GIARDIASIS (lambliasis)

Epidemiology: **It has worldwide distribution. It is the most frequent protozoan intestinal disease in the US and the most common identified cause of water-borne disease associated with breakdown of water purification systems, outdoors man ship, travel to endemic areas (Russia, India, and middle east, etc.)**

Morphology:

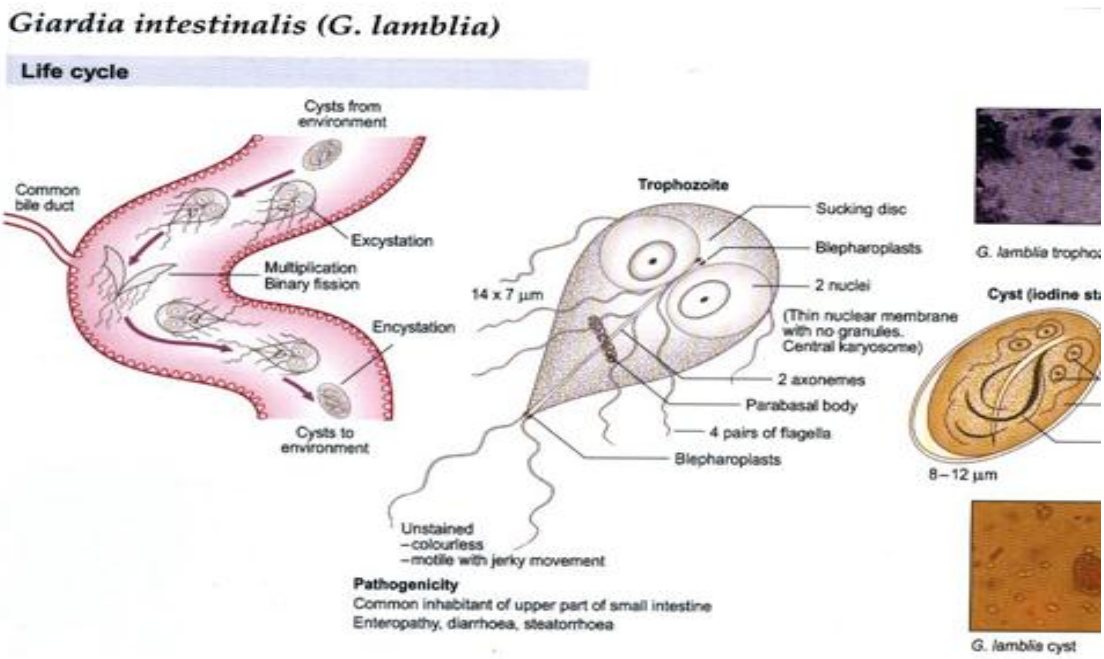
Trophozoite: **It is12-15 µ, half pear shaped with 8 flagella and, 2 axostyles arranged in a bilateral symmetry. There are two anteriorly located large suction discs. The cytoplasm contains two 2 nuclei and two parabasal bodies**

Cyst: Giardia cysts are 9-12 µ ellipsoidal body with smooth well-defined wall. The cytoplasm contains 4 nuclei and many structures of trophozote.

Life cycle Infection occurs by ingestion of cysts, usually in contaminated water. Decystation occurs in duodenum and trophozoites (trophs) colonize the upper small intestine where they may swim freely or attach to the sub-mucosal epithelium via the ventral suction disc.

The free trophozoites encyst as they move down stream and mitosis takes place during the encystment.

The cysts are passed in the stool. Man is the primary host although ,pigs and monkeys are also infected and serve as reservoirs



Symptoms: The early symptoms include flatulence, abdominal distension, nausea and foul-smelling bulky, explosive, often watery, diarrhea. The stool contains excessive lipids but very rarely any blood or necrotic tissue. The more chronic stage is associated with vitamin B_{12} malabsorption, disaccharidase deficiency and lactose intolerance.

Pathology: Covering of the epithelium by the trophozoite and flattening of the mucosal surface results in malabsorption of nutrients.

