Coffee consumption and all-cause mortality in a Mediterranean cohort: the SUN project

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Background: Coffee is one of the most widely consumed beverages around the world. Several studies have observed an inverse association between coffee consumption and all-cause mortality. Nevertheless, no prior study on this topic had been conducted in a Mediterranean country.

Purpose: To examine the association between coffee consumption and the risk of mortality in a middle-aged Mediterranean cohort.

Methods: The SUN Project is a prospective dynamic cohort with more than 22,500 Spanish university graduates. For the present study, we analysed data from 19,896 participants. The consumption of coffee was obtained at baseline using a previously validated semi-quantitative food-frequency questionnaire. The baseline questionnaire also collected information on other lifestyles, sociodemographic characteristics, anthropometry, and previous health conditions. Information on mortality was ascertained by permanent contact with the SUN participants and their families, postal authorities, and consultation of the National Death Index. We used Cox regression models to estimate hazard ratios (HR) and 95% confidence intervals (CI) for incident mortality according to baseline total coffee consumption adjusted for potential confounders. We assessed the potential interaction between baseline total coffee consumption and sex, age or baseline adherence to the Mediterranean diet in their association with total mortality.

Results: Among 200,414 person-years of follow-up, a total of 335 participants died. Participants who consumed at least four cups of coffee per day, showed a 65% lower risk of all-cause mortality than those who never or almost never consumed coffee (adjusted HR 0.35; 95% CI: 0.18–0.66). Overall, we found a 25% lower risk for all-cause mortality for each 2 additional cups of total coffee per day (adjusted HR 0.75; 95% CI: 0.63–0.89). We observed a significant interaction between total coffee consumption and age (p for interaction=0.0016). Among participants who were at least 45 years old, drinking two additional cups of coffee per day was associated with a 30% lower risk of mortality during follow-up (adjusted HR, 0.70; 95% CI 0.58–0.85). The association was not significant among younger participants. No other interaction was statistically significant.

Conclusion: In the SUN project we found an inverse association between total coffee consumption and the risk of all-cause mortality, especially among older participants.