

PARASITE An animal that lives completely at expense of plants, animals, or humans is defined as parasite. Some authors also consider viruses, bacteria, and fungi as parasites.

Parasites have to solve several main problems in order to survive in the struggle for life;

- 1) They must develop successful strategies for host finding,
- 2) They must find methods for attachment and/or for partial or total penetration into their prospective host (host cell invasion),
- 3) They must become able to feed on their host's tissue or fluids and must be able to metabolize the nutrients obtained (metabolism),
- 4) They must develop mechanism to protect themselves from attack host's immune (defense) systems (immune response)
- 5) Last, parasites have to establish a high reproductive rate in places from which the offspring can be transmitted to other hosts (reproductive strategies)

As in many countries of the world, there are many diseases in humans and animals in our country. Parasitic diseases in contrast to bacterial and viral diseases that proceed in peracute or acute form, are chronic form and then these diseases are the cause of lack of production (unproductiveness) and finally to death. No matter what geography of the world, the factors affecting presence and continuity of the parasitic diseases are the same. Unchanging main factors are :

The temperature climate or regions

Unsuitable nourishment

Low social-economic level

Unsuitable hygiene and health conditions

Low culture level

Changing and developing of the global world

Natural environment (ground) is destroyed by humans

The changing of the climate world global; warming up, regional extremely failing

In addition to, the clean water lack,

Don't drainage sewage and waste water from the sewage system

International traveling

Animal trade and animal transport

Approximately 826 million people in the world are undernourished- 792 million people in the developing countries and 34 million people in the developed countries. The researcher claimed that 32 % of the global diseases burden could be removed (reduce) by eliminated malnutrition. Malnutrition is the primary cause of immunodeficiency worldwide. Infants, children, adolescents, and the elderly are most affected. This idea applies to animals similar to humans. There is a strong relationship between malnutrition and parasitic disease, because poor nutrition leaves humans and animals underweight, weakened, and vulnerable to infections, primarily because of epithelial integrity and inflammation.

There are many parasitic diseases in humans and animals in the world. Some of these parasitic diseases are zoonotic diseases that few numbers of these are sixty diseases, for example malaria, tick borne diseases, scabies, toxoplasmosis, giardiasis, echinococcosis, trichinellosis, hookworm and roundworm infection.

Entamoebosis: This disease is known “intestinal amoeba disease, amebic colitis, amebic dysentery”. In addition to tropic area and temperature zone, amebic dysentery exist in colder climates, such as Alaska, Russia and Canada. Survey indicate that the infection rates vary from 0.2 % to 50 % being correlated with sanitary conditions. Human is principal host, and ingestion of the infective stage, the cyst, occurs through hand –to - mouth contamination and food/water contamination.

Cutaneous leishmaniosis: Common names are “Cutaneous Leishmaniosis, Dry Oriental Sore (wound, ulcer) Jericho Boil, Delhi Boil, Old World Leishmaniosis”. Essential hosts are human and dogs, and intermediated hosts are flies of *Phlebotomus* species. The predilection site of these parasites is skin that contains one or more ulcers containing pus that generally self-heal. Diffuse leishmaniosis occurs especially limbs and face when immun response fail to take place. Infected patients initially develop a small red papule located at the bite site that is typically 2 cm or more diameter and may cause intense itching. After that papule will ulcerate after months.

Malaria: The term malaria refers to the disease process resulting from human infection of parasites belonging to the genus *Plasmodium*. Members of the mosquito genus *Anopheles* are responsible for the transmission of malaria to human via a blood meal.

Toxoplasmosis: Toxoplasmosis is found the world primarily because of the fact that a large variety of animal may harbour the organism. The definitive host in toxoplasmosis is the cat or other felides. Human infection in toxoplasmosis is accidental and may be initiated in four way.

1. One route occurs when humans are contact with the infected cat feces and subsequently ingest the mature oocyst present via hand-to-mouth transmission.
2. The second route involves humans ingestion of with oocyst contaminated undercooked meat from cattle ,sheep, pigs.
3. The third way means of human *Toxoplasma* transfer is transplacental infection. This occurs when an asymptomatic infection in a mother is unknowing transmitted her unborh fetus.
4. Although extremely rate, the fourth way of human infection occurs when contaminated blood is transfered into an uninfected human.

Scabies : Scabies cuased by *Sarcoptes scabie* is a disease characterized by intense and persistens itching , and is not a zoonotic problem. Scabies is transmitted by direct contact, and is occurs more often in crowded situations, like enemy, hospital, schools and nursing house. Scabies occurs in all people, regartless of their social status, hygiene or environment. The intens itching gradually develops over matter of weeks, as more mite eggs hatched and young mites emerge from the burrows.

