Moderate alcohol intake and risk of lethal prostate cancer in the Health Professionals Follow-up Study

Downer MK,[1,2] Kenfield SA,[2,3] Stampfer MJ, [1,2,4] Wilson KM,[1,2] Dickerman BA,[1] Giovannucci EL,[1,2,4] Rimm EB,[1,2,4] Willett WC,[1,2,4] Mucci LA, Chan JC,[3,5] Van Blarigan EL[3,5]

[1]Department of Epidemiology, Harvard T.H. Chan School of Public Health, Boston, MA
[2]Channing Division of Network Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA
[3]Department of Urology, University of California, San Francisco
[4]Department of Nutrition, Harvard T.H. Chan School of Public Health, Boston, MA
[5]Department of Epidemiology and Biostatistics, University of California, San Francisco

Background: Some evidence suggests alcohol intake may increase risk of incident prostate cancer, but decrease prostate cancer progression. It remains largely unknown whether moderate alcohol intake before or after prostate cancer diagnosis is associated with lethal (metastatic or fatal) prostate cancer.
Methods: Using prospective data from the Health Professionals Follow-up Study (HPFS) between 1986-2012, we assess whether (1) pre-diagnosis alcohol intake is associated with risk of lethal prostate cancer among all HPFS participants, and (2) post-diagnosis alcohol intake is associated with lethal prostate cancer among participants diagnosed with non-metastatic disease. Our exposures were total alcohol and beverage-specific alcohol (red and white wine, beer, and liquor; servings/week) assessed every four years during follow-up. *A priori* outcomes were lethal prostate cancer and overall mortality. We used multivariate Cox proportional hazards regression to estimate hazard ratios (HR) and 95% confidence intervals (CI).
Results: Among 47,568 men free of cancer at baseline, we observed 856 lethal prostate cancers and 16,329 deaths (median follow-up 25.3 yrs). Compared to no drinking, total alcohol intake (g/d) was associated with a non-significant decreased risk of lethal prostate cancer (HR, 95% CI): (>0g/d to <10: 0.79, 0.66-0.94; 10 to <15: 0.91, 0.73-1.15; 15 to <30: 0.83, 0.67-1.04; ≥30: 0.85, 0.67-1.09). Among 5,182 men diagnosed with non-metastatic prostate cancer, we observed 424 lethal prostate cancers and 1,594 deaths (median follow-up 6.8 yrs). Post-diagnosis total alcohol intake was not associated with risk of lethal prostate cancer. However, moderate post-diagnosis red wine intake was associated with lower risk of lethal prostate cancer (compared to none: >0 servings/week to <1: 0.51, 0.24-1.09; 1 to <3: 0.32, 0.10-1.00; 3 to <7: 0.43, 0.18-0.98; ≥7: 0.45, 0.15-1.33). Moderate post-diagnosis total alcohol intake (15 to <30 g/d) was inversely associated with overall mortality compared to no drinking.
Conclusions: Moderate alcohol intake was not associated with risk of lethal prostate cancer, but may decrease risk of overall mortality.

Conflict of Interest: None.
Funding: NIH/NCI UM1 CA167552, NCI K07CA197077