Atrial Fibrillation in Breast Cancer Patients: Incidence, Prevalence, Risk Factors and Mortality: Longitudinal SEER-Medicare Analysis

Avirup Guha, MD, MPH (EMPH ‘21)
Director of Cardio-Oncology, Georgia Cancer Center, Augusta, GA
Assistant Professor of Medicine, Medical College of Georgia, Augusta, GA

Faculty Mentor: Alvaro Alonso MD, PhD.
Field Advisor: Daniel Addison, MD
Background

• Atrial fibrillation (AF) is one of the most common forms of arrhythmias noted in cancer patients with poor outcomes at 5-years in the non-cancer population

• Goals

1. The burden of AF in a multi-ethnic representative cohort of breast cancer patients.

2. Identify potential cancer-specific risk factors for development of AF.

3. Finally, the effect of incident AF on mortality outcomes.
Methods

- SEER-Medicare linked databases from the year 2007 to 2014 to identify breast cancer patients with age > 65 years
- 5% random sample of Medicare beneficiaries without cancer
- 1-year follow-up
- Fine-Gray models for incidence and Cox-Proportional Hazards Model for risk factor and mortality analysis
Results

Incidence of Atrial Fibrillation (AF)

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Events/Total</th>
<th>HR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>314/18370</td>
<td>Reference</td>
</tr>
<tr>
<td>1</td>
<td>617/18370</td>
<td>1.98 (1.73-2.27)</td>
</tr>
</tbody>
</table>

Gray K-Sample Test P-value: <0.0001

Cancer Specific Risk Factors for AF

New-Onset AF in the first 30 days after cancer diagnosis
- All-cause mortality
- Cardiovascular mortality
- Breast cancer mortality

AF prior to cancer diagnosis
- All-cause mortality
- Cardiovascular mortality
- Breast cancer mortality

Mortality After AF in Breast Cancer Patients

Adjusted Hazards Ratio

* AJCC = American Joint Committee on Cancer

Guha A, ... Alonso A, Addison D. Eur Heart J. 2022;43:300-12
Take-Home

• AF incidence is significantly higher in women after a breast cancer diagnosis.

• Apart from traditional risk factors, higher breast cancer stages and grades at diagnosis are significantly associated with a higher risk of AF.

• All-cause mortality is increased in those with breast cancer who have new-onset AF, and it is mainly driven by cardiovascular mortality and not breast cancer-related mortality.