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Hot beverages and esophageal cancer risk in Malawi and Tanzania: Findings from the ESCCAPE case–control studies

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Esophageal squamous cell carcinoma (ESCC) has distinctly high incidence rates in Malawi and Tanzania and much of East Africa, with an adverse prognosis and ill known etiology. Consumption of hot food/beverage, a probable carcinogen to humans, is associated with increased ESCC risk in other settings. We conducted a case–control study in Blantyre, southern Malawi and the Kilimanjaro region, northern Tanzania between June 2017 and May 2020, and between November 2015 and December 2019 respectively. Cases were patients with endoscopically confirmed esophageal cancer whose histology did not exclude ESCC. Some cases were also included on the basis of imaging or clinical criteria. Age and sex-matched controls were hospital visitors and in and outpatients, excluding those with digestive diseases. Odds ratios (ORs) and 95% confidence intervals (CIs) were estimated for self-reported tea, coffee and porridge consumption temperature, minutes from cooked to consumption and consumption speed using logistic regression models adjusted for potential confounders. The study included 849 cases and 906 controls. To capture the maximal "hotness", data from tea, coffee and porridge were combined. Because the final results were consistent between Malawi and Tanzania, we also combined them. "Very hot"compared to "hot"consumers had a 1.92 (95% CI: 1.50, 2.46) ESCC risk. Those who waited less than two minutes compared to those who waited two to five minutes before consumption had a 1.71 (95% CI: 1.34, 2.20) ESCC risk. Those who consumed at a "fast"versus a "slow"speed had a 2.27 (95% CI: 1.45, 3.56) ESCC risk. These trends were consistent in males and females. These findings give more evidence for the role of thermal injury from consuming very hot beverage/food, a potentially modifiable risk factor, in ESCC etiology.

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