Major Cardiovascular Events: A Calculated Risk in Cancer Survivors?

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Background: Many cancer treatments can negatively impact cardiac function in the short and long term, leading to an increased risk of cardiovascular disease (CVD). In order to reduce CV morbidity and mortality there is an immediate need to identify CVD risk factors in cancer patients. Objective: To explore the association between a simple CVD risk score and the rate of major CVD events among cancer survivors and compare to age-sex matched controls.

Methods: Participants were drawn from the population-based Atlantic Partnership for Tomorrow’s Health cohort (33,587 participants). Detailed health/lifestyle information including cancer history and major CVD events (e.g., MI, stroke) was collected at baseline. We identified 1526 cancer survivor participants between 35-69 years with complete CVD data and matched them to 4 non-cancer participants (n=6034) of the same sex/age (±2 years). CVD risk was calculated using a simple risk prediction model that utilized age, body mass index, systolic blood pressure, antihypertensive medication usage, current smoking and diabetic status. Participants were grouped into risk quartiles (Q1=1%, Q2=5%, Q3=43%) and the relationship between risk score and rate of major CVD events was explored.

Results: Overall, cancer survivors had a 30% higher absolute risk of experiencing a CVD event in comparison to controls (OR=1.3; 95% CI:1-1.7, p=0.07). Compared to controls, survivors in the first, second, and fourth quartiles had a 2.6 (95% CI:1.2-5.6, p=0.015), 1.6 (95% CI:0.9-3.0, p=0.130), and 1.3 (95% CI:0.8-2.0, p=0.270) times greater risk for CVD, respectively. This increase in risk was not explained by traditional risk factors such as obesity and physical activity. Of note, CVD predated a cancer diagnosis in the majority (74%) of cancer survivors.

Conclusions: Overall, CVD prevalence was higher is those that have cancer, but the majority of the CVD events were pre-cancer. Further exploration is needed to explain this finding.

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