The Antimicrobial Effect of Methanol Extracts of Eucalyptus, Satureia Hortensis and Heracleum Glabrescens on Giardia Cysts

Abstract

Background and objectives: Giardiasis is a parasitic infection of small intestine, with a worldwide distribution and the prevalence of Giardia in different parts of the world varies between 1 to 25%. Plants have the vast range of antimicrobial and antifungal activity that can be identified as alternative treatments for bacterial and parasitic pathogens, the same as Giardia. In this study, the methanol extracts of eucalyptus plants, Satureia hortensis and Heracleum glabrescens, on Giardia cysts were studied in vitro.

Material and Methods: The cysts were isolated from the feces using a modified Bingham. After counting by Hemusytumetr, they were placed near by 200 mg/ml, 100 mg/ml and 10 mg/ml of the extracts prepared by DMSO for 30 and 60 minutes. Then, the number of dead and live cysts was counted under a microscope.

Results: the fatality effect of the extracts in 60 minutes is higher than those of 30 minutes. The methanol extracts of Satureia hortensis, Eucalyptus and Heracleum glabrescens with the dilution of 200 mg/ml in 60 mins have the fatality effect of 84/3%, 63/3% and 44%, respectively. The highest fatality(84.3%) on Giardia cysts is related to Satureia hortensis with the dilution of 200 mg/ml in 60 mins and the Lowest(27%) is related to Heracleum glabrescens with the dilution of 10 mg/ml in 30-minute period. The significant relationship between the plant type and the fatality of methanol extracts is observed.

Conclusion: the methanol extracts of Eucalyptus, Heracleum glabrescens and especially Satureia hortensis have anti-parasitic effects in the laboratory conditions. Thus, they can be used in the future, instead of the chemical antiparasitic drugs.

Key words: Giardia lamblia cysts, Eucalyptus, Satureia hortensis, Heracleum glabrescens, Tonekabon