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Mind bugging, behavior altering, schizophrenic personality: Toxoplasma in charge

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Statement of the Problem: Toxoplasma a ubiquitous organism is one of the most important sources of congenital infection and foodborne diseases. An estimated 1.5 billion people are globally infected frequently with unknown lifelong health complications. Organisms cause severe immune-inflammatory reaction in vital organs with the surge of chemokines and cytokines. Following acute phase, the organisms lodge in cyst forms predominantly in brain and muscles for the life pending to become reactivated by immunosuppression. Organisms are transmitted mainly by consumption of contaminated animal products (meat, milk and dairy) with cysts, congenital and breast feed from actively infected mom, organ transplantation or by sexual transmission. Cats are only definitive host which can release environmental resistance forms (oocysts) in feces which contaminate vegetations and water and orally taken to infect humans and animals. Toxoplasmosis in congenital infection or immunodeficient individuals is manifested with growth retardation, encephalomyelitis, intracranial calcifications, hydrocephalus, neurological, mental illnesses, and seizures, retinochoroiditis, visual and auditory inflammatory disorders, cardiovascular abnormalities, gastroenteritis, myositis and pain. Toxoplasma is a neurotropic organism which bypasses brain barrier to infect neurons and glial cells and to cause mild to severe behavioral modifications. Recent studies reveal a mind alteration and sexual attraction in Toxoplasma infected subjects including schizophrenic behaviors in animals as well as humans. As, fearless infected rodents seek cats are eaten up to keep the sexual life cycle continued. Toxoplasma impairs the limbic brain neurons responsible for instinct defensive behavior and judgment activity adjacent to limbic regions of sexual desire. Yet there is no safe and effective approved therapy for congenital and chronic infection or a vaccine available to prevent toxoplasmosis. Different aspects of maternal and fetal toxoplasmosis will be discussed including neuroinflammatory and behavioral alteration.

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5. Oz HS, Tobin T. (2014) Diclazuril Protects Against Maternal Gastrointestinal Syndrome and Congenital Toxoplasmosis. *International J Clinical Medicine special issue Treatment of Liver Diseases*, 5, 93-101, Online January 2014 <http://dx.doi.org/10.4236/ijcm.2014.53017> (<http://www.scirp.org/journal/ijcm>) PMID: 24851194
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7. Oz HS. (2014) Fetal and Maternal Toxoplasmosis, Book Chapter 1 in "Recent Advances in Toxoplasmosis Research" CM Lee (Ed) Nova Science Publication, New York pp1-33. Website: <http://www.Novapublishers.com>

Biography

Helieh S. Oz has DVM, MS (U. Illinois); PhD (U. Minnesota) and clinical translational Research (CCTS, UK) certificate. Dr. Oz is a scientist with expertise in inflammatory and infectious disease, immune-modulations, pathogenesis, innate and mucosal immunity, cytokines, chemokines and receptors' modifications, inflammatory and neuropathic pain and behavioral modifications, ROS, micronutrient, gastrointestinal complications and drug discoveries. Guest and lead Editor for Special Issues in journals: *Nutrients* (infectious and inflammatory Diseases); *Antioxidants* (Antioxidants, Microbiome and Gut Health), *Canadian J Infectious Diseases and Medical Microbiology* (Environmental Health – How Does It Relate to Parasites?); *Gastroenterology Research and Practice* (Gastrointestinal Inflammation and Repair: Role of Microbiome, Infection, and Nutrition), *Mediators of Inflammation* (Inflammatory, Infectious and Nutrition).

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