Contribution ID: **25** Type: **Oral presentation**

Pre-existing cardiometabolic comorbidities associated with all-cause and cancer-specific mortality among individuals with cancer in the EPIC cohort

Tuesday, 23 March 2021 16:48 (12 minutes)

Introduction: Chronic diseases frequently pre-exist among individuals with cancer and these comorbidities have been hypothesized to affect survival following cancer diagnosis. We investigated associations between pre-existing cardiometabolic comorbidities and all-cause and cancer-specific mortality among individuals with cancer.

Material and method: 26,987 men and women enrolled in the European Prospective Investigation into Cancer and Nutrition (EPIC) with a primary cancer were included in this analysis. Cardiometabolic comorbidities were defined as either type-2 diabetes (T2D), cardiovascular disease (CVD: stroke or myocardial infarction) or both, diagnosed prior to cancer. Associations of cardiometabolic conditions with overall and cancer-specific mortality were estimated using multivariable Cox proportional hazard regression adjusted for sex, educational level, alcohol intake, total energy intake, Mediterranean diet, physical activity, body mass index, hypertension status, menopausal status, and hormone therapy use and stratified for age at recruitment, country, smoking status, stage at diagnosis, and 5-year net-survival of cancer. We also stratified the analysis by the 5-year net-survival of cancer (≤40%, 40-80, ≥80).

Results: During a mean follow-up of 7.2 years, 12,782 deaths were recorded. Pre-existing comorbidities were positively associated with all-cause mortality with hazard ratios (HRs) of 1.25 (95% CI: 1.17-1.34), 1.30 (1.21-1.39), and 1.60 (1.42-1.80) for participants with T2D, CVD, and both, respectively, compared to absence of these comorbidities. Similar positive associations were observed for cancer-specific mortality. Associations were slightly stronger among participants with cancers that have a 5-year net-survival ≥80%.

Discussion: We corroborate and go beyond existing evidence by investigating the combined impact of T2D and CVDs on all-cause and cancer-specific mortality among individuals living with cancer.

Conclusions: A CVD or T2D, and in particular the combination of CVD and TD2, before cancer is associated with increased mortality, thus calling for specific attention to individuals living with cancer with pre-existing cardiometabolic comorbidities.

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Session Classification: Oral presentation