Assessment of Cardiovascular Disease Risk Factor Control in Cancer Patients

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Abstract

Background: Heart disease and cancer (CA) continue to be the two leading causes of death in the United States. Despite considerable advancements in the treatment of cancer, CV disease remains a significant cause of morbidity and mortality in these patients. While evolving cancer therapies may allow our patients to grow older, their cardiac risk factors cannot be overlooked. Cancer patients with concomitant CV disease have a lower long term survival rate compared to cancer patient without heart problems. In response to this, Cardio-Oncology has emerged as a multidisciplinary field aimed at providing quality cancer care while addressing patients' cardiovascular health.

Method: A total of 258 cancer patients seen between December 2017 and June 2019 at USA Mitchell Cancer Institute were randomly selected from a pool of over 1,300 patients. These patients had a diagnosis of one or more malignancies as well as one or more established cardiac risk factors. Retrospective chart review was performed to gather data reflective of classic cardiac risk factors, including systolic (SBP) and diastolic (DBP) blood pressure, body mass index, LDL levels, and hemoglobin A1C. Numerical values were grouped, averaged, and compared using two-tailed student's t-test and ANOVA tests.

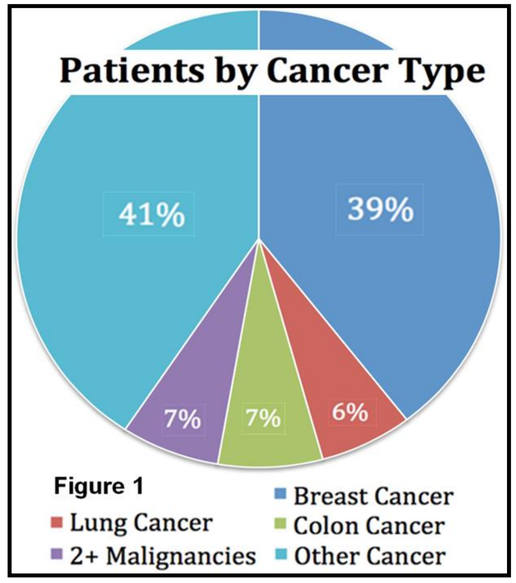

Figure 1

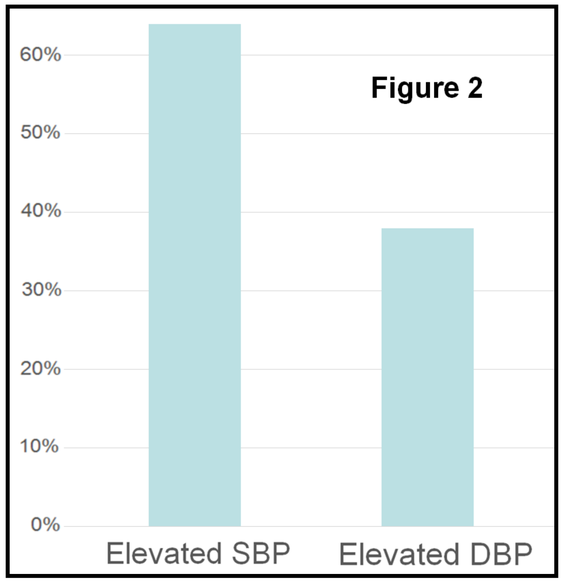

Figure 2

Table 1: Presence of Risk Factors in Cancer Patients

Risk Factor	*N*	Percentage of Sample
HTN		
SBP >130	165	64.0%
DBP >80	99	38.3%
HLD Diagnosis	131	50.8%
Diabetes Diagnosis	106	41.1%
BMI		
Obese (BMI >30)	83	32.2%
Morbidly Obese (BMI >40)	29	11.2%

Table 2

Group	Mean (mmHg)	*p*
SBP in Patients <65 y/o	135.0	0.023
SBP in Patients ≥65 y/o	140.0	
DBP in Patients <65 y/o	80.9	<0.001
DBP in Patients ≥65 y/o	75.1	
PP in Patients <65 y/o	53.7	<0.001
PP in Patients ≥65 y/o	64.6	

Results

- Breast CA was most prevalent (39%; Fig. 1); notable as this group is likely to receive cardiotoxic chemotherapy
- Mean SBP: 137.4 mmHg, mean DBP: 77.8 mmHg; 64% had SBP >130 mmHg; 38% had DBP >80mmHg (Fig. 2)
- SBP and PP were higher in patients ≥65 yo while DBP was higher in patients <65 yo ($P < 0.05$; Table 2)
- When SBP, DBP, and PP were compared across three different age groups: <50, 50 to 70, and >70; SBP and PP were highest in patients >70 yo while DBP was highest in patients <50 yo ($P<0.05$)
- 32% of all patients were obese (BMI >30 kg/m^2); 11% were morbidly obese (BMI >40 kg/m^2) (Table 1)
- HLD was more common than diabetes among patients, 50.8% and 41.1% respectively. Adequacy of cholesterol and diabetes control could not be assessed due to paucity of available lab data in the EMR.

Conclusion

Our study demonstrates that despite excellent cancer therapies allowing longer survival, providers may be overlooking cardiac risk factors with age, predisposing patients to preventable cardiac comorbidities. More data is needed into control of diabetes and dyslipidemia in this population. Our findings provide insight into an actionable area where cardiologists and primary physicians, working closely with oncologists, can help reduce CV mortality in cancer patients, and hence stressing the need for the novel field of cardio-oncology.

References

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2. Koene RJ, Prizment AE, Blaes A. Shared Risk Factors in Cardiovascular Disease and Cancer. Circulation. 2016 Mar 15;133(11):1104-14.

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