

SCOPE OF AGADA TANTRA WSR TO ENVIRONMENTAL TOXICITY***¹Dr. Shweta Mumbaraddi and ²Dr. Sarojani Kuchanur**

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ABSTRACT

Ayurveda is an ancient science; it aids to endorse and reserve the fitness of a well individual and also deliver the various management for the illnesses. Environmental pollution is the main problem in the present situation. Pollution is an incessant process in which pollutants gets poised and stored, which later cause harm to the natural environmental constituents. This issue of contamination should be taken very extremely major issue, as it ill the natural elements of earth such as air, water which are accountable for life on earth. The presence of these in unwanted quantity animals including human being and plants could not survive. Environmental pollution consists of mainly air water and soil pollution. If we look at Astang Ayurveda, Agadtantra (Ayurvedic toxicology) is the 6th branch of Ashtang Ayurved which contracts with the poison i.e. its identification, types of poison from mineral, plant, and animals as well as artificial poison and its treatment. The concept of environmental pollution had been labelled

in the various text and classical books. In Ayurveda Acharyas had fleetingly labels the environmental health in Dincharya, Ritucharya and Janpadodhvansa. The review article is a main method to find out the answer for upcoming environmental pollution through ancient science.

KEYWORDS: Ayurveda, Environmental pollution, Agadtantra; Janpadodhvansa.

INTRODUCTION

The term environment approximately comprises all the external factors such as living, non-living, material, and non-material which are enclosed to the man. **Environmental toxicology** is a multidisciplinary field of science concerned with the study of the harmful effects of various chemical, biological and physical agents on living organisms.

Environment is ended up of three components i.e. physical, biological, and social.

- **Physical:** Water, Air, Soil, Housing waste, radiation etc.
- **Biologic:** Plant and animal life including bacteria, viruses, insects, rodents, and animals.
- **Social:** Customs, culture, habits, income, occupation, religion, etc. The key to healthy life of man lies in the environment. All the environmental components which lead to air pollution, water pollution, soil pollution, poor housing condition, presence of animal reservoirs and insects, vectors of diseases continuous threatened to man's health. The word pollution is derived from the Latin word pollution which means to make dirty. The qualitative dilapidation of environment and its natural resources with different pollutants is called as environmental pollution. Pollution is a global problem which reason hazardous effect on human being and natural resources. The main harmful effect of pollution is seen on environment which further leads to the breakdown of different eco system chain present in it.^[1] The global problem pollution in the environment leads to the physical and biological effect that vary according to their intensity. Rachel Carson is measured the mother of environmental toxicology, as she made it a distinct field within toxicology in 1962 with the publication of her book *Silent Spring*, which covered the effects of uncontrolled pesticide use. Carson's book was based extensively on a series of reports by Lucille Farrier Stickel on the ecological effects of the pesticide DDT. Mass quantity of people is called as Janpada and when this mass people get effected with diseased and destroy the whole region and it spread like an epidemic is called as "Janpadodhvansa Rogas." Aacharya Charaka has been describing it in chapter 3 of Vimana Sthan in which the description of Vayu (Air), Desha (Land), Kala (Season), and Jala (water) all are affected. Aacharya Charaka has also described symptoms of Samanya Vayu (Normal air), Vikrut Vayu (Polluted air) and VIs hdushit Vayu (Poisoned Air). Poorvarupa (early science of Janpadodhvansa) are normal condition of stars, planets, moon, sun, air, fire, and the environment which derange the seasons. According to modern science we get to know that above four factors get vitiated due to pollution and leads to epidemics continuous exposure to this factor leads to various disorders and complication. Their constituents get stored in the body and when favorable condition occurs it stimulate the

constituent and create various complication in the body. Air Pollution and its Ayurvedic Perspective Air is the constituent on which all forms of life depend.^[2] Human beings, animals, and plants requires continuous supply of air to exist. Air pollutants like chemical, physical (e.g. Particulate Matter) or biological agent which modifies the natural characteristic of the atmospheric air is categorizes as air pollution. In today's situation, air pollution creates on chief discussion in human life. It is not bounded or recognized by geographical or political boundaries.^[3] Air pollution act like as a silent killer as it is present all around us, and it preys to both young and old, To counteract, hygiene is most important, not only in terms of health but also in production performance and in terms of food safety.^[4]

MODERN ASPECT OF ENVIRONMENT TOXICOLOGY

- Due to household exposure to smoke from dirty cook stoves and fuels, 3.8 million die every year.
- 91% of the world's population lives in places where Air quality exceeds WHO guideline limits.
- 4.2 million Deaths every year because of exposure to ambient (outdoor) air pollution. 2.1.1. Sources.
- Automobiles: One of the major sources of air pollution is motor vehicles. These vehicles emit hydrocarbons, carbon monoxide, lead, nitrogen oxides, and particulate matter.
- Industries: Through the chimney large amounts of pollutants is transmitted into the atmosphere. Combustion of fuel to generate heat and power produces smoke, sulphur dioxide, nitrogen oxides, and fly ash.
- Domestic Sources: In domestic usage of coal, wood, or oil smoke, dust, sulphur dioxide, and nitrogen oxide are gotten.
- Indoor air Pollution: Stove, aerosol sprays, solvents tobacco smoke, resin products building material and insecticide sprays etc.
- Miscellaneous: These comprise burning refuse, incinerators, pesticide, spraying, natural sources (e.g. windborne dust, fungi, bacteria), and nuclear energy programs.

