

LETTER TO THE EDITOR

Pomegranate Juice is Useful for the Management of Hypertension and the Improvement of Cardiovascular HealthKonstantinos Tziomalos¹, Michael Doulas^{2,3} and Vasilios G. Athyros^{2,*}

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DEAR EDITOR

We thank Prof. Liberopoulos and Dr Barkas you for their letter [1], which helps to enhance the understanding of the message of the associated Editorial.

Price and availability of pomegranate juice (PJ) are indeed two major issues. The daily cost of PJ consumption is ranging from 0.5 to 1 \$ per day, according to the dose used. PJ is available in almost all Western and several Asian countries. PJ is preserved in deep refrigeration and is readily available during the entire year. PJ circulates mainly in two forms: pure juice in 200 to 500 mL bottles (adulteration is practically impossible, because the color and the taste are unique) and in 1 L bottles, blended with purple grape juice without added sugar. The later contains resveratrol, a type of natural phenol and a phytoalexin, found in the skin of red grapes with definite antidiabetic effects and proposed but not proved yet anti-aging and anticancer effects. Resveratrol treatment has shown beneficial effects on glucose and lipid metabolism in some, but not all studies [2,3]. Study population, resveratrol source, and dose vary widely, potentially explaining inconsistency of findings among studies. Enhancement in endothelial function, systolic blood pressure, and markers of oxidative stress and inflammation in several studies have been reported [2,3].

The quantity and calorie intake is not a problem. Most studies (performed by Prof Aviram team) used a 50 mL PJ intake [4], mainly from the “wonderful” variety [5]. The juice has a 10% content of sugar (5 g/d). Thus, calorie intake is not significant. In regard to diabetes mellitus the use of PJ, especially if this is mixed with purple crape juice, substantially reduces blood glucose and the risk of diabetes, and not the other way around [2-5]. As a matter of fact PJ

has more antiatherogenic effects on patients with diabetes than in non-diabetic individuals [4-6].

The studies showing a beneficial effect of PJ on cardiovascular risk factors indeed included a small number of participants, were mostly not double blinded and evaluated only surrogate end-points. This is why we suggest that PJ might be only used as an adjunctive therapy for arterial hypertension (HTN) on top of other non-pharmacological interventions or drug therapy [7], and mainly in patients with HTN and high oxidative burden such as this caused by diabetes, obesity, metabolic syndrome or smoking [7]. This is not a first line therapy and is not suggested for monotherapy [7]. It is unfortunate that up to day there have been no sponsors or grants available to clear this issue once and for all, regardless of the findings, with a large scale, prospective, randomized, controlled survival study in humans.

The effect of PJ on blood pressure is reported by some studies to be as high as a 21% reduction in systolic blood pressure, which is rather sizable reduction [8].

The long term (3-years) effects of PJ on a surrogate endpoint (carotid atherosclerosis) were shown in a clinical study [8]. There were no adverse effects as reported with other antioxidants, such as alpha-tocopherol and beta-carotene [8]. Finally, PJ was shown to have the highest antioxidant potential than any other functional food or supplementary treatment [9].

Common sense suggests that all appropriate pharmacological or non-pharmacological interventions should be implemented for the optimal control of HTN, however, the use of PJ (the other parts of the fruit have no antioxidant actions) could be considered as an adjunctive therapy to improve the control of HTN and the related, mainly cardiovascular, adverse events.

CONFLICT OF INTEREST

The author(s) confirm that this article content has no conflicts of interest.

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