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Urgency for appropriate preventives to abolish Coccidiosis and Toxoplasmosis endemic: Never ending dilemma and possible alternatives

Apicomplexan are sophisticated cosmopolitan organisms to include *Toxoplasma* and *Coccidia* which cause important infectious foodborne diseases in humans and animals. *Toxoplasma* is ubiquitous and invades every nucleated cells and organs with severe life threatening systemic inflammation in fetal, neonatal and immune-compromised individuals. Coccidias are highly host specific mainly lodge in gut mucosa and compromise immune system to trigger gastrointestinal inflammatory complications and infectious diarrhea. Similarly, *Toxoplasma* sexual stage is specific in defensive host to cat gut mucosa, with coccidian life cycle. Over century after their discovery, yet there is no safe and effective preventive measure or vaccines available. Coccidosis is one of the most important communicable pathogenic diseases resulting in morbidity and mortality in food animal industry. The common practice includes the use of antibiotic additives in poultry and livestock diets which contaminate eggs, milk, bones and meat production. Antibiotics can enter the food chain and consumed by humans with possible allergic, antibiotic resistance, and other yet unknown side effects. For instance, robust and balance gut microbiota are required to support health and growth. Application of continuous antibiotics can alter this delicate balance in digestive tract to promote dysbiosis and the state of disease. The annual cost of coccidiosis in poultry production alone has been estimated $800 million in USA. There is an urgent need for appropriate preventives to abolish Coccidiosis and Toxoplasmosis endemic. This workshop presentation will scrutinize Toxoplasmosis and Coccidiosis and novel therapeutics and possible preventive modalities including altered aberrant organisms which are proven nonpathogenic in immunosuppressed yet immunogenic in immune-intact animals as a model to protect against the infectious disease.

Speaker Biography

Helieh S Oz has DVM, and MS (U. IL); PhD (U. MN) and clinical translational research certificate (U. KY Med Center). Dr Oz is an active member of American Association of Gastroenterology (AGA) and AGA Fellow (AGAF). Dr Oz is Microbiologist scientist with expertise in infectious and inflammatory diseases, drug discoveries, pathogenesis, innate and mucosal Immunity, molecular biology, and micronutrient. Dr Oz has over 90 publications in areas of chronic inflammatory disorders (e.g. pancreatitis, hepatitis, colitis), microbial and infectious diseases (e.g. Toxoplasmosis, Trypanosomasis, Babesiosis, Coccidiosis, *Pneumocystis* pneumonia). She has served as Lead editor for special issues including Gut Inflammatory, Infectious diseases and Nutrition 2017 (Mediators of Inflammation); Nutrients, Infectious and Inflammatory Diseases 2017 (Nutrients); Gastrointestinal Inflammation and Repair: Role of Microbiome, Infection, Nutrition 2016 (Gastroenterology Research Practice), and co-editor for Parasitic infections in pediatric clinical practice 2017 (J Pediatric Infectious Disease), Chagas Disease, Intech Open Science 2017 and member of different advisory committees.

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