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Efficacy of Pomegranate Ingredients in Treatment and Prevention of Diseases

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Dear Editor,

Many people have the tendency to use fruit for disease treatment or protection because it is a safe method. The pomegranate is a remedial fruit. According to the Qur'an, pomegranates grow in the gardens of paradise (1). In traditional Indian medicine, the pomegranate is frequently described as an ingredient in remedies (2). Phytochemicals from fruits such as the pomegranate may inhibit cancer cell proliferation and apoptosis through the modulation of cellular transcription factors and signaling proteins (3). Pomegranate peel extract can partially inhibit the development of colonic premalignant lesions in an azoxymethane-induced colorectal carcinogenesis model, by abrogating oxidative stress and improving the redox status of colonic cells (4). Researchers have indicated the potential use of standardized pomegranate rind extract as a nutraceutical for antibacterial, anti-inflammatory, and anti-allergic proposes (5). Anti-inflammatory (Arachidonate 5-lipoxygenase or 5-LOX) and cytotoxic (MCF-7) activities from flowers of pomegranates have been investigated, and the results of this investigation confirmed that pomegranate flowers are powerful anti-inflammatory and cytotoxic for the inhibition of human breast cancer (6). In another study, researchers demonstrated that pomegranate seed oil is highly relevant regarding osteoporosis. Indeed, it offers promising alternatives in the design of new strategies in nutrition management of age-related bone complications (7). One of the beneficial effects of the fruit rind of pomegranates is treatment of malarial disease, showing that it can have an anti-parasitic activity (8). Evidence to date has suggested it may be prudent to include this fruit juice in a heart-healthy diet, which means that pomegranate juice has potential cardioprotective benefits (9).

Recent medical biochemistry studies have confirmed that most elements and derivations of pomegranates have efficacy in treatment and protection of human body systems. These suitable functions include antibacterial, anti-parasitic, anti-cancer, anti-inflammatory, and anti-allergic aspects.

Footnote

Authors' Contribution: Study concept and design, Sayed Alireza Mirsane and Neda Mirbagher Ajorpaz; acquisition of data, Sayed Alireza Mirsane; analysis and interpretation of data, Shima Shafagh and Sayed Alireza Mirsane; Study supervision, Shima Shafagh.

References

1. Holy Qur'an; Al-Rahman(55). Verse No. 68.
2. Jindal RCS. bark of tree and rind of fruit is commonly used in ayurveda also used for dyeing Recent trends in horticulture in the Himalayas Indus publishing. 2004
3. Adams LS, Seeram NP, Aggarwal BB, Takada Y, Sand D, Heber D. Pomegranate juice, total pomegranate ellagitannins, and punicalagin suppress inflammatory cell signaling in colon cancer cells. *J Agric Food Chem.* 2006;**54**(3):980–5. doi: 10.1021/jf052005r. [PubMed: 16448212].
4. Waly MI, Ali A, Guizani N, Al-Rawahi AS, Farooq SA, Rahman MS. Pomegranate (Punica granatum) peel extract efficacy as a dietary antioxidant against azoxymethane-induced colon cancer in rat. *Asian Pac J Cancer Prev.* 2012;**13**(8):4051–5. [PubMed: 23098515].
5. Panichayupakaranant P, Tewtrakul S, Yuenyongsawad S. Antibacterial, anti-inflammatory and anti-allergic activities of standardised pomegranate rind extract. *Food Chem.* 2010;**123**(2):400–3.
6. Bekir J, Mars M, Vicendo P, Fterrich A, Bouajila J. Chemical composition and antioxidant, anti-inflammatory, and antiproliferation activities of pomegranate (Punica granatum) flowers. *J Med Food.* 2013;**16**(6):544–50. doi: 10.1089/jmf.2012.0275. [PubMed: 23767863].

7. Spilmont M, Leotoing L, Davicco MJ, Lebecque P, Mercier S, Miot-Noirault E, et al. Pomegranate seed oil prevents bone loss in a mice model of osteoporosis, through osteoblastic stimulation, osteoclastic inhibition and decreased inflammatory status. *J Nutr Biochem.* 2013;**24**(11):1840–8. doi: 10.1016/j.jnutbio.2013.04.005. [PubMed: 23953990].
8. Dell'agli M, Galli GV, Bulgari M, Basilico N, Romeo S, Bhattacharya D, et al. Ellagitannins of the fruit rind of pomegranate (Punica granatum) antagonize in vitro the host inflammatory response mechanisms involved in the onset of malaria. *Malar J.* 2010;**9**:208. doi: 10.1186/1475-2875-9-208. [PubMed: 20642847].
9. Basu A, Penugonda K. Pomegranate juice: a heart-healthy fruit juice. *Nutr Rev.* 2009;**67**(1):49–56. doi: 10.1111/j.1753-4887.2008.00133.x. [PubMed: 19146506].