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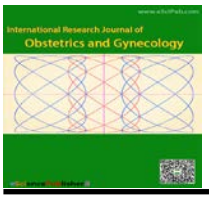

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Anti-proliferative Activity of Lauric Acid in the Protista *Trichomonas Vaginalis*

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ABSTRACT

Introduction:Trichomonas vaginalis is the etiologic agent of trichomoniasis, a sexually transmitted infection associated with infertility, gestational complications, predisposition to cervical and prostate cancer, and increased risk of human immunodeficiency virus (HIV) transmission and infection. Metronidazole, the only drug available for treating, has dubious efficacy, high toxicity, it is contraindicated in first trimester of pregnancy and drug-resistant cases are increasing. Thus, there is an urgent need for the development of alternative strategies to combat trichomoniasis. In this context, lauric acid or dodecanoic acid, a fatty acid found in breast milk, coconut milk and coconut oil, has been used as an antimicrobial and antiparasitic compound. Aim: To evaluate the anti-proliferative effect of lauric acid on T. vaginalis. Methodology: Parasites were axenically cultured in TYM medium (Tryptone - Yeast Extract - Maltose) supplemented with bovine fetal serum and antibiotics for 28-36h at 37 ° C. Next, 105 parasites were transferred to eppendorf tubes, containing 500 µl of TYM medium with bovine fetal serum and antibiotics, and treated with 20, 50 and 100 µg/mL lauric acid at concentrations of (stock solution: 50 mg/mL) at 37 °C for 24 h. Parasites treated with DMSO and in the absence of lauric acid were used as controls. Cell growth was determined after 24h by direct counting in Neubauer chamber. Results and Discussion: Similar to described in other parasitic microorganisms, our data showed a growth inhibition of 23,27%, 39,57% and 53,53% when the parasites were treated with 20 µg/mL, 50 µg/mL and 100 µg/mL lauric acid, respectively. Conclusion: Lauric acid inhibited the proliferation of T. vaginalis in a dose-dependent manner after 24h of treatment. Further studies are needed to elucidate the action mechanisms of this compound on T. vaginalis.

Keywords: Dodecanoic acid; Lauric acid; Metronidazole; Trichomonas vaginalis; Trichomoniasis

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