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Alcohol consumption and risk of ventricular arrhythmias and sudden cardiac death: An observational study of 408,712 individuals

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BACKGROUND Although previous studies have demonstrated a U-shaped relationship between alcohol and sudden cardiac death (SCD), there is a paucity of evidence on the role of alcohol specifically on incident ventricular arrhythmias (VAs).

OBJECTIVE The purpose of this study was to characterize associations of total and beverage-specific alcohol consumption with incident VA and SCD using data from the UK Biobank.

METHODS Alcohol consumption reported at baseline was calculated as UK standard drinks (8 g of alcohol) per week. Outcomes were assessed through hospitalization and death records. Alcohol consumption was modeled as restricted cubic splines in multivariate Cox regression models and corrected for regression dilution bias.

RESULTS We studied 408,712 middle-aged individuals (52.1% female) over a median follow-up time of 11.5 years. A total of 1733 incident VA events and 2044 SCDs occurred. For incident VA, no clear association was seen with total alcohol consumption. Although consumption of greater amounts of spirits was associated

with increased VA risk, no other significant beverage-specific associations were observed. For SCD, a U-shaped association was seen for total alcohol consumption, such that consumption of <26 drinks per week was associated with lowest risk. Consumption of greater amounts of beer, cider, and spirits was potentially associated with increasing SCD risk, whereas increasing red and white wine intake was associated with reduced risk.

CONCLUSION In this predominantly white cohort, no association of total alcohol consumption was observed with VA, whereas a U-shaped association was present for SCD. Additional studies utilizing accurately defined VA and SCD events are required to provide further insights into these contrasting findings.

KEYWORDS Alcohol; Beer; Cardiac arrest; Spirits; Sudden death; Ventricular arrhythmia; Wine

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Alcohol and Ventricular Arrhythmias
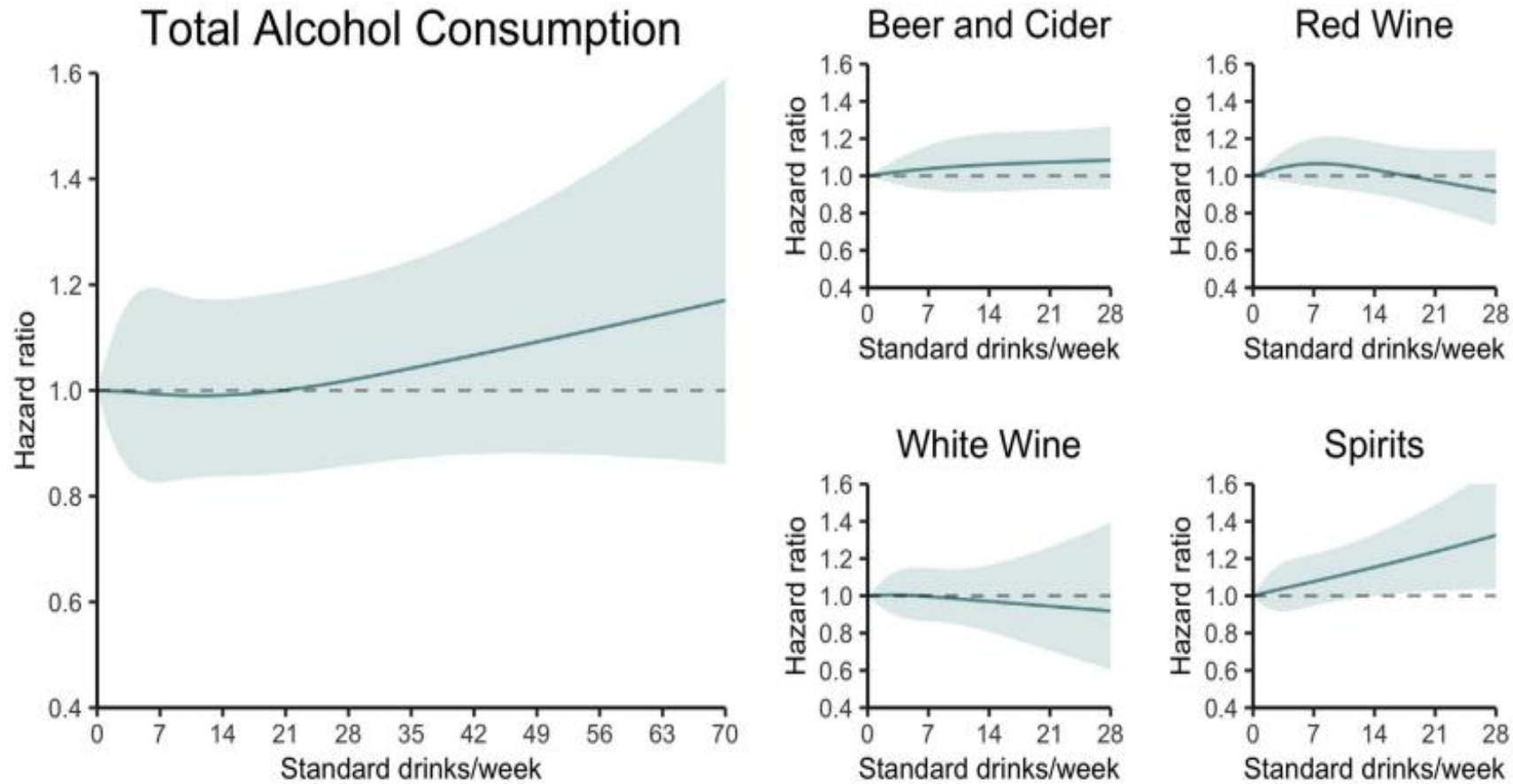
Figure 1   Association of alcohol consumption and incident ventricular arrhythmias. One standard drink is defined as 8 g of alcohol, the size of a standard drink in the United Kingdom. *Shaded area* represents 95% confidence interval.

