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Conceptual Study of Occupational Toxicity W.S.R. to Gara Visha.

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Abstract-

Ayurveda can be defined as system which uses the inherent principal of nature to maintain health in person by keeping individuals body, mind and spirit in perfect equilibrium with nature. In Ayurveda Acharya explained Garavisha concept in many ways as important concept related to Agadtantra. Gara visha is considered as one of the Kritrimvisha which gets formed by combination of two or more than two poisonous or non-poisonous drug and ultimately affects the whole body by vitiating all Dhatus in the body. According to Acharya Charak it is also called Swallowing or Artificial poison. Now a days the effect of industrialization and commercialization are widely and rapidly spreading in the society which increase the chance of contact with toxins. Large portion of workplace illness causes today are occupational poisoning. All industries use chemical at some point. Hazardous chemical can act directly on the skin resulting in local irritation or an allergic reaction. It is usually accidental. Long term exposure also causes the Cancer, Anemia, Lung disease, and De-pigmentation of the skin. This occupational toxicity is similar to Gara Visha concept. This concept given by Ancient Acharyas which throw light on changing life style and possibility of exposure of toxins. This article has aim to establish that Gara visha has significant role in causing toxic symptoms due to its various uses in present society.

Keywords- Gara Visha, Kritrim Visha, Toxins, Occupational toxicity.

INTRODUCTION

Ayurveda is the science of life which has arisen from Vedas is fine balance of science, religion and philosophy. Ayurveda mostly consist of eight branches¹. Agadtantra is one of the branches of Ashtang Ayurveda². The Gada means a disease , pain, or a poison³. Agada is stands for something which meant for defend of a disease or combat to toxins. Gara visha is the toxic combination of poisonous or non poisonous substance⁴. One of the hidden poison which produces chronic toxicity by interfering in the process of digestion. According to

Acharya Charak, it is defined as Kalantar avipaki means it takes a long time to digest so it does not shows acute toxicity but produces chronic effects or diseases⁵.

Toxins enter into human body by different route i.e. internal and external. This type of toxicity is known as Cumulative Toxicity⁶. Cumulative toxicity can be co-related with Gara Visha concept explained by Acharya Sushrut⁷. Effect of various substances is seen frequently in today's day to day routine mostly in the Occupation also. The man lives with various toxic agents of chemical and biological origin. From the industrial revolution and the modernization of agricultural activity, new agents were introduced in society with potential risk to human health. Certain sectors have increased potential for exposure to chemical and biological agents, including Manufacturing, Construction, Mining, Logging, and Agriculture as well as services sectors places such as Automobile repair, Gasoline stations, Pipelines, Waste management. Workers involved in these work activity constitutes the population in a more critical situation and has a greater risk of damage to health. Large portion of workplace illness causes today are occupational poisoning. All industries use chemical at some point. Long term use of this leads to toxicity which is seen very commonly. Hazardous chemical can act directly on the skin resulting in local irritation or an allergic reaction. It is usually accidental. Long term exposure also causes the Cancer, Anemia, Lung disease, and De-pigmentation of the skin.

AIMS AND OBJECTIVES

1. To study the concept of Garavisha.
2. To study the toxic effects of various Occupational Sector on human body.
3. To enlightened the correlation of Gara visha and Occupational Toxicity and its ayurvedic management.

MATERIAL AND METHODS

Ayurvedic and modern publication, authentic websites, literature, Sanskrit dictionary and other sources are used to compile information.

Conceptual Review

The substance after entering into the the body causes vitiation of the healthy dosha & dhatus or killing of healthy person is defined as visha.⁸ According to modern science a poison is a substance which when administrated, inhaled or ingested is capable of acting deleteriously on the human body⁹.

Majority of poison accumulation occurring in our body today is even without our knowledge as a result of change in lifestyle. In Ayurveda while described Visha, it is classified in categories like Sthavara, Jangama, Garavisha, Dushivisha¹⁰. According to Acharya Bhavprakasha the basic classification as Kritrimavisha in different manner¹¹.

