Relationship between biliary tract cancer and coffee consumption in population of Pune city, India

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Disclosure by authors

- NONE

Objectives

- To investigate the relationship between coffee consumption, biliary tract cancers and gallstone disease.
- Study protective effect of coffee on the gallstone disease.

Introduction

- Coffee is one of the most consumed beverages worldwide and it has been associated with a number of benefits on human health including a decreased risk of all-cause, cardiovascular, and cancer mortality.
- Caffeine, a major component in coffee has been proposed to exert anti-carcinogenic effects toward up-regulation of antioxidant-responsive element (ARE)-mediated signalling.
- Gallbladder (GB) cancer is a highly fatal malignancy with notable geographical variations and a higher incidence in women. The aetiology of biliary tract cancer (BTC), including GB cancer and bile duct cancer (BDC) is poorly understood.

Schematic Presentation of Experimental Design

A population-based case-control study was conducted in urban Pune city from 1 April 2019 to 31 March 2020 involving interviews with 627 new cases of biliary tract cancers (including 368 cases of gallbladder cancer, 191 cases of extrahepatic bile duct cancer and 68 cases of cancer of the ampulla of Vater) aged 35 to 74 years and 959 population controls frequency-matched to cases by gender and age in five-year group. 1037 patients of gallstone disease were selected from the same hospital.

All subjects were interviewed in person by trained interviewers by use of a structured questionnaire.

Unconditional logistic regression analysis was used to calculate adjusted odds ratio (OR) and 95% confidence interval (CI).

Results

Compared with coffee non-drinkers, current coffee consumption was inversely associated with risk of gallbladder cancer, extrahepatic bile duct cancer and gallstone disease among females with OR of 0.57 (95% CI: 0.34-0.96), 0.53 (95% CI: 0.27-1.03) and 0.71 (95% CI: 0.51-0.99), respectively.

OR declined with younger age at initiation of coffee drinking and with longer duration of coffee consumption (P for trend < 0.05).

Among males, the corresponding OR were mostly below one, although not statistically significant.

Discussion and Conclusion

- Coffee consumption may decrease the risk of cancers of the gallbladder and extrahepatic bile duct among females. The protective effect appears to be independent of gallstone disease.
- Current evidence is sufficient to guide future clinical randomized trials to test the protective effects of coffee, which in turn may lead to more definitive recommendations.

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