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Dr. Jaya Singh
P.G. Scholar, Department of
Kaya Chikitsa and
Panchkarma, Govt. P.G.
Ayurvedic College & Hospital
Choukaghat, Varanasi, Uttar
Pradesh, India

Tenets of epidemiology in Ayurveda

Dr. Jaya Singh

Abstract

Ayurveda, the science of life, is the most ancient medical doctrine of human civilization. Some of the basic principle described in Ayurveda are still the same as today's medical science. Ayurveda does not have a specific text as epidemiology, but the principle described in piecemeal can be compiled, analyzed and interpreted in the light of modern theories of epidemiology. It is interesting to note that the tenets described centuries back are very much relevant at this present era, and their importance can not be neglected.

Keywords: Epidemiology, tenets

Introduction

According to the definition, an epidemic disease is the rapid spread of infectious disease to a large number of people in a given population within a short period of time, usually two weeks or less. Epidemics are generally caused by several factors including change in ecology of the host population, a genetic change in pathogen reservoir or the introduction of an emerging pathogens to a host population. Generally epidemics occur when host immunity to either an established pathogen or newly emerging novel pathogens is suddenly reduced below that is found in the endemic equilibrium and the transmission threshold is exceeded.

An epidemic may be restricted to one location, however if it spreads to other countries or continents and affects a substantial number of people, it may be termed as pandemic. The declaration of an epidemic usually requires a good understanding of a baseline rate of incidence.

There was much debate in the 19th century about the origin of diseases. During this time there were theories to explain infectious disease in general. The Greek physician Hippocrates known as 'the father of medicine' was the first person known to have examined the relationship between the occurrence of the disease and environmental influence. He believed that diseases are caused by an imbalance of four humors air, fire, water and earth or 'atom'. He has coined the terms 'Endemic' and 'Epidemic'. Endemic diseases are usually found in some places, whereas Epidemic diseases are those which are seen at times but not others. Another theory which was most widely accepted was the Miasma theory. The Greek word 'Miasma' stands for pollution. 'Miasma' was considered to be a poisonous vapour or mist filled particles from decomposed matter that causes illness^{002E}.

Objectives

- To study the concept of epidemiology in Ayurveda and their assessment.
- Interpret their contemporary significance.

Concept of Epidemiology in Ayurveda

Ayurveda deals with all aspects of life including the surrounding environment where we reside. It is based on the relationship between mother nature and human beings. Nature has significant impact on health as well as in creating diseases. Whenever an effort is made to disturb nature, it has a tendency to destroy it back which leads to the vitiation of air, water, land and climate ultimately leading to mass destruction of people and wealth. This is termed as 'Janpadodhwans' in Ayurveda which is closely associated to the modern scientific knowledge of epidemics. Authors of ancient Ayurvedic texts were much familiar about epidemic diseases along with the mode of spread.

Corresponding Author:
Dr. Jaya Singh
P.G. Scholar, Department of
Kaya chikitsa and
Panchkarma, Govt. P.G.
Ayurvedic College & Hospital
Choukaghat, Varanasi, Uttar
Pradesh, India

Certain group of diseases is transmitted from one person to another by direct or indirect contact, while another group of diseases is born from a common source of polluted air, water, land and distored climate, which refers to the broad heading of 'Janpadodhwans'. Acharya Charak has mentioned about 'Janpadodhwansa' in Vimana sthana chapter 3.

The term Janpadodhwans is a compound term composed of 'Janpada' and 'Dhwansa'. 'Janpada' means community, nation, and people, an empire or people belonging to a country. 'Dhwansa' means perishing or destruction.

Ancient Sanskrit classics like Astadhyayi, Ramayana, Mahabharat and numerous Puranas refer Janpada to the earliest gathering place of men.

From all these points it can be concluded that the term 'Janpada' was used to denote collection of large number of people residing in a specific region. The nearest corelation for this concept in the modern contemporary science in epidemics.

Etiology of epidemic in Ayurveda

According to Ayurveda there are mainly three root cause of diseases. They are-

1. **Pragyaparadh:** Mistake of intellect, the mistakes performed by intellect is classified in to three group-
 - a) **Dhi (intellectual):-** mistake due to lack of intellect or ignorance.
 - b) **Dhriti:** lack of awareness produces mistakes.
 - c) **Smriti or Smritibhransa:-** Mistakes due to loss of memory.

Simply in this context 'Pragyaparadh' is disobeying the law of nature.

2. **Asatmyendriyarthasamyoga:** Improper contacts of senses with their objects, results in an overstimulation

and deficiency of sensory activity. This harms the body and mind which requires moderation and harmony internally and externally for healthy functioning.

