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Abstract

Is There Any Protective Effect of Pomegranate and Tangeretin On The DMBA-Induced Rat Breast Cancer Model? †

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Abstract: The present study investigated the potential chemoprevention effects of Tangeretin (TAN) and Pomegranate (PE), both alone and in combination, on the oxidant-antioxidant status in 7,12-dimethylbenz [a] anthracene (DMBA)-evoked rat mammary carcinogenesis. *F*ifty-six female Sprague Dawley rats were divided into eight groups: Group I was control, Group II, III and IV were treated with pomegranate, tangeretin and pomegranate+tangeretin, respectively. Group V was DMBA-induced breast cancer-bearing rats, Group VI, VII and VIII also received simultaneously pomegranate, tangeretin and pomegranate+tangeretin, respectively, and also received a single dose of DMBA. The levels of malondialdehyde (MDA), as well as antioxidant enzyme activities of catalase (CAT), glutathione peroxidase (GPx) and superoxide dismutase (SOD) were measured in the plasma samples of rats. The plasma MDA level was found statistically significant higher in DMBA group (p = 0.001) and decreased significantly in all chemoprevention groups (p < 0.005). Plasma CAT, GPx, SOD activities were found decreased in Group V respect to control group. However; it was observed increases in whole prophylactic groups in respect to Group V. The most increases were found in Group VIII (for all enzyme activities). It was suggested that combination of Tangeretin and Pomegranate might have protective effect against DMBA-induced oxidative stress in breast cancer-bearing animals.

Keywords: breast cancer; DMBA; pomegranate; tangeretin