

The antibacterial effects of 20 herbal plants on methicillin resistant and sensitive s.aureus in Golestan province

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Abstract

Background&Objective: Staphylococcus aureus is an important cause of community and hospital-acquired infections. Caused by methicillin or oxacillin-resistant s.aureus (MRSA) are mainly nosocomial and are increasingly from many countries worldwide. Many attempts have been made by the researchers to find new compounds as a substitute for these antibiotics. The aim of this study was to investigate the antimicrobial activity of alcoholic extracts of 20 medicinal plant species of Golestan province on clinical and standard strains of MRSA and MSSA and compare and detect the best medicinal plant.

Materials&Methods: In this study the compounds of the plant were extracted by percolation method and the effect of ethanolic extract of 20 Iranian medicinal plants against methicillin resistant and methicillin sensitive strains were assessed by disc diffusion method and each test was repeated 3 times and mean inhibition zone was recorded and then, the minimum inhibitory concentration (MIC) of the extracts, that show good inhibition zone in disc diffusion method, was determined by the micro broth dilution method.

Results: The results of antibacterial activity of the ethanolic extracts of 20 plants revealed that, the ethanolic extracts of 8 plants have the best effect on strains and the maximum mean inhibition zone was 22.4 mm and the lowest MIC of plants was 0.01 mg/ml.

Conclusion: The result of this study indicates that, ethanolic extract of Eucalyptus. Global, Peganum.hermla, Punica.granatum, Berberis.vulgaris, Tamarixaphylla, Nigella.sativa, Hypericum.perforatum AND, Artemisia. Herbaalba have the best antibacterial effect against MRSA andMSSA. The result obtained from these plants might be considered sufficient for further study.

Key Words: Antibacterial effect, Staphylococcus aureus, Medicinal plant, Ethanolic extract