PULSUS
WWW.PULSUS.COM

Helieh S Oz

UK Medical Center, USA

Neglected opportunistic diseases of disparity: Chagas and toxoplasmosis commonality, sexual to congenital transmission and therapeutic modalities

Chagas disease burdens millions of people in Latin America (22% congenital) and threatens those in Southern States and California as an emerging disease in USA *Trypanosoma Cruzi* (*T. Cruzi*) is important cause of gastrointestinal and cardiovascular disease. It is transmitted by *Triatoma* vector, congenital and sexual or via blood transfusion. Acute infectious inflammatory disease is accompanied by a chronic asymptomatic stage; however, 20% to 40% of infected individuals ultimately develop chronic cardiomyopathy and megacolon due to immunosuppression or aging. Center for Disease Control (CDC) reports Chagas as a hidden public health risk with over 300,000 people living in U.S.A borders (>30,000 in Los Angeles) to be infected with *T. cruzi*. Amongst 2000 cardiac surgeries in Houston, TX 0.05% cases and 2.7% of Hispanic patients were found to be infected mostly due to contaminated blood transfusion. In Brazil about 5% of HIV patients had a coinfection with *T. Cruzi*. Chagas coinfection in AIDS/HIV patients manifests as central nervous system involvement which is detected mostly after death. Toxoplasmosis is another opportunistic organism with an estimated 1.5 billion people globally predicted to be infected. Toxoplasmosis is one of the most important congenital disorders, inflammatory syndromes as well as foodborne illnesses and hospitalization. *Toxoplasma* is transmitted by contaminated food and animal products (cysts form), water, fruits, vegetables (oocysts), maternally or sexually acquired through semen (tachyzoites). Toxoplasmosis is also a neglected disease of poverty and prominent in rural areas. Similar to *T. Cruzi*, *Toxoplasma* causes a complex immune-inflammatory reaction in vital organs with the surge of chemokines and cytokines. Subsequent acute phase, the organisms lodge in cyst forms predominantly in muscles and CNS awaiting reactivation due to immunosuppression or AIDS/HIV. *Toxoplasma* infects all nucleated cells with a specific tropism for central nervous system and a mind altering, psycho-behavior and fatal attraction. *Toxoplasma* impairs neurons responsible for instinct defensive and judgment behaviors adjacent to limbic regions of sexual desire. Pregnant mom with newly acquired acute or reactivated toxoplasmosis transmits organism via placenta to her fetus with grave life threatening consequences. Current available therapies are inefficient or have severe side effects in congenital and chronic toxoplasmosis. There is an urgent need for safe and effective therapeutic modalities against toxoplasmosis as well as possible effective vaccines to eliminate the infectious agents in definitive host. This presentation will include some of the speaker's investigations in the field as well as transmission, immunomodulation, and pathogenesis of Chagas and toxoplasmosis; to discuss current available treatments in practice, and to explore experimental therapies for potential future clinical trials.

Biography

Helieh S Oz has DVM, MS (U IL); PhD (U MN) and clinical translational research certificate (UK Med Center). She is an active member of American Association of Gastroenterology (AGA) and AGA Fellow (AGAF). She is a Microbiologist with expertise in infectious and inflammatory diseases, drug discoveries, pathogenesis, innate/mucosal immunity, molecular biology, and micronutrient. She has over 90 publications in areas of chronic inflammatory disorders (e.g. pancreatitis, hepatitis, colitis), and infectious diseases (e.g., Toxoplasmosis, Trypanosomasis, Babesiosis, *Pneumocystis* pneumonia). She has served as Lead Editor for special issues, gut inflammatory, infectious diseases and nutrition (*Mediators Inflammation 2017*); nutrients, infectious/inflammatory diseases (*Nutrients 2017*); Gastrointestinal inflammation and repair: Role of microbiome, infection, nutrition (*Gastroenterology Research Practice 2016*), and Co-Editor for parasitic infections in pediatric clinical practice (*J. Pediatric Infectious Disease*) and Member of Editorial Board and avid reviewer for several peer-reviewed journals.

hoz2@email.uky.edu