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A review on impact of endocrine disrupting chemicals (EDCS).

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Abstract

The function of hormones can be related to the function of doshas, and an ayurvedic theory can be explained. Endocrine disruptors are found in many everyday products, including some plastic bottles and containers, liners of metal food cans, detergents, flame retardants, food, toys, cosmetics, and pesticides nowadays several chemicals are gaining more importance in relation with the public health due to their widespread effects on human health and potential cause of morbidity under the heading Endocrine disrupting chemicals. This review aims to highlight the hidden burden of EDCs on human health.

Keywords: Endocrine System, Endocrine disruptors,

Introduction

Effects of environmental pollution on human health are increasingly gaining more attention globally. The chemicals that result from improper usage of nature, which end up in the destruction of environment and subsequently causes risks to human health are the environmental pollutants.

The *Mithya aharavihara*, climatic changes, habits and social environment are responsible for the vitiation of *Doshas*, which in turn disturb endocrine glands for their hyper functioning.

The endocrine system is the most important and overall health affecting system of the body. In other words, they play key roles in determining the quality of life, and many hormones are absolutely essential for survival. These EDCs act via various receptors through a variety of known and unknown mechanisms. They differ from toxins in several forms .

MATERIALS & METHODS

Review of Literature

What are hormones?

To understand endocrine disruption, we must understand the basic features of the endocrine system; a series of ductless glands that secrete hormones directly into the blood to regulate various body functions. Hormones are natural chemicals that are produced in cells within a gland and released into the circulatory system, where they travel through the bloodstream until they reach a target tissue or organ.[1]

BACKGROUND ON THE HUMAN ENDOCRINE SYSTEM

The endocrine system consists of a various of glands that are distributed throughout the body. Each gland produces one or more hormones.

Hormonal dysfunctions: It include infertility, growth imbalnces, sleep disorders, and many other disorders. If the endocrine glands release the right hormone at right time the body will be able enough to enable healthy life.

DEFINITION ENDOCRINE DISRUPTORS

The chemicals that encroaches with the body's endocrine system and produce adverse effects on development, reproduction, and neurological, effects in human are Endocrine disrupters.

An endocrine disruptor is an exogenous substance or mixture that alters the function of the endocrine system and consequently causes adverse health effects.

Certain chemicals are structurally similar to hormones and can bind to the receptor causing a similar effect or blocking the action of the natural hormone. Other chemicals can block the synthesis, degradation or the transport of the natural hormone to the receptor.

The most Common Endocrine disruptors includes Bisphenol A (BPA) , Phthalates , Phthalates used to make plastics more flexible, found in food packaging, cosmetics, children's toys, and medical devices, Triclosan

may be found in some anti-microbial and personal care products, like liquid body wash. There may be many hidden hazardous effect of these chemicals which we are not aware, and usage of these products on regular basis might the reason for many unknown disorders which later develops into major diseases.

Hormonal Imbalance as per Ayurved

In women, hormones play an important role in balancing the mind, body, and spirit. Abnormal fluctuations, deficiency or excess reproductive hormones in women can cause many physical and psychological diseases. There are many signs and symptoms of hormonal imbalance in women.

DISCUSSION

The major source of exposure is seen at home, at work place., public places etc. The food that we eat, the chlorinated drinking water, the polluted air are major sources of exposure affecting the system. Some common examples of EDCs include DDT and other pesticides; *bisphenol* A (BPA) and phthalates used in children's products, personal care products and food containers; and flame retardants used in furniture and floor coverings.

Many other chemicals are being untested. The incidence of endocrine-associated paediatric disorders, including male reproductive problems (cryptorchidism, hypospadias, testicular cancer), early female puberty, brain cancer, and neurobehavioral disorders, have all risen rapidly over the past 20 years. Environmental factors play major on hormones with later shows hazardous effect on the Cardio vascular system, nervous system, reproductive system.

Through various *chikitsa* patterns as described in Ayurved a significant treatment protocol can be prepared to prevent and reduce hormonal imbalances**.** Following Ayurvedic regimen can give significant healing effect and achieve some of the functional balance of the endocrine glands. A well planned *Pancha-shodhan* procedures viz. *Vaman, Virechan, Basti, Nasya, Raktmokshan* that detoxifies the entire body can give long lasting effects. other *upkalpanas* like *Shirodhara ,Shiroabhyanga, Abhyanga* treatment, which serve to calm the mind and reduce stress. Yoga and meditation can also help to promote mindfulness.

CONCLUSION :-

The every aspect of human health from development and growth in the mother

womb, ,reproduction, and overall health has been regulated by endocrine system . the endocrine system plays a pivot role in many important biological and physiological functions. Slight impairments in any aspect of the endocrine system can lead to minor to major disease. Hence it becomes essential to develop the capacities to measure any potential EDCs.

Exposures to EDCs occur during vulnerable periods of human and wildlife development—from fertilization through fetal development and through nursing of young offspring—which raises particular concern.

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