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Title: Antibacterial Activity of Hydro-alcoholic Extract of Urtica dioica

Abstract: Urtica dioica, is a herbaceous perennial flowering plant, native in Europe, Asia, northern Africa, and North America, and is the best-known member of the nettle genus Urtica. This plant has many hollow stinging hairs called trichomes on its leaves and stems, which act like hypodermic needles that inject histamine and other chemicals that produce a stinging sensation when contacted by humans and other animals. This plant has a long history of use as a medicine and as a food source. This study was conducted to examine in vitro anti-bacterial potential of methanolic and ethanolic extract of U. dioica.

Materials and methods: The inhibitory effect of methanolic and ethanolic extracts of U. dioica was tested against 3 Gram positive: Bacillus cereus, Staphylococcus aureus and S. epidermidis and 5 Gram negative: Salmonella typhi, Klebsiella pneumonia, Escherichia coli, Pseudomonas aeruginosa, and Proteus mirabilis bacterial species by standard disc diffusion method at various concentration from 600 mg/ml to 50 mg/ml. The potential of these extracts in growth inhibition and killing of bacterial species was analysed by susceptibility test (minimum inhibitory concentration and minimum bactericidal concentration).

Result: The extracts of U. dioica were active against: B. cereus, S. aureus, S. epidermidis and E. coli. The zone of inhibition for these species for methanolic extract was 9, 14, 17 mm and about ethanolic extract was 8, 10, 12 mm, respectively. MIC and MBC for S. aureus, E. coli and S. epidermidis for ethanolic extract were 160 mg/ml and 80 mg/ml and for methanolic extract MIC and MBC were 160 mg/ml, 320 mg/ml and 80 mg/ml, respectively.

Conclusion: Based on these results it can be suggested that this plant and its extracts have the potential for using in controlling and treating infections caused by bacterial species such as S. aureus, E. coli and S. epidermidis.

Presentation: Poster