A meta-analysis of alcohol consumption and the risk of brain tumours.


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Abstract

Background Alcohol is capable of traversing the blood-brain barrier and is thus a possible risk factor for brain cancer. Several epidemiological studies have been published on the issue, a number of those during recent years, with inconsistent findings.

Materials and methods We performed a systematic literature search in the Medline and EMBASE databases. We found a total of 19 studies providing risk estimates for total alcohol or specific alcoholic beverages. Pooled estimates of the relative risks (RR) and 95% confidence intervals (CI) were calculated using random-effects models.

Results The pooled RR of brain cancer for alcohol drinkers versus non-drinkers was 0.97 (95% CI 0.82-1.15; based on 12 studies). Moderate (<2 drinks/day) and heavy alcohol drinkers had RRs of 1.01 (95% CI 0.81-1.25) and 1.35 (95% CI 0.85-2.15), respectively. With reference to specific alcoholic beverages, the RRs were 1.01 (95% CI 0.70-1.48) for wine, 0.96 (95% CI 0.82-1.12) for beer, and 1.20 (95% CI 1.01-1.42) for spirit consumption. The RRs for drinkers versus non-drinkers were 0.93 (95% CI 0.81-1.07) for glioma and 0.71 (95% CI 0.45-1.12) for meningioma.

Conclusions Alcohol drinking does not appear to be associated with adult brain cancer, though a potential effect of high doses deserves further study.