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Identification of the antimalarial artemisinin-naphthoquine phosphate as effective therapeutic combination against *Schistosoma haematobium*

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Schistosomiasis is a parasitic disease of public health significance in tropical and subtropical regions. *Schistosoma haematobium* and *S. mansoni* endemic areas are largely overlapped. As, praziquantel is the drug of choice against all human schistosomes, drug resistance is a disquiet. Artemisinin-naphthoquine phosphate combination (CO-ArNp), which is one of the artemisinin-based combination therapy recommended by the WHO as a gold standard treatment for malaria, was recently reported to be a promising therapy against *S. mansoni*. In this work, we assessed the *in vitro* activity of CO-ArNp on adult *S. haematobium*, and examined tegumental alterations by means of scanning electron microscopy (SEM), to detect if this drug combination has a broad spectrum antischistosomal effect. Worms were incubated using CO-ArNp over a concentration range of 1–40 µg/ml. Exposure of adult *S. haematobium* for 24 h to a medium containing 20 µg/ml CO-ArNp reduced worm motor activity, induced tegumental alterations within 48 h and killed all worms within 72 h. SEM observations revealed extensive tegumental changes, including swelling, shrinking, perforation and sloughing with exposure of the sub-tegumental tissues, particularly on the tegument of male worms. Our results, along with the well known good pharmacokinetics and safety of CO-ArNp, may potentiate the use of this novel broad-spectrum antischistosomal drug candidate in overlapping endemic areas.

Biography

Samar N El-Beshbishi has completed her PhD from Faculty of Medicine, Mansoura University, Egypt and Postdoctoral studies from University of Texas Medical Branch, Galveston, Texas-USA. She is Professor of Medical Parasitology, Faculty of Medicine, Mansoura University, Egypt. She has published more than 25 papers in reputed journals and has been serving as an Editorial Board Member and Reviewer of repute.

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