Entamoeba histolytica infections and their complications

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Entamoeba histolytica is the causative agent of amebiasis. 10% world population is infected with Entamoeba histolytica/dispar. Majority is infected with non invasive E. dispar. 90% infections are asymptomatic, 10% is symptomatic. According to the WHO, amebiasis is the third leading cause of death due to parasitic disease. There are two forms; cyst and trophozoite. Infective form is the cyst the transmission route is faeco-oral route, rarely anal inoculation can be seen, hands are the main route of transmission arthropods can also be responsible of transmission. E. histolytica is acquired when infective cysts are ingested through contaminated food or water. The cysts are resistant to environmental conditions. Trophozoite is the living form which is responsible of the diseases. Clinical forms of amoebiasis are: (1). intestinal amoebiasis (2). extra intestinal amoebiasis which can be; (i) hepatic (ii) pulmonary (iii) cerebral (iv) genito urinary. Pathogenesis; the trophozoites are released into the terminal ileum and from there parasites migrate to the colon where they colonize the mucus layer via binding to host mucin oligosaccharides with amoeba surface adhesine, the Galactose/N-acetyl Galactosamine inhibitable lectin (Gal-lectin). After adhering to epithelial cells the trophozoites resolve the mucosa epithelial cells, cause ulceration and they invade the mucosa cause dysentery (diarhea + blood), may spread via blood and lymphatic system which can cause abscess extra-intestinal in sites. In intestinal amoebiasis; the incubation period is 2-6 weeks clinical manifestations; grumbling abdominal pain, two or more unformed stools/day, periods of diarrhoea alternating with constipation, mucous and or blood mixed stool/ offensive odour, tenderness in lower abdominal region, tenesmus and fever, uncommon (% 33). Complications; toxic megacolon, after wrong treatment with steroids, amoeboma (rare) can be mis-diagnosed as cancer, acute fulminant colitis, peri anal ulceration, stricture and intussusceptions and peritonitis. In the pathogenesis of extra intestinal amoebaisis; the trophozoites invade into portal system and they reach the liver. Neutrophils infiltrate into liver, they lyse on contact with amoeba and release of neutrophil toxin causes damage to the liver parenchyma. This causes necrosis of parenchyma and abscess formation filled with chocolate brown pus, usually the abscess forms in postero-superior quadrant of the right lobe of liver. The leading symptoms are right upper quadrant pain and fever. Discomfort and tenderness in right hypochondrium. Pain in right shoulder. Swinging temperature and sweating. Cough, malaise, and loss of appetite, jaundice is uncommon. Complications are: pleural effusion, hepatobronchial fistula, left lobe abscess may rupture into peritoneal cavity, pleural space or pericardial cavity. Diagnosis; should be differentiated from non-pathogenic amoeba, direct stool examination may reveal motile amoeba, must be stained with permanent stains like trichrome stain, stool antigen test is a reliable test. Molecular typing is the most reliable test, but expensive.
Treatment: for asymptomatic infections; iodoquinol, paromomycin, or diloxanide furoate can be used which will limit the spread of cysts. For symptomatic intestinal disease, or extra intestinal, infections metronidazole or tinidazole would be the drug of choice should immediately followed by treatment with iodoquinol, paromomycin, or diloxanide furoate. Prevention and control of the disease; diagnose and treat patients, wash hands with soap and water at least 10 seconds after using toilet or changing baby diaper, clean bathroom and toilets often, avoid sharing towels, avoid eating raw vegetables, wash them well, boil water or treat with iodine tablets or filter (0.22 filtration), prevent food contamination with stool.

References: