

Associations between Beer, Wine, and Liquor Consumption and Lung Cancer Risk: A Meta-analysis

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Abstract

Objective: Epidemiologic studies suggest that the effect on lung cancer risk may be different for beer, wine, and liquor. We conducted dose-specific meta-analyses and dose-response meta-regression to summarize findings from the current literature on the association between consumption of beer, wine, or liquor and lung cancer risk.

Results: Average beer consumption of one drink or greater per day was associated with an increased risk of lung cancer [relative risk (RR), 1.23; 95% confidence interval (95% CI), 1.06-1.41]. This association was observed in both men and women, although it was only significant in men. A J-shaped dose-response curve was suggested for beer intake. An inverse association was observed for both average wine consumption of less than one drink per day (RR, 0.77; 95% CI, 0.59-1.00) and one drink or greater per day (RR, 0.78; 95% CI, 0.60-1.02) in the drinking range incurred in the source studies. Average liquor consumption of one drink or greater per day was found to be associated with increased risk in men (RR, 1.33; 95% CI, 1.10-1.62). No association was observed for liquor drinking in women. The presence of heterogeneity between studies was detected. Study design, country, gender, adjustment factors, and lung cancer histologic type were not significant predictors of the heterogeneity.

Conclusions: The results from this meta-analysis suggest that high consumption of beer and liquors may be associated with increased lung cancer risk, whereas modest wine consumption may be inversely associated with risk. More research with improved control of confounding is needed to confirm these findings and to establish the dose-response relationship, particularly risk at high consumption levels. (*Cancer Epidemiol Biomarkers Prev* 2007;16(11):2436-47)