Moderate Drinking Linked to Lower Mortality After Myocardial Infarction CME

CLINICAL CONTEXT

Alcohol consumption produces physiologic changes that might affect cardiovascular health, and the authors of the current study provide a brief overview of these effects. Consumption of approximately 2 alcoholic drinks per day has been associated with an average increase in high-density lipoprotein cholesterol levels of 4 mg/dL. Moderate alcohol consumption may also improve insulin sensitivity, reduce signs of intravascular inflammation, and inhibit coronary calcification. However, heavy alcohol intake can reduce left ventricular ejection fraction, increase blood pressure, and inhibit fibrinolysis.

Moderate alcohol consumption has been associated with a reduction in the risk for coronary heart disease events among healthy adults, but its effects among individuals with known coronary heart disease are less established. The current study by Pai and colleagues examines this issue using the large cohort of male physicians from the Health Professionals Follow-up Study.

STUDY SYNOPSIS AND PERSPECTIVE

Men who drink 2 glasses of alcohol a day after surviving a heart attack are less likely to die from heart disease or other causes than either nondrinkers or those who drink more, according to a study of nearly 2000 health professionals published online March 28 in the European Heart Journal.

Jennifer K. Pai, ScD, assistant professor of medicine and associate epidemiologist, Channing Laboratory, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts, and colleagues used data from the Health Professionals Follow-up Study to track the survival of 1818 men who suffered a heart attack between 1986 and 2006, following up some participants for as long as 20 years. During the follow-up, some 468 men died.

Although moderate alcohol consumption (between 10.0 and 29.9 g/day) is associated with a lower risk for heart disease and reduced mortality from all causes in healthy populations, the data on post–myocardial infarction (MI) drinking is limited and somewhat contradictory, the authors write.

In the current study, moderate drinking showed clear benefits post-MI in both multivariable-adjusted and unadjusted hazard ratios (HRs). The multivariable-adjusted HR for death from any cause for moderate drinkers compared with nondrinkers was 0.66 (95% confidence interval [CI], 0.51 - 0.86). For light drinkers, who reported consuming between 0.1 and 9.9 g of alcohol per day, the HR was 0.78 (95% CI, 0.62 - 0.97). For heavy drinkers, who consumed 30 g or more of alcohol daily, the HR for all-cause

mortality was 0.87 (95% CI, 0.61 - 1.25; P quadratic = .006). The data were adjusted for age at diagnosis, questionnaire follow-up cycle, smoking, body mass index (BMI), physical activity, diabetes, hypertension, lipid-lowering medications, aspirin use, and heart failure.

When just cardiovascular mortality is considered, the benefit for moderate drinkers is more pronounced, with a multivariable-adjusted HR of 0.58 (95% CI, 0.39 - 0.84) compared with 0.74 for light drinkers (95% CI, 0.54 - 1.02) and 0.98 for heavy drinkers (95% CI, 0.60 - 1.60; P quadratic = .003).

"Our findings clearly demonstrate that long-term moderate alcohol consumption among men who survived a heart attack was associated with reduced risk of total and cardiovascular mortality," Dr. Pai said in a news release. "We also found that among men who consumed moderate amounts of alcohol prior to a heart attack, those who continued to consume alcohol 'in moderation' afterwards also had better long-term prognosis."

In this study, participants responded to a questionnaire about alcohol consumption and diet every 4 years and were asked about lifestyle and medical factors (including smoking and BMI) every 2 years. Previous prospective studies examining post-MI alcohol consumption did not include validated measures of pre- and post-MI drinking with long-term follow-up.

Most participants in this study did not change alcohol consumption levels after MI diagnosis. Multivariable-adjusted HRs for total mortality, considering pre-MI alcohol only, compared with nondrinkers, were 0.91 (95% CI, 0.72 - 1.16) for light drinkers, 0.70 (95% CI, 0.52 - 0.93) for moderate drinkers, and 1.00 (95% CI, 0.70 - 1.42) for heavy drinkers. When considering only post-MI consumption, multivariable HRs for total mortality were 0.90 (95% CI, 0.71 - 1.13) for light drinkers, 0.70 (95% CI, 0.52 - 0.92) for moderate drinkers, and 0.79 (95% CI, 0.53 - 1.17) for heavy drinkers.

