Defining Breast Cancer in Hawaii: Are Socioeconomically Disadvantaged Patients Receiving Appropriate Screening Mammography?

Ashley Marumoto MD[1], John Vossler MD [1], Stacey Woodruff MD[1,2]

John A. Burns School of Medicine, University of Hawaii, Department of Surgery, Honolulu, HI[1] The Queen's Medical Center, Honolulu, HI[2]

Background

Undergoing screening mammogram results in decreased breast cancer mortality[1]

Uninsured women are less likely to get mammograms than insured women[2]

Regularly seeing a primary care physician is associated with increased screening mammography[3]

We anecdotally observed that women at the resident run clinic were diagnosed at later stages of breast cancer and hypothesized that this was in part due to lack of screening

Methods

Included: women, age ≥ 40, admitted with breast cancer or carcinoma in situ

Excluded: patients not diagnosed in Hawaii or their screening or staging record was incomplete

Patients were grouped as follows:

- Socially disadvantaged (SD, n=21): patients without a primary care physician (PCP) or who received their primary care from the free-of-charge, resident-run clinic
- Socially advantaged (SA, n=49): patients with a non-resident PCP

Predictors of receiving appropriate screening mammography and late stage breast cancer presentation (stage IIIB or greater) were calculated by bivariate (t-test of proportions) and multivariate (multivariate logistic regression) analysis

Results

61.22% of SA patients vs. 9.52% of SD patients received appropriate screening mammography

Predictors of No Screening

	Multivariate Analysis			
	OR of Adverse Outcome Given Risk Factor			
	OR	95%CI Low	95%CI High	p-value
Age <50	0.734	0.155	3.206	0.684
Race Asian				
Race Hawaiian/Pacific Islander	9.579	0.878	246.433	0.092
Race White	0.749	0.107	4.616	0.759
Race Other	1.474	0.365	5.909	0.580
Non smoker				
Former smoker	0.761	0.184	2.922	0.693
Current smoker	11.398	1.418	252.487	**0.045**
Family history	0.343	0.075	1.306	0.133
Socially disadvantaged	15.261	3.158	117.907	**0.002**

Predictors of Late Stage at Diagnosis

	Multivariate Analysis			
	OR of Adverse Outcome Given Risk Factor			
	OR	95%CI Low	95%CI High	p-value
Age <50	1.668	0.329	9.128	0.538
Race Asian				
Race Hawaiian/Pacific Islander	0.453	0.036	4.975	0.520
Race White	0.599	0.055	5.359	0.653
Race Other	0.392	0.056	2.211	0.308
Non smoker				
Former smoker	2.979	0.608	18.155	0.196
Current smoker	2.794	0.341	27.739	0.348
Family history	2.812	0.544	19.328	0.243
Socially disadvantaged	5.213	0.996	32.124	0.057
Not Screened	32.496	5.175	371.441	**0.001**

Conclusions

Being socioeconomically disadvantaged is independently associated with not receiving appropriate screening mammography

Not receiving appropriate screening mammography is independently associated with presenting with late stage breast cancer

The findings are likely multifactorial and may include issues related to access to and cultural attitudes towards health care

Nonetheless, this study identifies a group of patients who may benefit from improved adherence to breast cancer screening guidelines

References

1. Tabar L, Dean PB, Chen TH, et al. The incidence of fatal breast cancer measures the increased effectiveness of therapy in women participating in mammography screening. Cancer. 2019;125(4):515-523.

2.American Cancer Society. Breast Cancer Facts and Figures. 019-2020. https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/breast-cancer-facts-and-figures/breast-cancer-facts-and-figures-2019-2020.pdf *Accessed on 5/17/2020*

3. Flores EJ, López D, Miles RC, et al. Impact of Primary Care Physician Interaction on Longitudinal Adherence to Screening Mammography Across Different Racial/Ethnic Groups. J Am Coll Radiol. 2019;16(7):908-914.

Abstract: 787744
ashley.marumoto@gmail.com