

Evaluation of anti-trichomoniasis activity of *Quercusinfectoria* gall and its active constituent, gallic acid

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Abstract

Aim: High rates of sexually transmitted infections (STIs) have been documented among U.S. military servicemembers. *Trichomonas vaginalis* (TV) is likely the most common cause of STI. Treatment options for trichomoniasis are largely limited to nitroimidazole compounds. Since the high incidence of resistant and recurrent trichomoniasis and few alternatives exist in these cases, it is essential to identify and develop new drugs against trichomoniasis. In traditional Persian medicine, the gall of *Quercusinfectoria* has been claimed to eliminate vagina and cervix from excessive discharge. So, the aim of the present study was to evaluate the anti-trichomoniasis activity of ethanolic extract of *Quercusinfectoria* gall as well as its active constituent, gallic acid, against TV.

Methods: In this study, the ethanolic extract of *Quercusinfectoria* gall was obtained by maceration and standardized based on amount of gallic acid. Different concentrations (37.5, 75, 150, 300, 600, and 1200 µl/ml) of *Quercusinfectoria* gall extract and metronidazole (50 µg/ml) were used. The number of parasites in each well plate was counted after 24 and 48h and they compared with the negative control group.

Evaluation of the extract from *Quercusinfectoria* gall anti-trichomoniasis efficacy was done by Calculation of percent of growth inhibition according to the equation: Percent of growth inhibition = $[(a - b)/a] \times 100$ where a = mean number of trophozoites in parasite control tubes and b = mean number of trophozoites in tested tubes

Results: The results demonstrated remarkable activity of ethanolic extract of *Quercusinfectoria* gall against TV with 100 % inhibition of the parasitic growth with concentration of 1200 µg/ml and 600 µg/ml after 24 h and 48 h incubation respectively. Gallic acid demonstrated 100 % inhibition of the parasitic growth with concentration of 256 µg/ml and 512 µg/ml after 24 h and 48 h incubation respectively.

Conclusion: It seems that ethanolic extract of *Quercusinfectoria* gall could inhibit the growth of TV and the gallic acid is not exclusively responsible for antifungal activity of gall extract. Further preclinical and clinical studies are required to confirm the efficacy of this natural extract in trichomoniasis.