For cardiovascular morality, the multivariable-adjusted HR for pre-MI alcohol consumption was 0.74 (95% CI, 0.52 - 1.04) for light drinkers, 0.78 (95% CI, 0.53 - 1.15) for moderate drinkers, and 0.85 (95% CI, 0.50 - 1.44) for heavy drinkers. When considering post-MI consumption only, the multivariable HRs for cardiovascular mortality were 0.73 (95% CI, 0.53 - 1.01) for light drinkers, 0.62 (95% CI, 0.42 - 0.93) for moderate drinkers, and 0.77 (95% CI, 0.44 - 1.35) for heavy drinkers.

The study results hinted at an inverse association between alcohol consumption and mortality among patients who increased alcohol consumption, from less than 10 g/day before a heart attack to 10 to 29.9 g/day post-MI. The small number of cases in the analysis led to a CI that crossed 1.0 in multivariable adjustment, and so was not statistically significant.

The data showed that heavy drinking carried an HR essentially as high as nondrinking.

"Our results, showing the greatest benefit among moderate drinkers and a suggestion of excess mortality among men who consumed more than two drinks a day after a heart attack, emphasise the importance of alcohol in moderation," Dr. Pai said in the release.

"In addition, other studies have shown that any benefits from light drinking are entirely eliminated after episodes of binge drinking," she noted.

The data does not necessarily extrapolate to women, Dr. Pai said in the release. "However, in all other cases of alcohol and chronic disease, associations are similar except at lower quantities for women. Thus, an association is likely to be observed at 5-14.9g per day, or up to a drink a day for women."

The authors have disclosed no relevant financial relationships.

STUDY HIGHLIGHTS

- The Health Professionals Follow-up Study enrolled 51,529 male US physicians between the ages of 40 and 75 years in 1986. Health information was collected prospectively every 2 years from this cohort, and diet information was updated every 4 years.
- The current study focused on men with a first MI between 1986 and follow-up in 2006.
- The main study outcomes were the associations between alcohol consumption and the risks for all-cause and cardiovascular mortality. The accurate assessment of alcohol consumption in the study cohort was validated in a previous study. The main study outcomes were adjusted to account for demographic, disease, health habit, and family history variables.
- Researchers divided alcohol consumption into levels corresponding to 0, 1, 2, and more than 2 drinks per day.
- Alcohol consumption was associated with higher rates of cigarette smoking and aspirin use, but alcohol intake was negatively associated with the prevalence of diabetes.
- 1818 men survived MI during the follow-up period.
- Compared with nondrinkers, in men who drank an average of 1, 2, and more than 2 drinks per day, the multivariable HRs for all-cause mortality were 0.78 (95% CI, 0.62 - 0.97), 0.66 (95% CI, 0.51 - 0.86), and 0.87 (95% CI, 0.61 - 1.25), respectively.
- The respective multivariable HRs for cardiovascular mortality specifically were 0.74 (95% CI, 0.54 - 1.02), 0.58 (95% CI, 0.39 - 0.84), and 0.98 (95% CI, 0.60 - 1.60).
- The main results were similar regardless of which type of alcoholic beverage was consumed.
- Additional adjustments to account for caloric intake and consumption of omega-3 fatty acids also failed to appreciably change the main study findings.
- Consumption of alcohol only before or after MI had a similar effect on the risk for mortality, and initiation of alcohol consumption of 2 drinks per day after MI was associated with a nonsignificant trend toward lower risks for total and cardiovascular mortality.
- Moderate alcohol consumption did not reduce mortality risk among men with anterior MI or an estimated left ventricular ejection fraction of less than 40%.

CLINICAL IMPLICATIONS

- Moderate alcohol consumption can improve insulin sensitivity and levels of high-density lipoprotein cholesterol, reduce signs of intravascular inflammation, and inhibit coronary calcification.

- In the current study by Pai and colleagues, moderate consumption of any type of alcoholic beverage was associated with reduced risks for total and cardiovascular mortality among male physicians, although this was not the case among men with anterior MI or depressed left ventricular ejection fraction.