The concept of Gara Visha and Dushi Visha explained in our classics is more relevant to the present day. They are like a cumulative poison which is slow acting and not fully eliminated from the system and because of this it affects all Dhatus gradually.

Gara Visha

According to Acharya Charak , "A Poison formed by combination of different poison or concocted poison finds its reference under Garaavisha other than the basic classification of visha as sthavara and Jangama". Because

of the delayed digestion property of this Visha¹². Acharya sushruta and Acharya Vagbhata opines that the poison which is formed from the waste material from the animals or combination of medicine or bhasmas which have opposite properties or poisons having less potency can be considered as Garavisha^{13/14}. Acharya Sharangdhara then classified Kritrim Visha into two types in which they stated Garavisha prepared by the combination of two non poisonous substance¹⁵. Acharya Charak described that women serve food mixed with their sweat, menstrual blood or different types excreta of their body to gain favor from their husband or under the influence of enemies they may administered Garavisha along with food¹⁶. Young girls were raised on carefully crafted diet of poisons and antidotes from very young age¹⁷. Their body fluids would be poisonous to other sexual contact would thus be lethal to other humans. There also exists that vishakanyas can cause instant death with just a touch¹⁸.

Occupational Toxicity

Hazardous chemical can act directly on the skin resulting in local irritation or an allergic or they may be absorbed through skin, ingested or inhaled. In workplace ingestion of toxic chemicals is usually accidental and most commonly results from handling contaminated food drinks. Substance that occurs as gases, vapours, aerosols, and dust are the most difficult to control and most hazardous chemical are absorbed through the respiratory tract. If inhaled, airborne contaminants act as irritants to the respiratory track or as systemic poisons.

Toxicity in such cases depends on the concentration, particle size, and physiochemical properties particularly its solubility in the body fluids.

1. Metals

Metals and their compounds are among the poisons most commonly encountered in the home and workplace. Even metals essential for life can be toxic if they are present in excessive amount for example- Iron is an essential element and is sometimes given therapeutically; if taken in overdose, however it can be lethal.

Mercury Poisoning, one of the classic occupational disease, is a representative example of metal poisoning. Exposure to mercury can occur in many situations, including the manufacture of thermometers, explosives, fungicides, drugs, paints, batteries and various electrical products.

Ingestion of mercury salts such as mercuric chloride (corrosive sublimate) leads to nausea, vomiting and bloody diarrhea. Inhalation or absorption through the skin of mercury vapours causes salivation, loosening of the teeth and tremor, it also affects the higher centers of brain, resulting in irritability, loss of memory, depression¹⁹.

Other hazardous metals commonly encountered in industry include Arsenic, Beryllium, Cadmium, Chromium, Lead, Manganese, Nickel and Thallium. Some have been shown to be carcinogenic, including certain compounds of nickel (linked to lung and nasal cancer), chromium (lung cancer) and arsenic (lung and skin cancer)²⁰.

