

# Alcohol types and socioeconomic status are associated with Barrett's esophagus risk

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Although the relationship between alcohol and esophageal squamous cell carcinoma is well established, studies investigating the association between alcohol intake and reflux esophagitis (RE), Barrett's esophagus (BE) and esophageal adenocarcinoma (EAC) have reported inconsistent findings. Furthermore, little is known regarding the effect of alcohol on BE, especially related to alcohol types.

Two recent studies published in *Gastroenterology* further our understanding of these illnesses. *Gastroenterology* is the official journal of the American Gastroenterological Association (AGA) Institute.

## Education Status Is Significantly Inversely Associated with BE Risk

A new diagnosis of BE is associated with alcohol types, and the effects are modified by the presence of vitamin supplement use, according to a new study in *Gastroenterology*. The observed associations are independent of demographic and life-style factors that are related to choice of alcoholic beverages, including vitamin supplement use. In addition, higher education level is inversely related to the risk.

People with BE have a 30 to 125 fold increased risk of developing EAC compared to the general population. The incidence of EAC has increased by more than 500 percent in the last three decades, more rapidly than any other malignancy in the U.S. The rate of increase is

most predominant among Caucasian males, suggesting that environmental or lifestyle factors may play important roles in the change in incidence.

"The identification of risk factors for BE may provide information on early events in the carcinogenic pathway for EAC that could lead to effective intervention strategies," said Ai Kubo, PhD, of Kaiser Permanente and lead author of the study.

This study is the first community or population-based study in the U.S. to evaluate alcohol and socio-demographic factors as risk factors for BE. Using a case-control study within the Kaiser Permanente Northern California membership, patients with a new diagnosis of BE (n=320) between 2002 and 2005 were matched to persons with gastroesophageal reflux disease (GERD; n=316) and to population controls (n=317). Information was collected using validated questionnaires during direct in-person interviews; analyses used multivariate unconditional logistic regression.

Total alcohol use was not significantly associated with the risk of BE, although stratification by beverage type showed an inverse association for wine drinkers compared to nondrinkers (seven+ drinks wine/week versus none: OR=0.44, 95 percent CI (0.20-0.99); multivariate analysis). Among population controls, those who preferred wine were more likely to have college degrees and regularly take vitamin supplements than those who preferred beer or liquor. Adjustment for these factors or GERD symptoms did not eliminate the inverse association between wine consumption and BE. Education status was significantly inversely associated with the risk of BE.

"Future studies examining the interaction between vitamin supplement and alcohol types and how socioeconomic status may affect GERD and BE are needed," added Dr. Kubo.

## **Total Alcohol Consumption at 21 Is Significantly Associated with RE**

Alcohol consumption in early adulthood may lead to the development of reflux esophagitis (RE), according to a new study in Gastroenterology. However, more recent alcohol consumption does not appear to confer any increased risk of RE, BE or EAC. In fact, wine consumption may reduce the risk of these esophageal disorders.

Gastroesophageal reflux (GER) symptoms are common in Western societies with 10 to 20 percent of adults experiencing at least weekly symptoms. GER is the main predisposing risk factor for erosive RE, BE and EAC; alcohol may increase GER by causing relaxation of the lower esophageal sphincter.

Using data collected as part of an all-Ireland case-control study, the FINBAR (Factors INfluencing the Barrett's Adenocarcinoma Relationship) study, information relating to alcohol consumption (at age 21 and five years before the interview date) was collected from 230 RE, 224 BE and 227 EAC patients and 260 frequency-matched population controls. Logistic regression analyses were used to compare alcohol consumption in the three case groups to controls with adjustment for potential confounders. The FINBAR study is one of the largest case-control studies to date to investigate the association between alcohol consumption and RE, BE and EAC using the same control group.

Population controls reporting GER symptoms were less likely than controls without symptoms to drink alcohol five years before the interview date (OR 0.44, 95 percent CI 0.20-0.99). No associations were observed between total alcohol consumption five years before the interview date and RE, BE or EAC (ORs, 95 percent CI: 1.26, 0.78-2.05, 0.72, 0.43-1.21 and 0.75, 0.46-1.22, respectively). Wine was inversely

associated with RE (OR 0.45, 95 percent CI 0.27-0.75). Total alcohol consumption at age 21 was significantly associated with RE (OR 2.24, 95 percent CI 1.35-3.74), but not with BE or EAC (ORs, 95 percent CI: 1.06, 0.63-1.79 and 1.27, 0.77-2.10, respectively).

These preliminary findings warrant further research. Future studies should consider the influence of reflux symptoms and the temporality of the association carefully when interpreting the association between alcohol and RE, BE and EAC.

Source: American Gastroenterological Association

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