3. **Parinama or kala:** The external environment can trigger disease by unbalancing the body through unnatural and extreme variations in temperature, rainfall or wind which in turn leads to causations of epidemics. It also refers more generally to the effects of time and natural physical transformation that occur over time. for example, seasonal influences on the disorders associated with specific phases of life and ageing are all in this category.

However in this present era we also find some of the anthropogenic factors causing air, water and land pollution along with various other factors leading to climate change.

Natural history of diseases

Kriyakala is one of the age-old principles described in the classical treatises of Ayurveda. *Kriyakala*, also known as *Shatkriyakala*, is predominantly a concept of Ayurveda, which describes different phases of a disease formation in its own unique way. This concept can be compared with natural history of disease in modern medicine. Different phases of *Shatkriyakala* as compared with natural history of disease are described in Table 1. Albeit many authorities compare it simply with pathogenesis, but a meticulous look unravels its relation with natural history of disease. Here, it is important to mention that natural history of a disease includes both prepathogenesis and the pathogenesis stage as well. The concept of *Shatkriyakala* is of utmost importance from public health intervention point of view and more especially from the perspective of disease control stratagem.

Table 1: Concept of natural history of disease as compared with 'Shatkriyakala' and 'epidemiology'

Comparable concept in Ayurveda	English equivalent of Ayurvedic concept	Concepts in epidemiology
Sanchaya and prakopa	Stage of accumulation and stage of vitiation	Stage of susceptibility
Prasara and sthanasansraya	Stage of dissemination and stage of localization	Stage of presymptomatic disease
Vyakti	Stage of menifestation	Stage of clinical disease
Bheda	Stage of complication	Stage of diminished capacity

Mode of communicable disease transmission according to ayurveda

Acharya Sushrut has depicted different modes of communicable disease transmission in his classical treatise *Sushrut Samhita* in nidansthan adhyaya 4th Kushthanidanadhyaya. He has mentioned *Aupasargikrogas in Kushthanidan*. They are contagious diseases which spread through direct contact or contaminated objects of patient. By physical contact, expired air, eating with others in same plate, sharing bed (sexual contact also) using clothes, garlands and paste (*anulepa* or cosmetics) infectious diseases spread from person to person. Meaning of *Prasang* is excessively and frequently performed according to Acharya Dalhana.

Management of epidemics through ayurveda

Even with the availability of powerful pharmacological agents epidemics are unmanageable and preventive measures like limitation of spread by isolation and strengthening the immune system are key points.

The concepts of microorganism has been well emphasized

in Ayurveda in the context of Krimi, Bhuta, and Graha, etc., due to unhygienic practices. Management is also very similar to modern microbiology. Avoiding the factors responsible for the causation of the disease removal of the microorganism from the affected site (Apakarsana) and bringing change in the environment has been suggested by Charak for the management of infectious diseases. Some preventive measures mentioned in Ayurvedic classics are listed below-

1. Karma Panchavidham (Appropriate use of Panchakarma)

Vaman, Virachan, Niruhabasti, anuvasanbastiand, shirovirechanare, panchakarma described by Acharya Charak, Acharya Sushrut and Acharya Vagbhat included *Raktmokshana* among *shodhanupkramas* Depending upon *Doshabala, vyadhibala* appropriate remedy from above should be selected and implemented.

2. Rasayanam Viddhivaat upyoga (Use of Rasayana)

According to Acharya Charak treatment is of two types.

1. Promotive- It is of two type

- a) Which provides strength and immunity to healthy person- *Rasayana* (rejuvenation) The *Rasayana* is of two types. i.e. *Kutipravesnik and Vatatapika*. In case of communicable disease *vatatapikRasayana* can be used. It has minimal precautions and can be easily used in day to day life. In CharakSamhitaChikitsasthanaadhyay 1 various *Rasayana* and their indications, benefits have been mentioned. Out of which *Chyavanprash, TriphalaRasayana* etc will prove helpful.
- b) Which promotes sexual vigor- *Vajikaran* (aphrodisiacs)

2. Curative-treatment which cures the disease of suffering people**3. AcharRasayana and Sadvrittapalan**

These rules and regulations help in maintenance of mental and spiritual wellbeing of a person. Truth, sympathy, respecting elders and teachers, helping needy people, eating nutritious and *Satvikaahar* e.g. milk, ghee etc. in daily food. Properly following these rules will benefit the person in the same way as that of consuming *Rasayana*. Hence it is called *AcharaRasayana*.

Along with this regimen treatment of symptoms as per mentioned in *chikitsasthana* can be done.

Conclusion

It is interesting to note that tenets described centuries back are very much relevant at this present era, and their importance can not be neglected. Moreover, the in-depth analysis of the concepts of Ayurveda in the light of modern contemporary science is only possible with those scholars who know both Ayurveda and the relevant concepts in modern medicine. The crux of this point is that Ayurveda requires interdisciplinary research which is the need of the hour.

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