

Incidence of cardiovascular disease among breast cancer patients by age at diagnosis

- A registry-based case control study using real-world data from Norway.

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BACKGROUND

Measures are implemented to clinical practice to reduce the cardiotoxicity risk of breast cancer (BC) treatment. However, there is a lack of evidence regarding which cardiovascular diseases (CVDs) clinicians should monitor given a patient's age.

KEY FINDINGS

Older women with BC have a relatively higher incidence of hypertension and atrial fibrillation than younger women with BC. However, there is no significant difference across age groups for heart valve disease, heart failure, peripheral vascular disease, other cardiac arrhythmias and ischemic heart disease.

OBJECTIVES

Investigating and comparing the cumulative incidence of eight cardiovascular diseases in women with breast cancer versus aged-matched controls by age at breast cancer diagnosis.

METHODS

We conducted a case-control registry study utilizing real-world data from the Cancer Registry of Norway, the Norwegian Patient Registry, the Norwegian Prescribed Drug Registry and the Norwegian Primary Care Registry.

We studied two nationwide cohorts of women diagnosed with BC between 2013-2020 (cases) and age-matched controls.

For BC patients, the index date was the date of their BC diagnosis. For controls, the index date was defined as a random date within the index year of the matched BC patient (matching ratio 1:1).

We compared the two cohorts' 4-year cumulative incidence of eight clinically relevant CVDs, stratified by age at index (<60, 60-69, 70+ years).

CONCLUSION

Older women with BC have a relatively higher incidence difference (vs controls) of hypertension and atrial fibrillation than younger women with BC. This evidence may be crucial for personalizing BC therapy with respect to CVD.

RESULTS

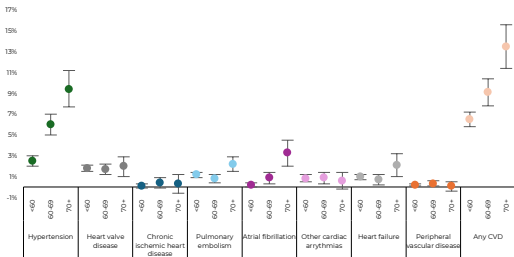
Our study population consisted of 22,231 cases followed for up to eight years (<60 years: 11,036, 60-69: 6,363, 70+: 4,831).

The difference in 4-year cumulative incidence between BC patients and controls significantly increased with age for hypertension (70+: 9.4% [95%CI 7.6%-11.0%] vs. <60: 2.5% [2.0%-3.0%]) and atrial fibrillation (70+: 3.3% [2.1%-4.6%] vs. <60: 0.2% [0.0%-0.4%]) (Figure 1).

For pulmonary embolism, the difference was significantly larger in the highest age group than in the middle (70+: 2.2% [1.5-2.9%] vs. 60-69: 0.8% [0.4-1.2%]).

There were no significant differences across age groups for heart valve disease, heart failure, peripheral vascular disease, other cardiac arrhythmias and ischemic heart disease.

Figure 1: Difference and 95% CI in 4-year cumulative incidence between cases and controls, by CVD and age group at BC diagnosis



Coloured dots show the difference in 4-year cumulative incidence between cases and controls. The lines show the 95% confidence interval for the difference in cumulative incidence.

Contact

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