



ZOONOTIC DISEASES AND AYURVEDIC TREATMENT; A REVIEW

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Abstract

Zoonotic diseases are infection that transmit from animal to human. These diseases can be transmitted either through the direct or indirect way. Direct transfer of disease is due to the close contact with animal due to love with nature or due to their job interaction with animal. Indirect way for the transmission is air, water, soil and vehicles use for transport of animal. The cause of disease may be a virus, bacteria, fungi and other disease causing agents. Rabies, Anthrax, Brucellosis, Cysticercosis, Bovine tuberculosis, Japanese encephalitis, and Rickettsia infection etc. are some deadly diseases. In this article, let's see the review of literature to show importance of ayurveda for the control these communicable diseases that is spreading more vigorously. Zoonosis kills a lot of population throughout the world that can also affect livestock that can lead to destroy economy of the country. Ayurveda vaccines are used to eradicate these diseases but it may be a great task how vaccines are injected. Therefore oral vaccines are made that are used. It is a beneficial way for the management of diseases that have no side effect on human health like modern medicine. Ayurveda has long roots but we need to explore their hypothesis, therefore several organizations work on it. The aim of this review is to show the prevalence of zoonosis, their pathogens and also represent the role of ayurveda that is a magical way to deal with such infections.

Key words

Zoonotic diseases, Zoonotic pathogens, Ayurveda

Introduction

Those diseases that are transmitted from animal to human called zoonotic diseases (khurana K.S et al.,2015). At the time of second world war its pathogen appear globally and effect the middle and low developing country as India. From 1940-2004 worldwide analyses of pathogenic disease show that 60.3% diseases were zoonotic that is spreading vigorously. It may effect people health from last few decades. (Chatterjee P et al.,2017). Zoonotic disease mostly occurring in those people that have close contact with animal in different center and also due to personal pleasure (khurana K.S et al., 2015).

14000 year ago zoonosis effect human health as when he keep animal as pet (dog , cat) and for dairy purpose as goat, sheep and cattle etc. Zoonotic disease have different way for its transmission either 1) Direct transmission by contact .2) Indirect transmission by air or other sources .From the prevention of disease it is need to eradicate it in early stage of infection (Shukla N et al.,2012). 60% human disease is caused by zoonosis 75% is due to zoonotic pathogens (Shahid N et al.,2016).

Since zoonotic disease is that cause illness in the effected person due to growth of pathogens. The cause of illness may be virus, bacteria, fungi and parasites etc. These disease can transfer easily from person to person and also to animals .This may include infectious disease but mostly zoonosis from last few centuries. With the development in low income countries there is also consumption of food source (protein) need that ultimately lead direct and indirect contact with animal that we use for our purpose (poultry) .In this way pathogens transfer that cause illness. (Chatterjee P et al., 2017). Other way to transmit disease (pathogens) is air, water etc. (Shukla N et al.,2012).

By the transfer of pathogen illness is occur in affected person. Respiratory infection is more usual. Here we review some zoonotic disease that cause illness as Rabies is a deadly disease that transmit from dog to human through saliva. It effect on brain, swelling is also occur. It mostly found in Asia and cause many of death. It also effect other countries thus zoonosis is dangerous system of disease that kill human beings (Mughal B.F et al.,2018). Swine flue is common disease in those who tackle with pigs. Swine flue equally effected to child and younger due to viral infection.

There is need to cure this disease that is treat with ayurveda in which vaccine is commonly use that produce antibodies against virus .These vaccines are herbs base. Ginger, Garlic and Aloe Vera is also use (kadam M et al.,2015). Leptospirosis is infection disease that is cause due to urine of mammal either directly or indirectly. It is effected people in low income country both in village and city life .According to a calculation 20-70% person have sign of lung failure that have cough productive of blood other symptom related to lungs may also appear. (Bharti R. A et al.,2003).

Anthrax, Plague, Brucellosis , Salmonellosis, Cysticercosis , Bovine tuberculosis, Japanese encephalitis, and Rickettsia infection are dangerous zoonotic disease. (Chatterjee P et al.,2017).

