Screening Cancer Patients of Developing Heart Disease with ASCVD Risk Stratification at the University Hospital Ambulatory Care Center

Kajol Shah MD[1], Tharakeswari Selvakumar MD, PhD[1], Paul Lee MD[1], Juan Bello MD[1], and Daniel Matassa MD[1]
[1]Department of Medicine, Rutgers New Jersey Medical School

Background

- Compared with adults without a history of cancer, adults with a diagnosed malignancy have a higher 10-year ASCVD risk which is driven by the traditional risk factors and the treatment of the malignancy itself
- In the unique population of cancer survivors, cardiovascular disease ranks second only to malignancy itself as the cause of death
- In 2019, European Heart Journal documented in a population-based study that in patients with a greater than 20% risk of cardiovascular mortality, these cancers were characterized by a less than 30% risk of dying from the indexed cancer itself
- As the number of cancer survivors continue to increase with the advances in therapeutic practices, early detection and treatment of cardiovascular disease is crucial
- ASCVD risk assessment in patients with a diagnosis of cancer with continued clinical surveillance of cardiovascular health could potentially decrease disease burden and serve a vital role in the prevention of cardiovascular morbidity and mortality

Objective:

- To assess if an ASCVD risk stratification is being performed on patients with prostate, lung, breast, and colorectal cancer aged 40 to 79 over a one-year follow-up period (June 2020 to July 2021) in the general medicine clinic of the ambulatory care center of University Hospital.

Primary Outcome:

- Assess the percentage of eligible patients with breast, lung, prostate, and colorectal cancer who had an ASCVD risk stratification performed during the 12-month studied period.

Secondary Outcomes:

- Assess the percentage who were started on a statin for primary prevention during the 12-month studied period.
- Assess the number of patients who already had a simultaneous diagnosis of cardiovascular disease.

Methods and Materials

- ***Study population:***

Patients with breast, lung, prostate, and colorectal cancer treated in the internal medicine primary care clinic at the Ambulatory Care Center of University Hospital.

- ***Study period:***

June 2020 to July 2021.

- **Study type:**

Retrospective chart review.

- ***Data collection:***

Retrospective chart review was done on patients seen at the ambulatory care clinic and data pertaining to their cancer and cardiovascular history was recorded. Data analysis and proportions were calculated using Microsoft excel spreadsheet.

- ***Inclusion/Exclusion criteria:***

Patients aged 40-79 diagnosed with prostate, lung, breast, or colorectal cancer will be included. Patients with the four malignancies mentioned above not in the selected age range, those who have already have a history of cardiac disease, and those patients for which the chart includes a “break-the-glass" warning will be excluded

- ***Statistical Analysis:***

Descriptive statistics with mean/standard deviation will be used for continuous variables, and proportions will be used for quantitative variables. Confidence intervals will be calculated at 95%.

Results

Table 1. Characteristics of Identified Cases

Sample size - n	82
Female patients - (%)	71 %
Age – Mean ± SD (years)	61 ± 11.5
Dyslipidemia/hyperlipidemia - (%)	36.6 %
Hypertension - (%)	36.6 %
Diabetes - (%)	30.5 %
Smoking history - (%)	31.7 %
Prior history of CV disease - (%)	12 (15%)
Newly diagnosed with CV disease during the study period – n (%)	2 (2.4%)
Already on statin prior to study period - n (%)	21 (26%)
Not on statin prior to study period – n (%)	61 (74%)
ASCVD risk stratification during the study period - n (%)	19 (31%)
Started on statin during the study period – n (%)	5 (8%)

Figure 1. Cancer type in study population

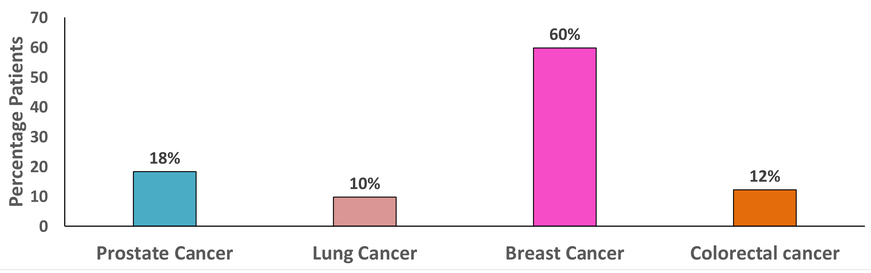
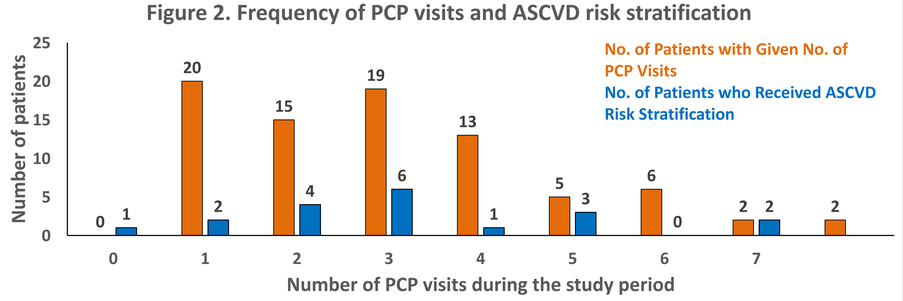


Figure 2. Frequency of PCP visits and ASCVD risk stratification



Discussion

Key Findings:

- ASCVD risk stratification was done on 31% of patients with cancer (breast, prostate, colorectal or lung) during the study period
- Only 8% patients with cancer were started on statin during the study period
- 15% patients with cancer had a prior diagnosis of cardiovascular disease.

Potential QI steps and future directions:

- Educational seminars describing the link between cancer and cardiovascular disease for residents during academic half-day
- Including cancer diagnosis in the healthcare maintenance smart to serve as a reminder for cardiac risk assessment

References

1. https://onlinelibrary.wiley.com/doi/full/10.1002/ejhf.1920
2. https://www.acc.org/Latest-in-Cardiology/Articles/2021/05/10/14/42/ASCVD-Risk-Stratification-Among-Cancer-Survivors
3. https://ascopost.com/issues/may-10-2021/shared-risk-factors-for-preventing-cancer-and-cardiovascular-disease-the-evolving-focus-of-cardio-oncology/
4. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7968105
5. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0247919
6. Miller KD, Nogueira L, Mariotto AB, et al. Cancer treatment and survivorship statistics, 2019. *CA Cancer J Clin* 2019;69:363-85.
7. Sturgeon KM, Deng L, Bluethmann SM, et al. A population-based study of cardiovascular disease mortality risk in US cancer patients. *Eur Heart J*. 2019;40(48):3889-3897. doi:10.1093/eurheartj/ehz766

RUTGERS