

Tea Consumption and Hypertension: Possible Benefits?

Yang YC, Lu FH, Wu JS, et al. *The protective effect of habitual tea consumption on hypertension. Arch Intern Med* 2004;164:1534–40.

Study Overview

Objective. To determine if tea consumption is associated with risk of developing hypertension.

Design. Cross-sectional study.

Setting and participants. Using a stratified clustering sampling schema, 2416 participants in Taiwan were invited to complete a survey consisting of a structured questionnaire interview and standardized physical examination. 67.8% completed the survey. Analysis was done on 1507 participants without prior history of hypertension.

Main outcome measure. New diagnosis of hypertension.

Main results. Compared with nontea drinkers, participants who drank more than 120 mL/day of tea for at least 1 year had lower odds of developing hypertension (odds ratio [OR], 0.54 [95% confidence interval (CI), 0.34–0.86]), and those who drank more than 600 mL/day of tea had even lower odds for hypertension development (OR, 0.35 [95% CI, 0.17–0.73]). Participants who drank any amount of tea for at least 1 year also had lower odds of developing hypertension (OR, 0.54 [95% CI, 0.33–0.89]), but consumption of more than 10 years did not further lower hypertension risk (OR, 0.55 [95% CI, 0.31–1.00]). When both amount and duration were taken into account, amount of tea consumed remained significant (OR, 0.19 [95% CI, 0.04–0.85]), while duration did not.

Conclusion. In a Chinese population, tea consumption of 120 mL/day for at least 1 year is associated with lower risk of developing hypertension.

Commentary

Tea is the second most common beverage consumed worldwide, and for decades it has been postulated in complementary and alternative medicine texts that it is protective against cardiovascular disease. Tea's hypotensive effect has been demonstrated in animal models [1]; however, to date, human clinical and epidemiologic studies of tea's effects on blood

pressure have not shown a consistent association [2,3]. Specifically, socioeconomic factors and variable lifestyle and dietary factors that may confound the association of tea consumption with hypertension were not comprehensively available in previous epidemiologic surveys [4].

Yang and colleagues capitalized on a previous epidemiologic survey of diabetes in Taiwan that included detailed dietary intake and lifestyle factors, along with physical examination data. These data allowed for creation of models that were adjusted for physical activity; body mass index; sodium intake; smoking status; alcohol, vegetable, and coffee consumptions; as well as the typical age, gender, and combined education and occupation levels for a socioeconomic index. After adjustment, amount and duration of tea consumption were each independently associated with lower odds of developing hypertension. To bolster the weakness of a traditional cross-sectional study, Yang et al were also able to show a dose-response effect of lower mean systolic and diastolic blood pressure with increasing amount and duration of tea consumption. However, this study was done in a uniform racial/ethnic population and may have limited generalizability to the U.S. population.

Applications for Clinical Practice

Given the significant amount of patient interest and recent media attention on the health benefits of tea, physicians should anticipate patient queries about drinking tea to prevent or treat hypertension. This study raises awareness and provides a more complete epidemiologic analysis of tea consumption and possible relationship to hypertension. The intriguing possibility that a half cup of tea per day can decrease hypertension development is worthy of a long-term, randomized, prospective study or possibly amending the questionnaire for follow-up of an ongoing observational study to gather more evidence. However, until such confirmatory studies are performed, physicians should continue to encourage their patients to pursue proven dietary and lifestyle changes to prevent or control hypertension and resist patient entreaties to substitute tea drinking for those efforts. While substituting tea for other beverages may be a consideration for patients making healthier lifestyle choices,

present level of evidence do not support a blanket recommendation to drink tea.

—Review by Mark S. Horng, MD

References

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