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The predictive role of mammographic breast calcifications in cardiovascular disease among women undergoing breast cancer screening: Insights from a retrospective database analysis of breast cancer screening.

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Background: Cancer screenings, particularly mammography, are crucial in early detection and management of breast cancer, the most common cancer among women worldwide. Despite advances, disparities persist in cancer outcomes and cardiovascular health, highlighting the need for an integrative approach to care. **Methods:** We conducted a retrospective cohort analysis of 22,118 female patients over 40 years of age diagnosed with breast arterial calcification (BAC) on mammography using the TriNetX database. Each patient with BAC was matched to a control based on age, lab values, socioeconomic class, and co-morbidities. None had ASCVD events before screening. Outcomes included acute myocardial infarction, heart failure, cardiomyopathy, and thromboembolic events. **Results:** Comparing cohorts with and without BAC, we found no significant difference in all-cause mortality (OR: 1.003, P=0.960). However, BAC was associated with increased risks of acute myocardial infarction (OR: 1.281, P=0.003), heart failure (OR: 1.106, P=0.021), cardiomyopathy (OR: 1.437, P<0.001), and DVT/PE (OR: 1.178, P=0.006), particularly DVT (OR: 1.243, P=0.003). Ischemic stroke, CVD, and other cardiovascular conditions showed no significant risk differences, highlighting BAC's predictive value for specific cardiovascular outcomes (Table). **Conclusions:** Our findings affirm BAC on mammography as a significant predictor of specific cardiovascular conditions, such as acute myocardial infarction and heart failure, highlighting its utility in cardiovascular risk stratification. Research Sponsor: None.

Cardiovascular outcomes in propensity score-matched cohort patients with or without BAC detected on screening mammogram.

Outcome	Risk Difference (%)	OR (95% CI)	P Value	95% CI of OR	Event Rates (Calcification Cohort)	Event Rates (No Calcification Cohort)
All-Cause Mortality	0.0	1.003 (0.908-1.106)	0.960	(0.908-1.106)	823/22084	821/22084
Acute Myocardial Infarction	0.3	1.281 (1.085-1.511)	0.003	(1.085-1.511)	323/22084	253/22084
Heart Failure	0.5	1.106 (1.015-1.206)	0.021	(1.015-1.206)	1148/22084	1043/22084
Ischemic Stroke	-0.0	0.985 (0.697-1.391)	0.930	(0.697-1.391)	64/22084	65/22084
DVT/PE	0.4	1.178 (1.048-1.324)	0.006	(1.048-1.324)	631/22084	538/22084
Cardiac Arrest	0.0	1.133 (0.817-1.571)	0.454	(0.817-1.571)	77/22084	68/22084
Peripheral Vascular Disease	0.3	1.092 (0.981-1.215)	0.107	(0.981-1.215)	722/22084	663/22084
CABG/PCI	0.2	1.197 (0.996-1.440)	0.055	(0.996-1.440)	251/22084	210/22084

BAC: Breast Arterial Calcification, OR: Odds Ratio, DVT: Deep Vein Thrombosis, PE: Pulmonary Embolism, AMI: Acute Myocardial Infarction, CABG: Coronary Artery Bypass Grafting, PCI: Percutaneous Coronary Intervention, ASCVD: Atherosclerotic Cardiovascular Disease.

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