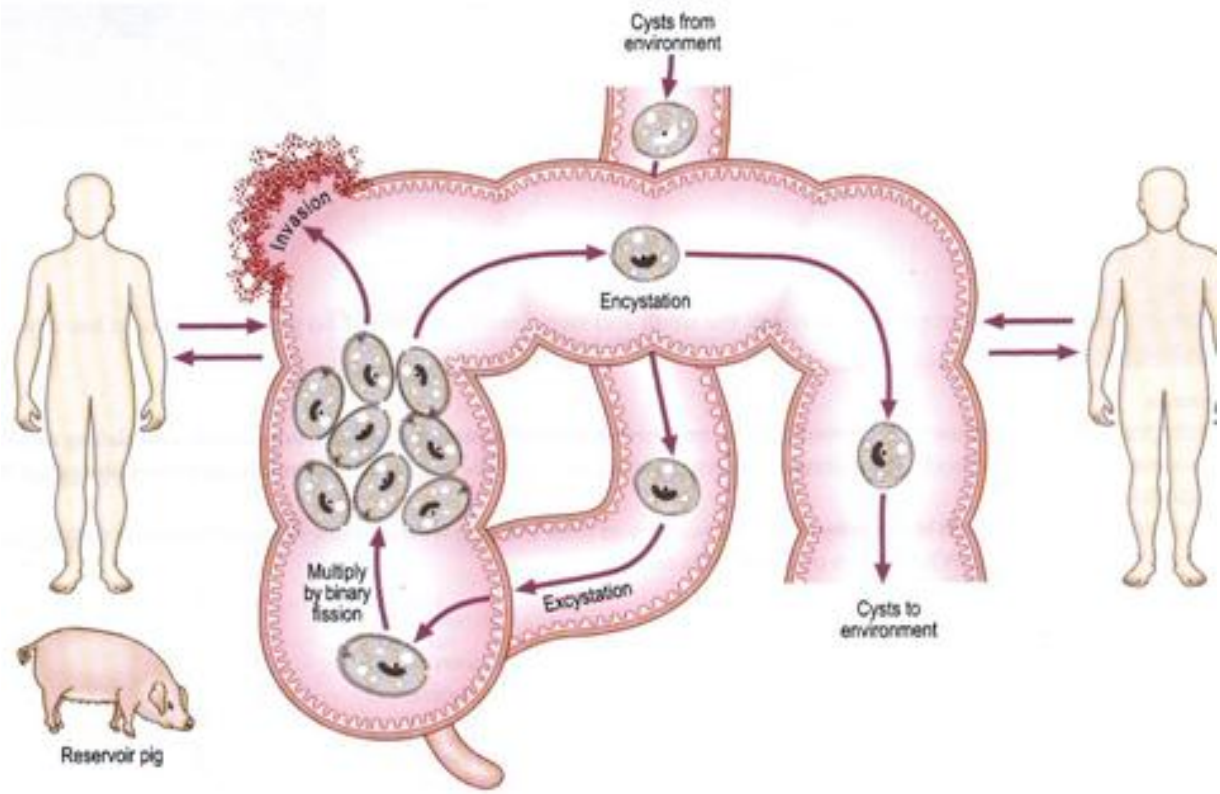
Immunology: Some role for IgA and IgM. Increased incidence in immunodeficiency (*e.g.* AIDS).

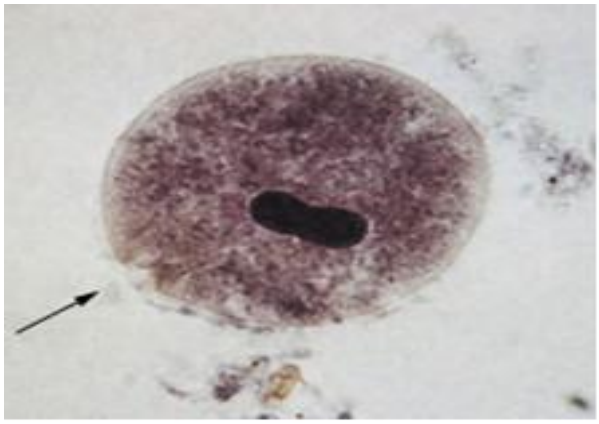
Diagnosis: Symptoms, history, epidemiology. Distinct from other dysentery due to lack of blood in the stool, lack of PMN leukocytes in the stool and lack of high fever. Trophs must be distinguished from the nonpathogenic flagellate *Trichomonas hominis*, an asymmetrical flagellate with an undulating membrane.

Treatment: Metronidazole (Flagell) is effective drugs .

