Dietary flavonoid intake and lung cancer--a population-based case-control study.

BACKGROUND: Laboratory studies suggest that flavonoids are antimutagenic and anticarcinogenic. To investigate the associations between commonly consumed flavonoid compounds and lung cancer, the authors conducted a population-based case-control study of 558 lung cancer cases and a group of 837 controls.

METHODS: Dietary intakes of flavonoids were estimated by combining the intake frequency (collected by a food frequency questionnaire), portion size, and food composition data. Unconditional logistic regression analysis was used to estimate odds ratios (ORs) and 95% confidence limits (95% CLs) with an adjustment for potential confounders, including age, sex, race-ethnicity, years of schooling, smoking status, pack-years of tobacco smoking, and daily energy intake.

RESULTS: Lung cancer was associated inversely with the consumption of epicatechin (in 10 mg per day increment: OR, 0.64; 95% CL, 0.46-0.88), catechin (4 mg per day increment: OR, 0.49; 95% CL, 0.35-0.70), quercetin (9 mg per day increment: OR, 0.65; 95% CL, 0.44-0.95), and kaempferol (2 mg per day increment: OR, 0.68; 95% CL, 0.51-0.90) among tobacco smokers. There was little association between lung cancer and the flavonoid compounds mentioned above among nonsmokers. Regardless of smoking status, there was little association with total flavonoids: thearubigins, hesperetin, naringenin, and myricetin. In addition, consumption of vegetables, tea, and wine, all of which are rich sources of flavonoids, was associated inversely with lung cancer among tobacco smokers.

CONCLUSIONS: Certain flavonoid compounds, including epicatechin, catechin, quercetin, and kaempferol, were associated inversely with lung cancer among tobacco smokers, but not among nonsmokers. Further studies of these associations may be warranted.

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