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A prospective investigation of early-onset colorectal cancer risk factors—pooled analysis of three large-scale European cohorts

Background

Colorectal cancer (CRC) incidence is rising among adults under 55 years, but its causes remain unclear. Large-scale prospective studies are needed to identify risk factors for early-onset CRC (EOCRC).

Methods

We pooled three large European prospective cohort studies, examining 14 known or suspected risk factors with EOCRC (diagnosed <55 years, N = 1369) and later-onset CRCs (LOCRC) (diagnosed ≥55 years, N = 13,490). Cox proportional hazards models estimated hazard ratios (HRs) and 95% confidence intervals (CIs).

Results

Higher body mass index (BMI, per 5 kg/m² increase), was strongly associated with EOCRC in men (HR 1.33, 95% CI: 1.18–1.51), particularly for early-onset colon cancer (HR 1.55, 95% CI: 1.32–1.82), compared to later-onset disease (HR 1.25, 95% CI: 1.19–1.31) (P_{het} = 0.01). Weaker associations with BMI were observed for women and rectal cancers. Similar sex and subsite specific trends were observed for waist circumference and waist-to-hip ratio. Current smoking (HR 1.24, 95% CI: 1.07–1.44) and alcohol use (HR 1.15, 95% CI: 1.06–1.25) increased EOCRC risk, and physical activity (HR 0.71, 95% CI: 0.54–0.95) was protective.

Discussion

Adiposity, physical inactivity, smoking, and alcohol consumption are risk factors for EOCRC. Risk factors were largely similar between EOCRC and LOCRC, except for adiposity, with stronger EOCRC association in men.

Keywords

Early-onset Colorectal Cancer, Subsite, Physical activity, BMI

Conflict of Interest & Ethical Approval

yes

Abstract submitters declaration

yes

Author: BORCH, Kristin Benjaminsen (UiT The Arctic University of Norway)

Presenter: BORCH, Kristin Benjaminsen (UiT The Arctic University of Norway)

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