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Association of alcohol intake with pancreatic cancer mortality in never smokers.

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Abstract

**BACKGROUND:** An international panel of experts characterized the evidence linking alcoholic beverage consumption to pancreatic cancer as limited. Primary concerns include inconsistent results from underpowered studies, residual confounding by smoking, and the question of whether the association varies by type of alcoholic beverage.

**METHODS:** The association of alcohol intake with pancreatic cancer mortality was examined using data from the Cancer Prevention Study II, a prospective study of US adults 30 years and older. Alcohol consumption was self-reported on a 4-page questionnaire in 1982. Based on follow-up through December 31, 2006, there were 6847 pancreatic cancer deaths among 1 030 467 participants. Multivariable-adjusted relative risks (RRs) and 95% confidence intervals (CIs) were computed using Cox proportional hazards regression analysis controlling for age, sex, race/ethnicity, education, marital status, body mass index, family history of pancreatic cancer, and personal history of gallstones, diabetes mellitus, or smoking.

**RESULTS:** The RRs (95% CIs) of pancreatic cancer mortality associated with current intake of less than 1, 1, 2, 3, and 4 or more drinks per day compared with nondrinkers were 1.06 (0.99-1.13), 0.99 (0.90-1.08), 1.06 (0.97-1.17), 1.25 (1.11-1.42), and 1.17 (1.06-1.29), respectively ( $P < .001$  for trend). Consumption of 3 or more drinks per day was associated with pancreatic cancer mortality in never smokers (RR, 1.36; 95% CI, 1.13-1.62) and in ever smokers (RR, 1.16; 95% CI, 1.06-1.27). This association was observed for consumption of liquor (RR, 1.32; 95% CI, 1.10-1.57) but not beer (RR, 1.08; 95% CI, 0.90-1.30) or wine (RR, 1.09; 95% CI, 0.79-1.49).

**CONCLUSION:** These results strengthen the evidence that alcohol consumption, specifically liquor consumption of 3 or more drinks per day, increases pancreatic cancer mortality independent of smoking.

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