Alcohol and Sudden Cardiac Death
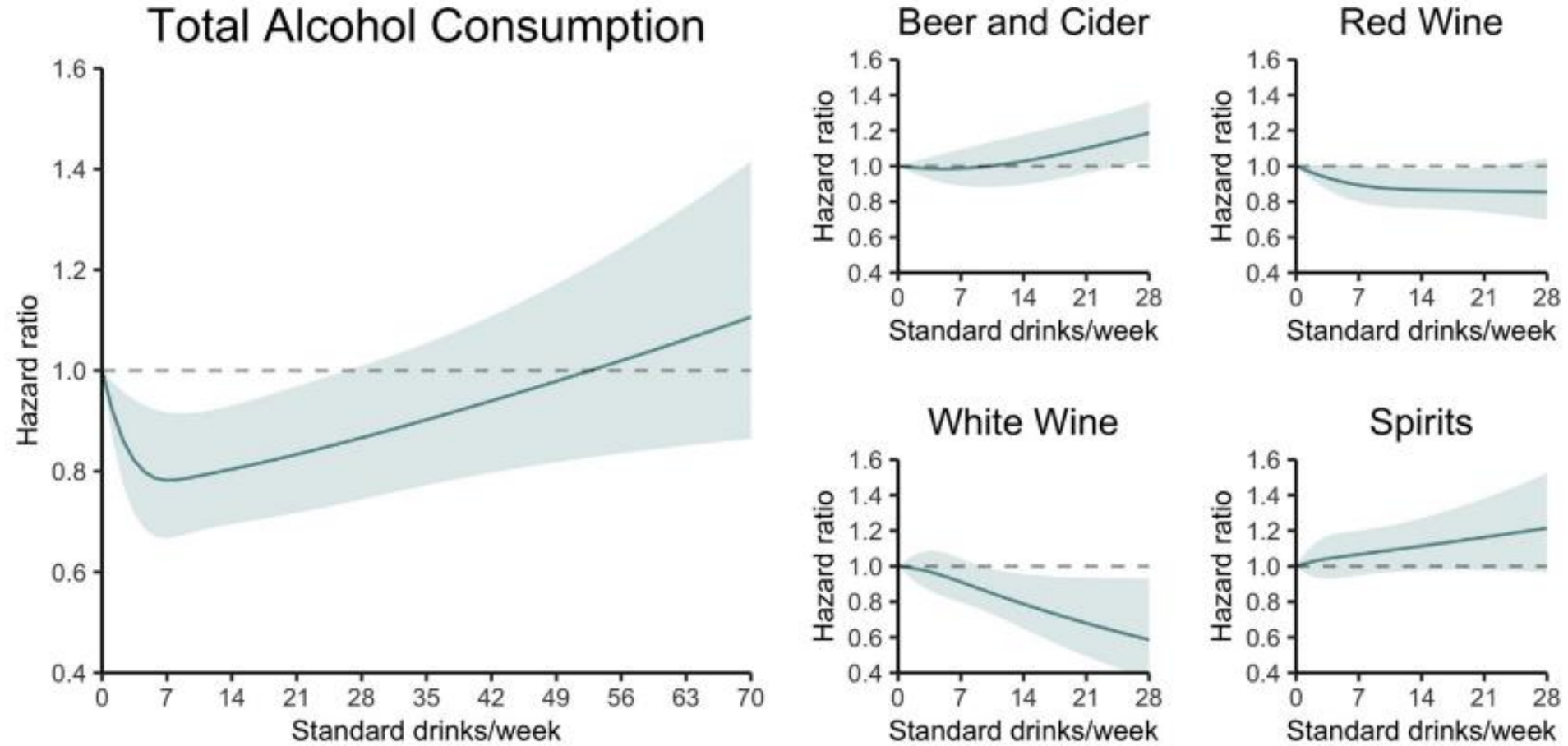
Figure 2 Association of alcohol consumption and sudden cardiac death. One standard drink is defined as 8 g of alcohol, the size of a standard drink in the United Kingdom. *Shaded area* represents 95% confidence interval.