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In vitro Antifungal Activity of Methanolic Extracts of Eight Various Cultivar of Persian Punica granatum L. against Candida Species

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Abstract : Objective: Resistance of Candida species to antifungal agents has potentially serious implications for management of infections. Candida species are now fourth common organisms isolated from hospitalized patients. It is important to increase effective therapy. In the past decade, numerous reports of treatment failures were reported. Prevention and control of these infections will require new antimicrobial agents. Plant-derived antifungal have always been a source of novel therapeutics. The aim of this study was to investigate the antifungal effect of methanolic extract of pomegranate peel and pulp against Candida species. Material and Methods: Eight cultivars of Punica granatum L. were collected from Saveh Agricultural Investigation Center in Iran. Both pomegranate pulp and peel were dried and powdered separately. The dried powders were extracted by using a soxhlet extractor. The antifungal effect of methanolic extract of pomegranate peel and pulp were determined in vitro by minimum inhibitory concentration (MIC) against five standard species of (ATCC 10231), C. parapsilosis (ATCC 22019), C. tropicalis (ATCC 750), C. glabrata (PTCC 5297), and C. kroseii (PTCC 5295). Results: Maximum inhibitions of antifungal effect were attributed to peel extract pomegranate cultivar and Candida species. The most potential antifungal inhibition among 8 different cultivars observed by sour malas, sour white peel, and sour summer extracts respectively, against five Candida strains. The antifungal activity of pulp extracts against Candida species was approximately negative. Conclusion: The use of Punica granatum peel extract has been shown to possess antifungal activities. The phytochemistry and pharmacological actions of Punica granatum peel components suggest a wide range of clinical applications for the treatment and prevention of candidiasis.

Keywords : antifungal activity, Candida species, Punica granatum L., pharmacognosy
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