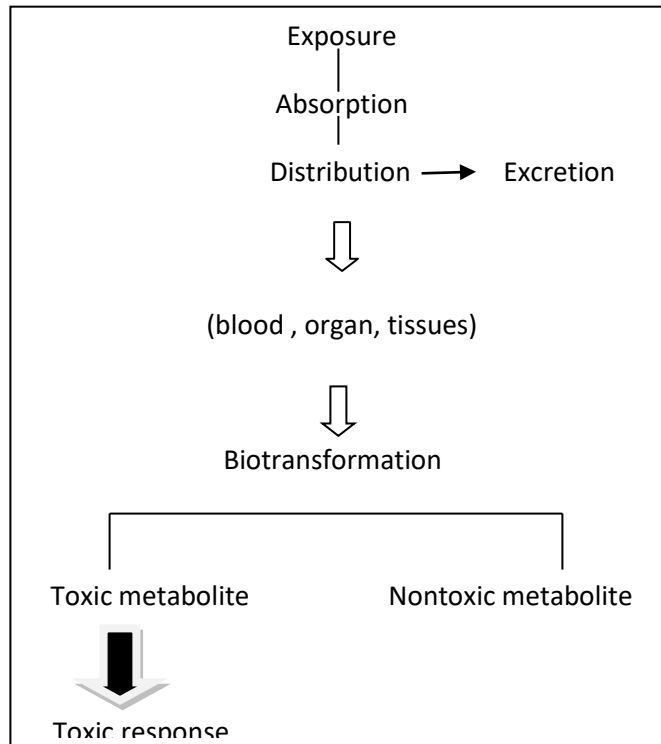
2. Organic compounds

The organic compounds that pose the greatest occupational hazards are various aromatic, aliphatic and halogenated hydrocarbons and the organo-phosphates,

Carbamates, organo-chlorine compounds and bipyridylum compounds used as pesticides. Even through precautionary measures can be instituted poisoning frequently occurs in agricultural communities.

The organophosphates and less toxic carbamates exert their effects by inhibiting cholinesterase, an enzyme prevents the stimulation from becoming too intense or prolonged by destroying the acetylcholine involved in the transmission of impulse in the autonomic nervous system causing the symptoms related to parasympathetic overactivity such as chest tightness, wheezing, blurring of vision vomiting, diarrhea, abdominal pain and in severe cases respiratory paralysis²¹.

Pathophysiology



Sign of Gara Visha ²²

It takes approximately 15 days to 1 month for the signs to appear after the ingestion of the Gara Visha. Some of the symptoms like pale and weak body, loss of appetite, tachycardia, edema of the limbs grahani, rajayakshma, gulma, dhatukshaya, jwara etc will start to appear are suggestive of Garavisha poisoning.

Gara visha chikitsa

According to Acharya charak²³

1. Hridaya Shodhana- Vaman Karma with Tamra Churna(copper powder) mixed with honey.
2. Suvarna Prashana- after Vamana Karma patient should be given swarna Bhasma with Madhu.
3. Agadapaana – nagadanti agada.

According to Acharya Vagabhatta²⁴

1. Vamana Karma
2. Sharkarasuvarnadi Leha
3. Moorvaadiguduchyadi churna
4. Patavataadi Hima.

DISCUSSION

In today's society many food items are adulterated by many factors. Even milk what we know as the purest is also adulterated. Now a days vegetables and fruits also contain chemicals beyond permissible limits. In agricultural practices there is also use of chemical fertilizers, pesticides. By taking these food products many harmful chemical enter into the body which can cause acute, chronic or cumulative toxicity, transdermally causing local as well as systemic problem. Work and occupation hold immense significance in human life, fulfilling material, social psychological and human need. They are essential for providing basic necessities, maintaining mental health and determining social status. Meanwhile occupational poisoning is caused by exposure to toxic chemical during work. Inevitable use of toxic and dangerous chemical in some workplace causes the high incidence of occupational poisoning. It is also influenced by multiple factors such as outdated production processes, inadequate supervision and management measures of enterprises, insufficient protective facilities in the workplaces, inappropriate use of personal protective equipments and workers own safety awareness. Gara visha is often ingested unknowingly hence the person doesn't feel anything immediately.

CONCLUSION

Gara visha can be correlated with cumulative toxicity. It is not an acute condition its effect is seen gradually on the body if it is accumulated in the body frequently. It definitely produces the toxic effect in the body. Gara visha shows various types of toxic symptoms and disorder on different systems of the body which mainly includes Skin, GI tract and Nervous system. People cannot change their occupation as it plays an important role in their life. But due to demands and new techniques in rat race makes the Human Occupational needs into the Greedy nature. Due to which the cumulative poison comes in relation with the human being. As Gara visha acts as a slow poison, its effects are not seen immediately but its long term effect can be very dangerous as it makes the treatment a little bit difficult. So the Aggravated use of chemical should be avoided. It can be possible by Protective facilities in workplace, Adequate supervision and Management measures of enterprises.

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