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LONG TERM COFFEE CONSUMPTION IS ASSOCIATED WITH IMPROVED ENDOTHELIAL FUNCTION IN ELDERLY INDIVIDUALS: IKARIA STUDY

ACC Oral Contributions
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Background: Acute coffee consumption is associated with impaired endothelial function, though its long term impact on endothelial function is controversial. We evaluated the association between chronic coffee intake and endothelial function, in elderly residents of Ikaria Island, as the inhabitants of this island show increased longevity and low rates of cardiovascular mortality.

Methods: The study was conducted on a subgroup population of IKARIA study consisted of 175 elderly subjects (aged 65-91 yrs), inhabitants of Ikaria Island. Endothelial function was evaluated by ultrasound measurement of flow-mediated-dilatation (FMD). Dietary habits (including coffee consumption in cups per week and in ml per week) were assessed through a food frequency questionnaire.

Results: Among elderly subjects, 28% had diabetes mellitus, 29% had hypercholesterolemia, 37% had a BMI>30 kg/m2, and 72% were defined as hypertensives. Moreover, 97% of the study group consumed boiled, Greek type of coffee. There was no difference between hypertensives and normotensives concerning age (75±6 years vs. 73±5 years, p=NS), male sex (51% vs. 56%, p=NS) and coffee consumption [328(120-360) ml/day vs. 346(120-360) ml/day, p=NS]. Linear regression analysis after adjustment for confounders such as age, sex, the presence of cardiovascular disease, hypercholesterolemia, diabetes mellitus and hypertension revealed that elderly individuals who consume less that 7 cups of coffee per week had significant worse FMD compared to those consume 7 to 14 cups of coffee [B=1.37, 95%C.I.: (-0.005, 2.748), p=0.05]. Furthermore, linear regression analysis in hypertensive elderly individuals, after adjustment for the aforementioned confounders, revealed that coffee consumption in ml per week was associated with increased FMD, [B=0.003, 95%C.I.: (0.000, 0.005) p=0.039].

Conclusions: Long term consumption of boiled, Greek type of coffee, with its antioxidant properties, is associated with improved endothelial function in elderly individuals. The beneficial effects of coffee are consisted even in hypertensive individuals, illustrating another cardio-protective dietary pattern of elderly inhabitants in Ikaria Island.