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The effect of iron on Metronidazole activity against *Trichomonas vaginalis* *in vitro*

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Metronidazole is administered in an inactive form then activated to its cytotoxic form, within the hydrogenosome of trichomonads. Two hydrogenosomal proteins, pyruvate ferredoxin oxidoreductase PFOR and ferredoxin play a critical role in the reductive activation of metronidazole. The expression of these proteins and other hydrogenosomal proteins are likewise positively regulated by iron. In the present study, the effects of iron on minimal lethal concentration (MLC) of metronidazole that affect *in vitro* cultured *Trichomonas vaginalis* isolates were investigated. Interestingly, addition of ferrous ammonium sulfate (FAS) to *T. vaginalis* culture led to decrease the MLC of metronidazole. On using aerobic assay, MLC of metronidazole on untreated *T. vaginalis* of both isolates was 12.5 µg per ml that decreased to 0.38 µg per ml on FAS treated trichomonads. Also anaerobic assay revealed that MLC on untreated parasites was 3.12 µg/ml that was decreased to 0.097 µg/ml and 0.19 µg/ml for isolate 1 and 2 respectively, after iron addition. It was concluded that the addition of iron to *in vitro* cultured *Trichomonas vaginalis* decreases metronidazole MLC; that was detected by aerobic and anaerobic assays. Reduction of the drug effective dose is useful in reduction of the side effects that mostly appear with the higher doses.

Biography

Hala Salah Elwakil has completed her MD in Medical Parasitology from Faculty of Medicine, Ain Shams University, Egypt. She is a Professor of Medical Parasitology, Faculty of Medicine, Ain Shams University and Director of Parasitological Research & Diagnostic Unit. She has published 25 papers in reputed journals concerning diagnosis and immunology in Medical Parasitology. She has been serving as a Reviewer for some international journals.

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