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Alcohol consumption and risk of oesophageal squamous cell cancer in East Africa

Lyon, France, 16 December 2021 – A new international study led by scientists from the International Agency for Research on Cancer (IARC), Moi University in Kenya, and the Kilimanjaro Clinical Research Institute and the Malawi College of Medicine in Malawi investigated alcohol consumption as a risk factor for oesophageal squamous cell carcinoma (ESCC) in East Africa. The study, published today in *The Lancet Global Health*[1] and funded by the World Cancer Research Fund, showed that alcohol consumption was a substantial contributor to the burden of ESCC in this region, particularly among men. The findings suggest that a large fraction of these cancers could be prevented by cessation of alcohol consumption, particularly among drinkers whose drinking includes the consumption of strong spirits. These spirits include commercial spirits as well as the traditional distillations of *chang'aa* in Kenya, *gongo* in the United Republic of Tanzania, and *kachasu* in Malawi.

"Until now, the contribution of alcohol consumption to the burden of ESCC in East Africa was unclear, in part because of the complexity of ascertaining a wide range of traditional and commercial drinks in the region," says Dr Valerie McCormack, Deputy Head of the Environment and Lifestyle Epidemiology Branch at IARC and the principal investigator of the Oesophageal Squamous Cell Carcinoma African Prevention Research (ESCCAPE) study. "This new study takes into account the consumption of a wide range of traditional alcoholic beverages and shows clearly that the burden of ESCC could be reduced significantly in East Africa with efficient public health measures to reduce the consumption of alcohol."

Key results

This hospital-based case–control study analysed the drinking habits of 1279 people with ESCC and 1346 people without ESCC (controls), in Kenya, the United Republic of Tanzania, and Malawi.

It provided a comprehensive assessment of a variety of locally consumed alcoholic beverages that was used to classify drinkers as exclusively low alcohol-by-volume (ABV; < 30% ABV) drinkers or drinkers of some high-ABV drinks, as well as the number of drinks consumed, the average weekly ethanol intake, and the contribution of each drink type to the overall ethanol consumption.

[1] Middleton DRS, Mmbaga BT, Menya D, Dzamalala C, Nyakunga-Maro G, Finch P, et al. Alcohol consumption and oesophageal squamous cell cancer risk in east Africa: findings from the large multicentre ESCCAPE case-control study in Kenya, Tanzania, and Malawi. *Lancet Glob Health*. Published online 15 December 2021. https://doi.org/10.1016/S2214-109X(21)00506-4

The researchers found consistent positive associations with ESCC risk for ever having consumed alcohol in Kenyan men and in Tanzanian men, and for daily number of drinks and estimated ethanol intake in Kenya and the United Republic of Tanzania (in both sexes) and in Malawian women.

Corresponding population-attributable fractions of ESCC for those who reported ever drinking alcohol (vs never drinking) were 65% (95% confidence interval [CI], 52–78%) in Kenyan men and 23% (95% CI, < 1–45%) in Kenyan women, and 56% (95% CI, 36–76%) in Tanzanian men and 5% (95% CI, 0–42%) in Tanzanian women. Increased ESCC risk and population-attributable fractions were almost entirely due to risks in high-ABV drinkers. A notable exception to the overall findings was seen in Malawian men, in which self-reported alcohol consumption was not related to ESCC risk. This outlying finding requires further investigation.

Burden of ESCC

In 2020, oesophageal cancer was responsible for an estimated 544 076 deaths globally, making it the sixth most common cause of cancer death in the world. There are two major types of this cancer: ESCC and oesophageal adenocarcinoma. ESCC comprised about 84% of the estimated burden of all types of oesophageal cancer cases in 2018. Although the incidence of ESCC is extremely low in West Africa, it is very high in East Africa and southern Africa. These results, as well as others from the ESCCAPE study, indicate that a combination of risk factors are present in this setting; these include, in addition to alcohol, consumption of very hot beverages, tobacco use, and poor oral hygiene. The complex mix of patients with ESCC includes young people, women, and non-drinkers and non-smokers; thus, further – as yet unidentified – factors must also play a role in this setting.

In 2020, there were an estimated 3000 new cases of oesophageal cancer in Kenya, 2600 in the United Republic of Tanzania, and 1800 in Malawi, with similar numbers of deaths due to oesophageal cancer in each country, because survival rates are low.

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