عنوان مقاله:

Phytochemical Screening and Antibacterial Activities of Aqueous and Alcoholic Extracts of Averrhoa bilimbi Leaf against Bacteria Isolated from Oral Cavity

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خلاصه مقاله:

Medicinal herbs have been used as traditional treatments for many pathogens and extracted bioactive compounds from medicinal plants with a suitable therapeutic index for the production of new drugs. Moreover, they are utilized to evaluate different concentrations of aqueous and alcoholic extracts of Averrhoa bilimbi leaves and antibiotics against bacteria isolated from the oral cavity. This study was conducted simultaneously at the Departments of Botany and Biology, Shatrah Hospital, Thi-Qar, Iraq, during March and August ۲۰۲۱. A. bilimbi leaf extracts were utilized in the plant component examination and the assessment of the antibacterial activity. The bacterial strain of Escherichia coli and Klebsiella pneumoniae was isolated from the oral cavity. To test the antibacterial impact of the extracts on bacteria, the agar well diffusion method was used. The phytochemical screening indicated the presence of Alkaloids, Flavonoids, Sapiens, Steroids, Tannins, Glycosides, and Carbohydrates, followed by the absence of Tannins in aqueous extract. Due to the A. bilimbi leaf aqueous and methanol extract against E. coli, areas of inhibition were found (۰.۲۰ cm and ۰.۱۹ cm) at the concentration of ۱۰۰ mg/ml, respectively. However, there were no regions of inhibition of the K. pneumoniae trend for both extracts. The sensitivity of bacterial isolates of E. coli and K. pneumonia to antibiotics was also tested through Gentamicin, Amoxycillin, Azithromycin, Ciprofloxacin, Penicillin, and Polymyxin B, and the regions of inhibition appeared against E. coli (۰.۵cm, ۰ cm, ۰.۳۴ cm, ۰.۴۵ cm, ۰ cm, and ۰.۱۲ cm, respectively). Furthermore, the regions of inhibition appeared against K. pneumoniae (۳ cm, ۰.۳ cm, ۰.۴ cm, ۰.۵۵ cm, ۰ cm, ۰.۶۶ cm, respectively). The antibiotics showed a higher inhibition zone, compared to the aqueous and alcoholic extracts; however, further studies are required to be conducted to validate its reliability.

کلمات کلیدی:

Antibacterial activity, Averrhoa bilimbi, Escherichia coli, Klebsiella pneumoniae