عنوان مقاله:

In Vitro Antibacterial Activity of Ethanolic Extract of Neem Leave (Azadirachtaindica Linn) Against Clinical Isolates

محل انتشار:

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خلاصه مقاله:

Background: Emerging multidrug resistance amongst pathogens is making the choice of antibiotics for the management of infections extremely difficult and threatens the return of the pre-antibiotic era in healthcare settings. To tackle this menace, there is a growing need for exploring bioactive compounds derived from herbal extracts, which could be incorporated as alternative therapeutic agents in the antimicrobial therapy of such infections. Objectives: We evaluated the antibacterial activity of ethanolic extracts of Neem leaves against standard ATCC strains and the pathogens isolated from clinical specimens. Methods: This cross-sectional study was undertaken to assess in vitro antibacterial activity of different concentrations of ethanolic Neem extract against three ATCC (American-type culture collection) strains and ۶۳ clinical isolates using the disk diffusion method. The minimum inhibitory concentration (MIC) of the extract against test isolates was determined by the Broth dilution method. Results: Neem extract exhibited the highest antimicrobial activity toward Escherichia coli ATCC-۲۵۹۲۲ followed by Staphylococcus aureus ATCC-۲۵۹۲۳ and Pseudomonas aeruginosa ATCC-۲۷۸۵۳ strains. Amongst the Gram-positive isolates, the extract exhibited significantly high antibacterial activity against S. aureus and Enterococcus spp. Amongst the Gram-negative isolates, high antibacterial activity was seen against E. coli followed by Klebsiella pneumoniae and Proteus mirabilis. In this study, the lowest MIC values were observed against E. coli followed by S.aureus, P. mirabilis, and K. pneumoniae. The highest MIC values of the extract were observed against non-fermenters, like P. aeruginosa and Acinetobacter spp. isolates. Conclusion: This study strongly depicts that the ethanolic extract of Neem leaves exhibits significant antibacterial activity not only against the standard ATCC strains but also against various clinical isolates

کلمات کلیدی:

Neem tree, Azadirachtaindica, Antibacterial agents, Disk diffusion antimicrobial tests, Broth dilution method, Minimum inhibitory concentration