



**CRITICAL STUDY ON WATER BORNE DISEASE WSR TO JANAPADADHVAMSA**

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**ABSTRACT**

The term epidemic means spread widely in community at particular time is known as epidemic and the term pandemic means occurring over a wide geographic area affects large number of population is known as pandemic. Infectious disease epidemiology is fundamental part of whole epidemiology. So the infectious disease such as flu virus, hepatitis, malaria, dengue etc, can be spread both epidemic and pandemic cause disaster in community. In ayurveda the term janapadadhvamsa meant mass people get afflicted with disease and destroy the whole region. Our acharya has been said the common causative factor for epidemics and pandemics disaster to peoples and how it afflicts to people even there is dissimilarity in nature. This compilation study will be highlighting the mass affliction of people in world.

**KEYWORD:** Epidemics, Pandemics, Janapadadhvamsa.

**INTRODUCTION**

Water is the necessary component to human's life and health. World health organization has documented more than one billion people worldwide do not access the safe drinking water. Supplying of safe drinking water is critically challenging in developing countries. This has leads to rising of water born disease like diarrhoea, dysentery, cholera, etc. this occurs in form of epidemic and affects people who shares common source of water. Water intended for human consumption should be both safe and wholesome. It should be free from pathogenic agents and harmful chemical substances. Pure uncontaminated water does not occur in nature. It contains impurities of various kinds natural and man-made. The natural impurities are not so dangerous. The water can be contaminated by mixing of various substances such as raw sewage, slit, oils and chemical waste. The suspended impurities such as clay silt sand and mud and microorganism are capable to manifest disease. The water borne disease caused by ingestion of contaminated water either directly or through food and by use of contaminated water for purpose of personal hygiene. The water borne diseases are spreading by drinking of water contaminated with urine and faeces of infected animal and human. The contaminated water may occur due to flood water, water runoff from landfills, septic field water and sewer pipes. The human and animal faeces which contains more pathogenic

microorganism cause water borne disease. The pathogenic microorganisms are bacteria, virus, protozoa, helminthic are most common causative factor for infectious disease. The water related disease may be classified as Biological (water born disease) and chemical.

**Biological (Water borne disease)**

1. Those caused by presence of infective agent.  
Viral: hepatitis A, hepatitis E, poliomyelitis, rotavirus diarrhoea in infants.  
Bacterial: typhoid and paratyphoid fever, bacillary dysentery, cholera and Esch coli diarrhoea.  
Protozoa: Amoebiasis, Giardiasis.  
Helminthic: Roundworm, Threadworm, Hydatid disease.  
Leptospirosis: Weil's disease.
2. Those due to presence of an aquatic host.  
Snail: Schistosomiasis.  
Cyclops: Guineaworm, Fish tape worm.
3. Some Disease is transmitted because of exposure to tiny amount of contaminated faecalwater like shigellosis, trachoma and conjunctivitis, ascariasis and scabies.
4. Some diseases are related to insects breeding in or near to water like malaria, filarial, arboviruses and onchocerciasis.

Virus	Agent	Environmental factor	Characteristic clinical features	Ayurvedic correlation
Hepatitis A	Enterovirus	Periods of heavy rainy season. Poor sanitation	Nausea, vomiting, anorexia, mild fever and jaundice.	kamala
Hepatitis E	Hepatitis E virus	Contaminated food and water	Nausea, vomiting, anorexia, mild fever and jaundice.	kamala
Poliomyelitis	Polio virus	Rainy season, cold environment and poor sanitation	Stiffness, pain in neck and back, Flaccid paralysis, fever at the time of onset of paralysis, malaise, anorexia, nausea, vomiting, headache, sore throat, constipation and abdominal pain	pakshagata
Rotavirus	Double stranded RNA virus from reoviridae family	Faecal oral route	Severe diarrhoea, vomiting, black stools, fatigue, high fever, dehydration, abdominal pain, dry mouth, cold skin, lack of tears and reduced urination	visucika

Bacteria	Agent	Environmental factor	Characteristic clinical features	Ayurvedic correlation
Typhoid	Salmonella typhi	Rainy season and increase in fly population	Chills, high fever, malaise, headache, cough and sore throat. Often with abdominal pain and constipation	jwara
Paratyphoid	S. Para A and B	Rainy season and increase in fly population	Chills, high fever, malaise, headache, cough and sore throat. Often with abdominal pain and constipation	Jwara
bacillary dysentery	shigellosis	Contaminated food and water	Diarrheal, abdominal cramp, fever and dehydration.	Atisara
Esch coli	Escherichia coli	Contaminated food, raw milk and uncooked vegetables	Abdominal cramping, watery diarrhoea that may change to bloody stools, gas, loss of appetite, fatigue, vomiting and fever.	Atisara
Cholera	Vibrio cholera	Poor environmental sanitation includes contaminated water and food. Low standard of personal hygiene.	Profuse, painless, watery diarrhoeas. Later stage dehydration sunken eyes, hollow cheeks, scaphoid abdomen, sub-normal temperature, washerman hands and feet, absent pulse, loss of skin elasticity, shallow and quick respiration and decreased urine output, restless, thirst and cramps in legs and abdomen.	Atisara

Protozoa	Agent	Environmental factor	Characteristic clinical features	Ayurvedic correlation
Amoebiasis,	Entamoeba histolytica	Poor sanitation and socio-economic status	The intestinal disease varies from mild and abdominal discomfort and diarrhoea to acute fulminating dysentery.	Atisara
Giardiasis	Giardia lamblia	Poor sanitation	Fatigue, nausea, diarrhoea, loss of appetite, vomiting, bloating and abdominal cramps, weight loss, excessive gas, headaches and abdominal pain	Atisara

