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Implication of Artemisinin Nematocidal activity on experimental Trichinellosis: *In vitro and In vivo* studies

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Introduction: Benzimidazole drugs are used for treatment of trichinellosis, but they have a limited effect against encapsulated larval stages of Trichinella spiralis. Hence, there is a considerable interest in developing new anthelmintic drugs.

Aim: Our aim is to investigate the possible effect of artemisinin on T. spiralis in *in-vitro* and *in-vivo* studies.

Materials & Methods: T. spiralis worms were isolated from infected mice and transferred to 3 culture media; group I: with no drugs, group II: contained artemisinin and group III: contained mebendazole, then they were subjected to electron microscopic study. An *in-vivo* study was done where mice were divided into three groups; group I: infected and untreated, group II: received artemisinin and group III: received mebendazole. The efficacy of treatment was assessed by adult and total larval counts, histopathological study of the small intestinal and muscle tissues and immunohistochemical staining of cyclooxygenase-2 (COX-2) and vascular endothelial growth factor (VEGF) in muscles. Adult worm teguments showed significant degeneration and destruction with both drugs. Also, significant reduction of total adult and larval counts occurred in treated groups in comparison to the control group.

Results: Histopathological examination of the small intestine and muscles showed marked improvement with reduction in the inflammatory infiltrates with both drugs. COX-2 and VEGF expressions were reduced in both treated groups with more reduction in the artemisinin-treated group. This study revealed that artemisinin has the potential to be an alternative drug against trichinellosis.

Biography

Dina Moustafa Abou Rayia has completed her PhD from Tanta University, Egypt and her Post-doctoral studies from Institute Pasteur, Paris. She is a Fulbright-alumni from Indiana University, School of Public Health, USA. She is an Assistant Professor of Medical Parasitology Faculty of Medicine, Egypt. She is a member of the Francophonie Agency, Alexandria Branch, Egypt. She has a lot of internationally published articles.

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