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THE EFFECT OF ZINGIBER OFFICINALE (GINGER) ON HYPERTENSION; A SYSTEMATIC REVIEW OF RANDOMISED CONTROLLED TRIALS

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Background and aims: Zingiber Officinale, commonly known as ginger, has been widely used traditionally in the daily diet and a variety of medicinal purposes. There are some animal studies on the hypotensive mechanism of ginger. The aim of this systematic review was to extract the evidence from all human participant randomized and quasi-randomized controlled trials that have assessed the effects of ginger on the blood pressure (BP) of any population.

Methods: Databases including Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, CINAHL, ISI Web of Science and also local databases including Sid, magiran, iranmedex were searched up to June, 2016 without language limitation. Relevant bibliographies were also searched. Titles and abstracts were assessed independently by two reviewers and full papers of relevant articles were obtained and assessed. Randomized and quasi-randomized controlled trials on humans were enrolled in the review. Data extraction and risk of bias assessment were done by two reviewers independently and in a case of discrepancy final decision was made by the third reviewer. Meta-analysis was not possible because of heterogeneity of data and incomplete reporting of findings, thus results were synthesized narratively.

Results: Initial searches yielded 60 articles. After analyzing full-text papers, 2 Randomized Controlled Trials (RCTs) met the inclusion criteria. A double blind RCT (n=70) compared the effect of ginger with placebo on cardiovascular risk factors in diabetic patients. There was no significant ($p>0.05$) effect on systolic nor diastolic pressure (Mean arterial blood pressure (MABP) changes was 0.1 ± 1.1). A randomized three armed safety trial (n=60) studied the effects of 50 and 100mg/kg ginger and placebo in healthy subjects. 100 mg/kg dose significantly ($p<0.05$) lowered systolic BP from 114.3 ± 3.22 mm Hg to 105.5 ± 3.13 and diastolic BP from 73.3 ± 3.35 mm Hg to 70.5 ± 3.39 mm Hg within two hours.

Conclusion: According to animal studies ginger has the potential to offer a natural alternative dietary supplementation to conventional anti-hypertensive agents, but still there is not enough evidence supporting this claim and current limited evidence is controversial. More human trials studying the effect of ginger on hypertensive patients using different dosage of a standardized extract are needed.