish*, which means to encompass or to get fully pervaded. The substance that causes grief to the world is called *Visha*. It can also be defined as substance which causes vitiation of *Rasadi dhatus*, in turn hampering the health or life of a person. *Visha* has been classified into different categories, one amongst them is *Dooshi visha*.¹ The term *Dooshi Visha* is a combination of '*Dooshi*' means denatured, attenuated, latent, vitiated substance. *Visha* means poison. Any poison that is retained in the body for very long period of time which is frail and incapable of producing acute symptoms of poisoning due to the devoid of ten natural properties of *visha* is called *Dooshi visha*.² On other hand Endocrine disruptors are chemicals, both natural and man-made, may mimic or interfere with the body's hormones, known as the endocrine system. These chemicals are linked with developmental, reproductive, brain, immune, and other problems. Some endocrine-disrupting chemicals are slow to break-down in the environment. That characteristic makes them potentially hazardous over time.³

AIMS AND OBJECTIVES

1. To study the concept of *Dooshi Visha* and Endocrine Disruptors.
2. To establish the correlation between *Dooshi Visha* and Endocrine Disruptors in manifesting various metabolic diseases w.s.r to *Dhatupradoshaja Vikaras*.

MATERIALS AND METHODS

1. Various Ayurvedic Samhitas were critically studied
2. Different books and articles regarding *Dooshi Visha* and Endocrine Disruptors were studied.

RESULT AND DISCUSSION

Dooshi Visha

Dooshi visha is derived from word *Doosh* which means impure, the substance that causes impurity in the body by its toxic properties is called *dooshi visha*. *Dooshi visha* is a sluggish toxic substance that accumulates in the body in miniscule doses, which gets excited during its favourable time, place, and excessive day sleep, vitiates every *dhatu* and produces respective *vikaras*.⁴

Source of *Dooshi Visha* and Its Properties

Acharya *Sushruta* described *Dooshi Visha* is a kind of poison originating from inanimate, animate sources or any synthetic poison (*Kritrima Visha*) retained in the body for long period of time, which is partially neutralized by antidotes, dried by the breeze, forest fire, sunlight, or by nature itself is not endowed with all the ten properties of *Visha*, can be termed as *Dooshi Visha*. Any poison that is incapable of producing acute symptoms of poisoning due to its low potency can also be designated as *Dooshi Visha*⁵

Lakshana of *Dooshi Visha*.

Person affected by *dooshi visha* will have the following symptoms

When *Dooshi visha* is localized in the *amashaya* the patient suffers with diseases of *kaphavata*, when in *pakwashaya* he suffers from diseases of *vatapitta*. This is accompanied by loss of hair, loss of strength and various *Dhatu pradoshaja vikara* of their respective *Dhatu*s.⁶

Dooshi visha vitiates the blood and causes pustules, urticarial rashes and further affects the *dhatu*s.⁷

It hampers metabolism, causes mental confusion, depletion of *dhatu*, oedema in face and extremities, Ascites, Depletion of *Shukra dhatu*, *Kushta*, *Atisara*, *Vishamajwara*⁸,

Endocrine Disruptors³

Endocrine disruptors are group of exogenous chemicals which can interfere with hormone action in the body and have been implicated in disrupting endocrine functions which negatively affects human health and development.

Sources of Endocrine Disruptors³

Endocrine disrupting chemicals are ubiquitously detected in consumer products, foods, beverages, personal care products and household products.

Among multiple EDCs present in food, it is notable to mention monosodium glutamate (used as a flavor enhancer), genistein (found in soy-based foods), and high-fructose corn syrup (used as a sweetener).

Industrialized areas are typically characterized by contamination from a wide range of industrial chemicals that may leach into soil and groundwater. These complex mixtures enter the food chain and accumulate in animals higher up the food chain such as humans. Exposure occurs through drinking contaminated water, breathing contaminated air, ingesting food, or contacting contaminated soil. People who work with pesticides, fungicides, and industrial chemicals are at particularly high risk for exposure and thus for developing a reproductive endocrine abnormality.³

Other Examples of Endocrine Disruptors

1. Phthalates
2. Dioxins
3. Polychlorinated binphenyl
4. Paraben
5. Triclosan
6. Bisphenol A

Impact of Endocrine Disruptors on Body³

- The first evidence of endocrine disruption was provided almost 40 yr ago in an adult female through observations of uncommon vaginal adenocarcinoma in daughters born 15–22 yr earlier to women treated with the potent synthetic estrogen DES during pregnancy.
- Many chemicals, both man made and natural may mimic or interfere with body's hormones known as Endocrine Disruptors. These chemicals are linked with developmental, reproductive, brain and other problems.
- These EDCs act as Xenohormones which exhibit endocrine hormone like properties. Ex xenoandrogens xenoestrogens, xenoprogesterones which can block the functions of hormones and endocrine system of the body.
- Certain studies have suggested that these xenohormones were found in breast tissues of human with breast cancer. So EDCs can also play a role of carcinogens.
- There may be transgenerational effects of EDCs due to overt mutation or to more subtle modifications of gene expression independent of mutation

CONSEQUENCES OF EXPOSURE TO EDCs

DISORDERS	RESPONSIBLE EDCs
Obesity	Monosodium glutamate, Phthalates, Bisphenol A (acts as obesenogens)
Diabetes	Bisphenol A (leads to insulin resistance)
Reproductive disorders	Diethylstilbestrol, BisphenolA, Phthalates
Testicular cancer	Dioxins, Organochlorins (acts as carcinogens)
Skin disorders	Dioxins, paraben, triclosan, phthalates

How *Dooshi visha* and EDCs are similar?

- As *dooshi visha* doesn't suddenly act on body as soon as it is consumed so are EDCs .
- Both *Dooshi visha* and EDCs get accumulated and manifest disease after long period.
- Both are consumed in miniscule doses.
- *Dooshi visha* targets *dhatu*s. Due to its cumulative property wherever it gets lodged or in whichever *dhatu* it gets resided respective defects or symptoms are produced.⁶
Eg.

<u>Dhatus</u>	<u>Vikara</u>
<i>Rasa dhatu</i>	<i>Krushangata, klaibhya, palithya</i>
<i>Rakta dhatu</i>	<i>Raktapitta, Pleeha, Kushta</i>
<i>Mamsa dhatu</i>	<i>Arbuda, Alaji, Gandamala, Galaganda</i>
<i>Meda dhatu</i>	<i>Prameha, shtoulya</i>
<i>Asthi dhatu</i>	<i>Kesha vikara</i>
<i>Shukra dhatu</i>	<i>Klaibhya, Vandhyatva, Garbhapaath, Garbhavikaras</i>

Similarly, EDCs also target particular system and manifest diseases of the same.

CONCLUSION

EDCs and *Dooshi visha* are heterogeneous group of exogenous substances which interfere in homeostatic system and cause adverse effects on human as mentioned above after certain period of time. Promoting public knowledge and initiating preventive measures will help in minimizing the exposures.

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