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Health promoting effect of synbiotic yogurt containing pomegranate polyphenols: Scientific evidenceFatemeh Miremadi¹, Frank Sherkat² and Lily Stojanovska¹¹Victoria University, Australia²RMIT University, Australia

Statement of the Problem: The World Health Organization estimates 17.5 million deaths every year from cardiovascular diseases, particularly heart attacks and strokes. A substantial number of these fatalities can be attributed to lipid profile abnormalities, which triples the risk of heart attack in people with hypercholesterolemia, compared to those with normal blood lipid profiles. Various dietary approaches have been employed to alleviate hypercholesterolemia at the population level including the use of probiotics and prebiotics in development of functional foods. The purpose of this study is to evaluate the effects of a synbiotic yogurt, a novel product on lipid profile and blood pressure in mildly to moderately hypercholesterolemic and hypertensive subjects.

Methodology & Theoretical Orientation: Synbiotic yogurt contained probiotics *L. rhamnensis* and *L. acidophilus*, 2% prebiotic fructooligosaccharide enriched inulin (FEI) and 20% pomegranate juice concentrate (PJC) was used as dietary supplement. This product had 90% probiotics survivability, 72% total phenolic compounds and 68% antioxidant activity over a 4-week period of refrigerated storage. To assess its health benefits, an 8-week parallel, double-blinded, randomized trial was conducted with 48 male and female volunteers, aged 30-65 years, consuming a daily serve of 200 g yogurt. Subjects were assigned to 3 groups: a control group; group 2 consumed the synbiotic yogurt without PJC, and group 3 consumed the same synbiotic yogurt containing 20% PJC. Fasting blood samples, 3d dietary records, anthropometric measurements and BP were collected at baseline and at end of 4 and 8 weeks.

Results: Consumption of the synbiotic yogurt containing PJC resulted in 6% decrease in total cholesterol and 8.3% decrease in low-density lipoprotein cholesterol (LDL-C) levels compared with the controls. Systolic blood pressure was reduced by 3.70 mmHg and diastolic blood pressure by 2.33 mm Hg. No significant changes from the baseline were observed in triglycerides and HDL-C levels. Total cholesterol: HDL-C ratio and LDL-C: HDL-C ratio as atherogenic indices significantly decreased in group 3 that consumed synbiotic yogurt containing PJC compared with the control group.

Conclusion: This study indicates the combined effectiveness of probiotics, prebiotics and polyphenols in ameliorating cardiovascular disease risk factors in both women and men.

Biography

Fatemeh Miremadi is an accredited practicing Dietitian, specialized in Hypercholesterolemia and Food Allergies, working in different multidisciplinary medical centers across Melbourne, Australia since 2011. In 2013, she was awarded an Australian Post-graduate award to commence her PhD at Victoria University, Melbourne, Australia. Her project evaluates the combined effectiveness of probiotics, prebiotics and polyphenols in the synbiotic yogurt in modulating total cholesterol and LDL-C levels in mild to moderate hypercholesterolemic population and its effectiveness in ameliorating cardiovascular disease risk factors in both women and men. She has already published 3 research papers in leading journals and presented her findings at national and international conferences.

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