Cryptosporidiosis : This disease is one of the most common forms of waterborne and foof diarrhea in the world. Cryptosporidiosis is caused by a microscopic, one-celled, protozoon parasites, cryptosporidium spp. that can be infect mammlas, reptiles, fish and birds, and *C. parvum* is the species that most often infects humans, domestic and wild animals. Cryptosporidiosis is spread by the fecal-oral route, and infected forms are called oocyst are discarded in the feces of infected humans and animlas. Humans and animals can get this disease when the put anything such as water contaminated with infected feces and food contaminated with infected feces. Transmission does not ocur through contact with blood, and uncommon rough transmission is through the respiratory tract.

Tick infestation (infection) : Ticks are ectoparasites (external parasite) and are small parasite, living by feding on the blood of mamals, birds and sometime reptiles and

amphibians. Ticks are widely distributed around the world, especially in humid and warm climates.

They are obligate haemorrhages, needing blood to survive and move from one stage of life to another.

Ticks find their host by detecting host's breath and body odors, or by sensing body heat, moisture and vibrations. Ticks stay in place until they are completely engorged. Their weight may increase by 2 to 6 times as compared to their weight before they started engorging.

Ticks are implicated in the transmission of a number of infections caused by pathogens such as bacteria, viruses and protozoa. Some major diseases transmitted by ticks:

Relapsing fever – tularemia – Lyme disease – babesiosis – meningoencephalitis – Crimean Congo hemorrhagic fever – Rocky Mountain spotted fever – Boutonneuse fever – Siberian tick typhus.

Fasciolosis : Fasciolosis caused by *Fasciola* spp. in cattle, sheep and goat or other ruminants is a disease characterized by damage to the liver, anemia, weight loss and sudden death. This disease is found in temporary areas and is a zoonotic disease, and humans are severely affected as accidental hosts.

Trichostrongylosis: Trichostrongylid parasites are small, hair-like worms, the alimentary tract of animals, birds and humans. These parasites are especially common and pathogenic in grazing animals, but horses, pigs, birds and humans are also important species. Although trichostrongylus infections are often asymptomatic, when present in large numbers (1000-10000 or more) these parasites are capable of producing protracted and debilitating watery diarrhea, especially in stressed or malnourished ruminants (cattle, sheep, goat)

Lungworm disease : Several species of lungworm parasites occur in ruminants in the world. They live primarily in the trachea, large bronchi, bronchioles or alveoli of the lung. Usually animals infected with lungworms show no clinical symptoms, but heavy burdens reduce the general health problems.

Human taeniosis: There are two members of *Taenia* species that are clinical significance to humans, *T. saginata* and *T. solium*.

The beef tapeworm, *T. saginata* is one of longest human parasites, capable growing to 10 m, and it lives in small intestine. The human infection of *T. saginata* occurs following ingestion raw/uncooked cattle meat contaminated with the cysticercus larva.

Nondescript symptoms, such as diarrhea, abdominal pain, change in appetite, and slight weight loss, may be experienced by *T. saginata* infected humans.

Taenia solium is an other tapeworm of humans, and is disturbed throughout the world and consider with raising of pigs. The human infection of *T. solium* occurs following ingestion raw/uncooked cattle meat contaminated with the cysticercus larva.

Larval tapeworm / Cyst Hydatidosis / Echinococcosis : The hydatid cyst larva stage of *Echinococcus granulosus* is found in sheep, cattle, goat, horse, pig, deer, camel, and accidentally in human.

Echinococcus granulosus, a parasite of dogs and wild carnivores, is found in the small intestine, and one of the smallest tapeworms, measuring about 3-5mm in length.

Hydatid cyst disease is primarily found in areas where sheep or other herbivores are raised (or are common) and such animals are in close contact with dogs and other wild carnivores.

The main infection route involves human and other mammals ingestion of contaminated with eggs eating of foods or drinking of water.

As the cyst continues to grow and expand, necrosis of the infected tissue, accompanied by a build up of pressure on such tissue, usually result. Rupture of a cyst may also occur naturally and the patient may also die. The cyst fluid that emerges from the rupturing cyst, has the capability of spreading on other sides and may be reason anaphylactic shock in the patient.

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Roundworm disease / Toxocariosis / Visceral Larva Migrans :The Visceral Larva Migrans (VLM) in human,was originally applied to invasion of the visceral tissue and organs of an animal and human by larva of parasites whose natural hosts were other animals. It has now, in coming usage, come to present this type invasion in human alone, and, in particular , by the larva of *Toxocara canis*, *T.cati*,*T. vitulorum* are roundworms of dogs,cats and cattle, respectively. Adult worms live in the intestinal canal of their hosts.

Roundworm infections in humans :

The zoonotic problem arise when the infective roundworm eggs are ingested by atypical or suboptimal hosts, such as human. When human swallow infected parasites eggs, larva can develop diseases known as VLM, OLM (ocular larva migrans) and NLM (neural larva migrans) , and in humans, larvae never fully mature.

The tissue more often effected are liver, lungs,brain and eyes. The damage caused by migrating larvae is permanent and can result in severe visual, respiratory and neurological conditions.

Roundworm infections in animals :

The damage due to roundworms is is most often seen in young animals.Puppies can be infected with *T.canis* before they are born, through the mother's milk, or by ingestion infected eggs.