Prevalence of zoonotic diseases

Zoonosis greatly effect the worldwide through different pathogens. Rabies is deadly disease that kill 30,000 people in Asia while 2000 -5000 death in Pakistan is reported. More than 55000 person kill due to rabies world widely. Rabies is more common in Asia than other 150 countries.(Mughal B.F et al.,2018).In India 20,000 death report due to rabies (A.S.A et al.,2012).Plague is the second severe disease that kill million of people around the world. 14-17 centuries 200 million death occur in Europe by black death pandemic, Salmonella million of illness while 4 hundred of death per year. Anthrax also killing 100 of people in India where Nipah and Hendra pathogens that emerge influence the rural population(Sekar N et al.,2011). Brucellosis is a zoonotic pathogen that cause infection in human and also prove fetal during gestation period .That lead to premature birth and also miscarriage .Miscarriage incident range between 7-51%. While the rate of premature birth is 20.5% (Kurdoglu M et al. ,2015). Diarrhea may cause 3.3-6.0 million death per year due to *salmonella*. (TD. H et al.,2011). Salmonellosis has 43 person illness within some hour. These person has body pain, vomiting head pain etc. This case was reported in span (Kunwar Rey al. ,2013).Norovirus cause 19-21 million illness while 570-800 death per year. Australia has 30% illness while England and Wales have illness due to zoonotic pathogens.(Shahid N et al. , 2016). According to a calculation about 75% infections due to the wild life.Some important wildlife viruses have great effect on people. As the HIV virus appear in chimpanzee that then transfer to human in in Africa. HIV is the largest zoonotic pathogen in human history that effect 40 million individuals through out the world and also cause death of more then 3 million people. It is a wildlife pathogen that appear in human due to animals. The mortality rate with HFRS is in between 0.1-10 % and HPS is about 45%.Apptoximately 38% mortality rate while 265 human being is being effected with Nipah virus. In 2001,2003 and 2004 the Nipah virus cases reported in Bangladesh.West Nile virus cause 500 death in western area. While in USA in between 2002-2003 it cause infection in 13273 people and death rate is 2-7% .This virus also reported in 4000 horses and cause brain infection in 20% horses.(Bengis G.R at al.,2004).

Zoonotic diseases

Zoonotic disease cause severe damage of world.Here we review some zoonotic disease to show its contagiousness as Rabies is a neurological disease that is occur due to dog biting commonly. The rabies virus effect on brain that cause unconsciousness that ultimately leads to death. A Case study in 2011 show the symptoms of rabies as temperatur,body aches, illness and difficulty in breathing(Bawasker S.H at al.,2017). Yersinia pathogen cause the plague that exist in different forms as bubonic, septicemic or pneumonic plague.40-60 % bubonic plague is severe while other two form cause 100% death if not cure timely. The signs of bubonic is temperature,feeblesness ,disturb, bulging and loose motion .These sign may appear within 2-8 day after being infected. Septicemic form cause death and its sign appear within 1-4 days. Pneumonic form is unusual and have influenza. The infection is appear with 1-3 days(Rollins S.M at al.,2003).The Anthrax is the common disease that is occur due to the bacteria *bacillus anthracis* in house hold animals that ultimately spread in human by contact with infected animal. It exist indifferent form mostly cutaneous and rarely respiratory and intestinal. *Anthraxis* is also

use in the war against enemy due to its effects(Ghenghesh S.K at al.,2002).The signs of anthrax is temperature, watery spot on body and also increase in no of white blood cell during infection. Anthrax is life threatening infection(Doganay M at al.,2010).Brucellosis is a infectious disease that have worldwide effect and kills a lot of human beings.It is causes by *brucella* bacteria. It easily spread in people that have field work with animals and animal outcome. Temperature, feebleness, sadness, enlargement of liver and spleen. Joint related cases is also appear. Due to inflammation in endometrium miscarriage is also occur in pregnant female (Shoukat S at al.,2017).Salmonella is zoonotic disease that also effect the human health. The cause of salmonella is food born pathogens . The use of juices of fruits and vegetables cause the salmonellosis. It may cause the typhoid, inflammation in stomach and intestine that cause vomiting and Diarrhea and presence of bacteria in the blood (Pui F.C at al.,2011).The Cysticercosis is occur due to worm infection.It exist in different form as effect on nervous system, eye, muscles and on skin.Thus it badly damage the brain almost 56% cause of epilepsy is cysterosis. It cause the mortality of human being mostly in villages(Nkwengulila G at al., 2014).Japanese encephalitis is a contagious disease that is caused due to the mosquito and mostly effect the child. This disease process is complete in three steps as fever, inflammation in brain and last stage (recovery) .The first stage remain for 2-5 days and sign as vomiting, temperature and head pain .The second stage remain for 1-3 weeks and cause the weakness. The last stage is the recovery stage(Berman B at al.2016). Swine flu is a virulent disease that have different sign related to environmental conditions. This can be spread hand stop by proper hygenic conditions. The signs of swine flu is temperature, shivering , body pain, vomiting and slowness. The pregnant women has at great risk of disease. The common cause of death is respiratory infection. This may cause great mortality rate(Rajoura P.O at al.,2011).

Ayurvedic treatment

The purpose of ayurvedic treatment is better health of human beings. In ayurveda plant based medicine use for the treatment of disease .By observing the infectious organisms ayurveda have different way to control and manage it.For zoonotic disease ayurveda is an important approach that can be use for eradication of disease.(Shukla N at al.,2012).Modern treatment of disease is high cost and also have negative affect on health while plant is irresistible and inexpensive way to deal with zoonotic pathogens. There are a large number of vaccine is develop for infectious disease that have amazing effects against pathogens. However there is no proper way for the delivery of vaccine to human. To solve this problem oral vaccination is use. The concept of vaccine is first given by Edward Jenner and later by this concept several vaccination are made against zoonotic disease .Due to increase in population there is a increase in production that make a complex system does not that deal with animal and human health as two different issue.(Shahid N et al.,2016).Ayurveda is rooted from second century B.C by vaisheshika (Hindu philosophical teaching) .Rig Veda, Sam Veda, Atharva Veda and yajur Veda have many knowledge of plant that use in Ayurveda. India has great history in Ayurveda(Jaiswal S.Y.,2017).In ayurveda plants based medicine use that boost the defensive system of body against disease. Mostly the medicine use are firm but commonly ayurvedic medicine are consist of grinding form that is the mixture of different herbs.(T H.D et al.,2011).The weed that are use in ayurveda have well known as Ashwaghanda , Shatavari,Guduchi,Amalaki and Bhallataka are