AYURVEDIC VIEW

As mention in ayurvedic text during ancient time, to harm or kill someone atmosphere poisoning was been done as military operation to harm the enemy during war by fumigation of toxic substances.

- Vikrita Vayu Lakshana – This type of air is responsible for causing illness such as not following the season excessive moist speedy, harsh, cold, hot, blocking, rough, terrible sound, excessively clashing with each other and affected with an unsuitable smell, vapor, gravels, dust and smoke.^[5]
- Characteristics & Effects of polluted air – Flying birds in the sky and fall down from the sky to ground in tired condition, it indicates that wind is polluted by the poisonous smoke. In human beings and attack of cough, nasal discharge, headache, and Sevier eye disease among person inhaling the same wind and smoke.
- Purification of polluted air^[6] – In ayurvedic text many drugs are mention which are helpful for the purification of atmospheric air by burning herbal drugs fumes coming out from these drugs helps in purification of poisonous air.

In Chikitsa Sthana 23rd chapter Acharya Charaka has mentioned some fuming process that help in detoxifies the environment.

- Powder of Yellow Mustard (*Brassica campestris* L.) and Chandana (*Santalum album* L.) + Ghrita (Clarified butter)
- Combination of Tagar (*Valeriana wallichii* DC.), Kusthha (*Saussurea lappa* C.B. Clarke), flower of Shirisha (*Albizia lebbek Benth.*)
- Combination of equal quantity of Laksha (Shellac), Usheer (*Vetiveria zizanioidis* L.), Tejpatra (*Cinnamomum tamala* Buch.-Ham. T.Nees), Guggula (*Commiphora mukul Hook ex Stocks*), Bhallatak (*Semicarpus anacardium* L.), flower of Arjuna (*Terminalia arjuna* Roxb.), Raal (Extract of *Shorea robusta* Gaertn.), White Aparajita (*Clitoria ternatea* L.).^[5]

Management of Janpadodhwansa according Acharya Charaka^[19] According Acharya Chraka, Panchkarma therapy (Vamana-Emesis, Virechana- Purgation, Niruha, Anuvasanam, NasyaErrhines) is the best treatment. It helps in complete detoxification of body. After the panchakarma treatment and proper use of Rasayan (Rejuvenative therapy/Immuno-modulator) measures and management with the drugs collected in a normal environment is recommended. And also following the Sadvritta & Aachar Rasayan (Good behavioral activity and personal hygiene) is also helpful for reducing the effect of Adharma (i.e. not following the rules & regulations said by ancestors) which is the main reason of Janpadodhwansa (Imbalance of ecosystem).^[6-7]

CONCLUSION

Agadtantra is the 6th branch of Ayurveda which deals with the different type of poison and its toxicity and their management and treatment, so environmental toxicology comes under in it. Various studies shows that some of these methods of Ayurveda have the potential to detoxify

the environment from various pollutant. It is not only significant for proper healthy growth of human beings but also socioeconomic group of society and the nation. If we look today's era leads to gradual destroy of our eco system in the form of pollution which is the most iconic problem for all the countries in the world. If this burning problem of pollution is not taken seriously than it will create a frightening future. In ancient contemporary science our Acharyas has described the action related with Janpadopdhavna which shows very effective in pollution associated problems. Many experimental researches can be done to designate the efficacy of these ayurvedic drug and methods specified in the Ayurveda through which they will help in detoxify the body and environment without causation any damage to other essential factors.

REFERENCES

1. Murthy, K.R.S., Sushruta Samhita, Chaukhambha orientalia, Varanasi, India, Kalpasthan, 2010; 3(16): 431.
2. Murthy, K.R.S., Sushruta Samhita, Chaukhambha orientalia, Varanasi, India, Kalpasthan, 2010; 3(17): 431.
3. Tripathi B., Charaka Samhita. Chaukhambha orientalia, Varanasi, India, Chikitsasthan, 2013; 23, no. 98-100, pp. 767-768.
4. Nautiyal, C.S., Chauhan, P.S., Nene, Y.L. Medicinal smoke reduces airborne bacteria. *Journal of Ethnopharmacology*, 2007; 114(3): 446- 451.
5. Sharma, P.K., Ayub, S., Tripathi, C.N., Dubey, S.K. Agnihotra – A non-conventional solution to Air pollution. *International Journal of Innovative Research in Science & Engineering*, 2014; 2.
6. Babu, K., Maheswari, U. In vivo studies on the effect of *Ocimum sanctum* L., leaf extract in modifying the genotoxicity induced by chromium and mercury in *Allium* root meristems. *Journal of Environmental Biology*, 2006; 27(1): 93-95.
7. Lad, N., Palekar, S. Preparation and evaluation of Herbal Dhoop for cleansing the air. *International Journal of Herbal medicine*, 2016; 4(6): 98-103.
8. Kulkarni, K.A., Zambare, M.S. Study the Impact of Houseplant in purification of Environment using Wireless Sensor Network. *Scientific research Open Access (Wireless Sensor Network)*, 2018; 10(3): 59-69.