Helminthic	Agent	Environmental factor	Characteristic Clinical features	Ayurvedic correlation
Roundworm	Ascariasis lumbricoides	Poor sanitation and hygiene, use of human faeces for fertilizer, living in warm climate and exposure to dirt environment.	Lungs: Coughing, shortness of breath, blood in mucus, aspiration pneumonia chest discomfort and fever. Intestine: nausea, vomiting, diarrhoea, intestinal blockage cause pain and vomiting, loss of appetite, abdominal discomfort and weight loss and malabsorption.	Krimi
Threadworm	Enterobius vermicularis	Contaminated objects and food	Itching around anus and vagina in girls particularly at night, loss of appetite, weight loss and bedwetting	Purishaja krimi
Hydatid disease	Echinococcosis	Contaminated soil by dog faeces, food and water	Enlarging fluid filled cysts commonly in liver and lungs or in any organ.	Krimi

Leptospiral	Agent	Environmental factor	Characteristic Clinical features	Ayurvedic correlation
Weil's disease.	Leptospira bacteria	Contaminated soil and water	Pain in joints and muscle, vomiting nausea and diarrhoea, chills, fatigue and fever, rashes, sore throat, cough with bleeding	Atisara

Snail	Agent	Environmental factor	Characteristic clinical features	Ayurvedic correlation
Schistosomiasis	Schistosoma parasites	Freshwater contaminated with parasites(snails)	Abdominal pain, diarrhoea, bloody stool or blood in urine. Those who have been infected for long time may experience liver damage, kidney failure, infertility or bladder cancer.	Raktaja atisara

Cyclops	Agent	Environmental factor	Characteristic clinical features	Ayurvedic correlation
Guineaworm	Guinea worm	Contaminated water by fleas	Painful blister on lower leg	Krimi
Fish tape worm	Diphyllobothriasis	Raw and undercooked fish	Abdominal pain, diarrhoea, vomiting, weight loss, fatigue	Visucika

### Chemical causes and disease

Chemical pollutants are derived from agriculture and industrial wastes are increasingly finding their way into public water supplies. These pollutants include heavy metals, minerals, detergent solvent, ammonia, cyanides, dyes, sulphides toxic and biocide organic compound. This chemical pollutant affects man health not only directly but also indirectly by accumulating in aquatic life (e.g. fish) used as human. The chemical pollutants not so much as to their acute toxic effects on human health as to the possible long-term effects of low level exposure.

**Lead:** Exposure to lead poisoning or pollution include mining, smelting, manufacturing and recycling cause cardiovascular disease, cerebrovascular disease, chronic kidney disease, haemorrhagic stroke and neurological impairment.

**Arsenic:** chronic exposure to inorganic arsenic can lead to chronic arsenic poisoning, skin lesion and skin cancer.

**Mercury:** Exposure to mercury produces cerebellar ataxia, kidney and auto immune dysfunction, arthritis and respiratory failure.

**Ammonia:** ammonia is an irritant to the respiratory tract.

**Cyanide:** when exposed to it produced rapid breathing, tremors and other neurological effects. Weight loss, thyroid problem and nerve damage.

**Fluoride:** High levels of fluoride cause mottling of dental enamel.

**Cadmium:** Accumulates primarily in kidney and reduce human life 10- years.

**Nitrate:** High nitrate content of water causes methemoglobinemia (Cyanosis in infant).

**Other heavy metal:** heavy metal causes damage to nervous system and kidney and other metabolic disruptions.

**Hardness of water:** Hardness of water appears to have a beneficial effect against cardiovascular disease.

### Ayurvedic perspective

In ayurveda the term janapadadhvamsa meant mass people get afflicted with disease and destroy the whole region. Our acharya has been said the common causative factor for epidemics and pandemics disaster peoples and how it afflicts to people even there is dissimilar in nature, diet, physical strength, habit, mental strength and age but still such factors are commonly being to all individual and vitiation of factors cause manifestation of disease having same set of symptoms leading to large destruction in countries. These are the common factors which are essential to all inhabitants of country are air, water, land and seasons.

### Causative factors of disease can be classified into two kinds

(i) Those factors pertaining to individual (Sadharana) leads to aggravation of vatadi dosha and manifest the disease in that individual.

(ii) Those common to living being in general (Asadharana) affects several individuals residing in that locality.

### Jalajanya janapadadhvamsa

The natures of contaminated water are as follows.

Water should be devoid of merits when it excessively deranged in respect of smell, colour, taste and touch, too slimy, deserted by aquatic birds, aquatic animals are reduced and unpleasant. C.vi 3/6.

Water comes from bad or polluted area and reservoirs are dried out. A.S.Su 9/74.

#### **Effect of janapadadhvamsa**

Contaminated air, water, land and season are difficulty to avoid because they are powerfully bad in their succeeding order and their effects are also unpredictable. A.S.Su 9/77.

Country maybe completely destructed by polluted air, water, land and season because these manifest various dreadful diseases. This disease can be managed with difficulty with proper assurance and medicaments.

Vitiation of vayu, jala, desa and kala is more importance respectively. By nature these four are indispensable in their progressive order.

- Vitiation of jala is more important than vata.
  - Vitiation of desa is more important than jala.
  - Vitiation of season is more important than desa.
- The above statement signifies the gravity of latter in development of epidemics and pandemics.

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