Blanatidium coli **and *Cryptosporidium (parvum)* are both zoonotic protozoan intestinal infections with some health significance. *Isospora belli* is an opportunistic human parasite.**

***B. coli*: This is a parasite primarily of cows, pigs and horses. The organism is a large (100x60 µ) ciliate with a macro and a micronucleus (Figure 8). The infection occurs primarily in farm workers and other rural dwellers by ingestion of cysts in fecal material of farm animals. Man to man transmission is rare but possible. Symptoms and pathogenesis of balantidiasis are similar to those seen in entamebiasis, including intestinal epithelial erosion. However, liver, lung and brain abscesses are not seen. Metronidazole and iodoquinol are effective.**





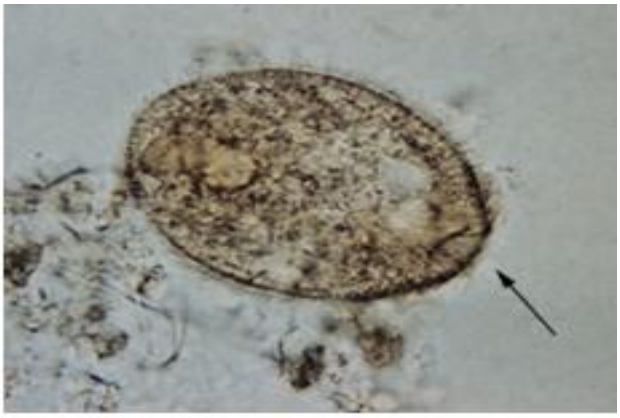
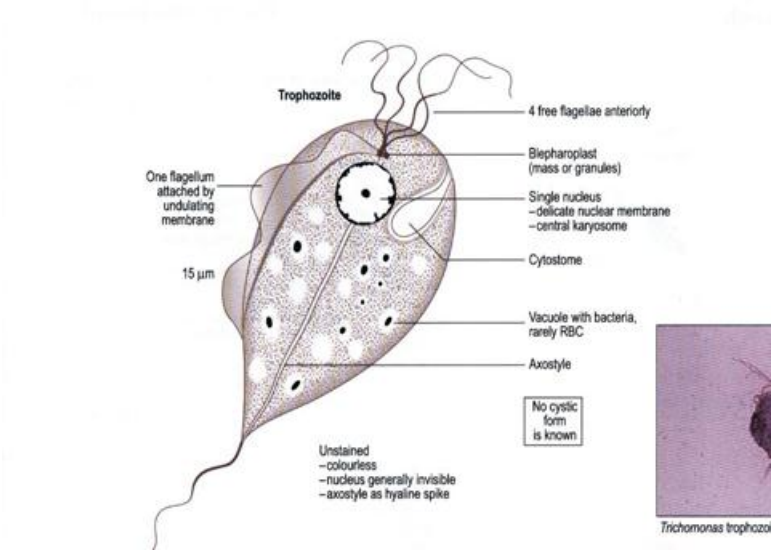


Figure 8 - Balantidium coli trophozoites. These are characterized by: their large size (40 µm to more than 70 µm) the presence of cilia on the cell surface - particularly visible in (B) a cytostome (arrows) a bean shaped macronucleus which is often visible - see (A), and a smaller, less conspicuous micronucleus CDC

Trichomonas vaginalis (flagellate)

Epidemiology: It has a world-wide distribution; as low as 5% in normal females and as high as 70% among prostitutes and prison inmates.

Morphology: Trophozoite: 15-18 µ, half pear shaped with a single nucleus, 4 anterior flagella and a lateral flagellum attached by an undulating membrane, 2 axostyles arranged asymmetrically **The organism does not encyst, and It is non pathogenic flagllate**



Atrial PROTOZOA TRICHOMONIASIS.

T. vaginal

It is colonizes the vagina of women and the urethra (sometimes prostate) of men. Infection occurs primarily via sexual contact, although non-venereal infections are possible. The organism does not encyst and divides by binary fission which is favored by low acidity (pH>5.9; normal: 3.5-4.5). No non-human reservoir.

Symptoms: ***T. vaginalis*** **infection is rarely symptomatic in men, although it may cause mild urethritis or occasionally prostatitis. In women, it is often asymptomatic, but heavy infections in high pH environment may cause mild to severe vaginitis with copious foul-smelling yellowish, sometimes frothy discharge.**

Life cycle: ***T. vaginalis*** **colonizes the vagina of women and the urethra (sometimes prostate) of men. Infection occurs primarily via sexual contact, although non-venereal infections are possible. The organism does not encyst and divides by binary fission which is favored by low acidity (pH>5.9; normal: 3.5-4.5). No non-human reservoir.**

Diagnosis:-

To diagnose Trichomoniasis , a health care provider must perform a physical examination and laboratory test (microscopic examination).

In women, a pelvic examination can reveal small red ulcerations on the vaginal wall or cervix Specimens Suitable clinical specimens include , vagina endo cervical smear

Treatment:

Metronidazole (although teratogenic) is effective in both males and females.

Vinegar douche may be useful.

Personal hygiene and use of condom are helpful.