Long term coffee consumption is associated with improved endothelial function in elderly individuals: ikaria study.


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Purpose
Acute coffee consumption is associated with impaired endothelial function, though its long term impact on endothelial function and cardiovascular system remains controversial. In this study we evaluated the association between chronic coffee intake and endothelial function, in elderly residents of Ikaria Island; a place that has been recognized universally, with low mortality rates from cardiovascular disease and high longevity.

Methods
The study was conducted from June to October of 2009, on a subgroup population of IKARIA study consisted of 175 elderly subjects (95 men) aged 65-91 years, permanent 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. Among various factors, arterial pressure, fasting blood glucose, blood lipid parameters were measured.

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 several 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 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] after controlling for several confounders such as age, sex, the presence of cardiovascular disease, hypercholesterolemia, diabetes mellitus and the type of antihypertensive treatment.

Conclusion
Long term consumption of boiled, Greek type of coffee which is characterized for its antioxidant properties is associated with improved endothelial function even in elderly individuals with arterial hypertension, illustrating another cardioprotective dietary pattern of elderly inhabitants in Ikaria Island.

Declaration of interest:
Nothing to declare