excellent immune boosting . More than 120 different plant chemical that have properties of medicines. According to national institute of health form anti -inflammatory drug by use of traditional approach. These drug form from the turmeric and ginger .The vaccine that form is use for the treatment of cancer.But the composition and quality of medicine should be of great significance. (Chauhan A at al. , 2015).Charaka is method that treat with pathogens.1) Apakarshanaapproach that remove pathogen from body through purification. 2) PrakritiVighata is drug that stop growth of pathogens by creating unpleasant medium for pathigens. 3) Nidaan parivarjana most favorable method to treat with pathogens by step by step process.(Shukla N at al.,2012).

Phytolaccadedocantra ,*croton macrostachyes*, *Amranthesspinosus*are plant use against zoonotic disease. *Phytolaccadedocantra*is perennial plant that for rabies due to its toxicity . Commonly use in Ethiopia north America .Approximately 90% Ethiopian believe on traditional method of medicine. Experiment was performed to check their effect against rabies. That show *p.dedecandra* leafs have ability against rabies pathogens. This experiment was perform in mice. *Croton macrostachyes*is amazing for epilepsy, rabies , cough , tooth pain , eye pain etc. If bark of that deciduous plant is chew it give relief from rabies and tooth pain.*Amranthesspinosus* is annul herb that is also use for rabies.(V K pagdala et all . , 2015).Postexposure prophylaxis is the best way to control diseases. We can stop rabies infection by PEP in which tear area is properly wipe and proper vaccine is used. The PEP method is use when the rabies symptoms still not appear(Salahuddin N at al.,2016).There are trying their best for the better vaccines in control of anthrax. Vaccines consist such pathogenic cell that is harmless and also reduce the infection as the STI strains.Human anthrax vaccine has official licensed consist of bacterial cell culture and used from 60 years.This vaccine is called AVA or AVP.It is either absorbed or percipitated.AVA have small amount of LF but have not EF(Williamson D.A at al.,2015). Brucellosis is common illness of zoonotic infection that cause serious health effect that is cure by using herbs solvent(alcohol in nature) as *Salvia sclarea*, *Oliveriadecumbens*, *Ferulagoangulata*, *Vitex pseudo-negundo*, *Teucriumpolium*, *Plantagoovata*, *Cordiamyxa*, and *Crocus sativus*. These are best against Brucellosis infection (Motamedi H et al.,2010).The herbs have strength against the *brucella* pathogen.By using these plants a mixture in the form of solution is form. The roots of barberry,garlic,Alhagi and Eucalyptus are used.A plant pigment flavones and flavonoids have healing result(Nighdi N at al.,2016). The vaccines for the salmonella treatment is the oxytetracycline and tylosine-sulfadimerazine use.Moringa oleifera ,Carica papaya and vernonia amygdalinewere commonly used by field worker. The typhoid fever is eradicated by the neat and clean environment. Untreated typhoid fever may cause the severe digestive complications. The medicine chloramphenicol, ampicillin and cotrimoxazole use for typhoid fever(Dognon V.T at al.,2017).Praziquantel is the drug that is use for the worm disease. Derivatives of plant are used for the worm disease . The mostly used plants are *Gramineae*,*Zingiberaceae* and *poaceae* (Bizhani N at al.,2015).JEV special antibodies are form to stop the Japanese encephalitis that have strength against the pathogens of japanese encephalitis. Mutagenesis and hydrogen deuterium protein is mostly use in treatment.MABs stop the infection before the attachment by stopping the spreading of virus. The MABs give single amount of antibodies after pathogenesis. This antibodies use help in control of disease(Fernandez E at al.,2018).These ayurvedic herb increase strength against disease by promoting immunity.Guduchi, Tulasi ,Shahdevi, Neem,

Pippali use for digestive fir. Eucalyptus oil , camphor , Aleo Vera and ginger use for swine flu (Kadam M et al.,2015).Since swine flu has great prevalence due to transmission through air and between individual and also have no specific drug for its control. Therefore it is deal with Traditional method which base Ojas that give strength to the defensive system of body. This involve series of process as *Nidanparivarjana* , *Shamanachikitsa*, *Shodhanachikitsa*,*Rasayanaprayoga* ,*Pranayama* ,*Yoga*.(Rakeshshukla 2015).

CONCLUSION

Zoonosis is an animal base human diseases. It kill a lot of population and also have severe effect.Due to its severe effect on health its prevention and its control is necessary.The better way is to eradicate such infection is the ayurvedic method. In this article we tried to use ayurvedic treatment of zoonotic diseases because it has no any side effect on health. Precaution and vaccine are use that boost immunity and ultimately remove much of them.

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