Antigiardiais Effects of New Metronidazole Derivatives on Trophozoites in TYI-S-33

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Giardia is a flagellate protozoan with worldwide distribution that causes significant gastrointestinal diseases. The life cycle of the organism alternates between the active, proliferating trophozoite and the dormant cyst. 5-Nitroimidazoles have been used extensively in the treatment of amoebiasis, giardiasis, and trichomoniasis.

We have synthesized some new analogues of metronidazole containing a phenyl or cyclohexanol ring in the side chain of the imidazole ring, and evaluated their antigiardiasis activity on giardia cyst. In the present study, we evaluated their activity against trophozoites of the parasite.

For this purpose TYI-S-33 media was used and their MIC were compared with metronidazole and DMSO as positive and negative controls, respectively.

The results showed that the new compounds had desirable antigiardiasis activities. Analogues which contain phenyl group in their structure are more active than those which contain cyclohexanol moiety. Although all the new compounds had higher MIC than metronidazole but their antigiardiasis activity were comparable to metronidazole and they may prove good alternatives for metronidazole.

\textbf{Keywords}: Giardiasis; Metronidazole; Trophozoite.