Uptake of Genetic Counseling and Testing in a Clinic Based Population of Women with Breast Cancer

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INTRODUCTION

- Carriers of pathogenic variants in cancer susceptibility genes have an elevated risk of developing breast, ovarian, and other cancers
- A medical record review was performed to determine the uptake of genetic counseling and testing in a clinic-based population of women with breast cancer

METHODS

- Medical records of 150 women with breast cancer at the Karmanos Cancer Institute were reviewed to determine the proportion eligible for genetic testing according to National Comprehensive Cancer Network guidelines
- We also assessed genetics referral rates, appointment completion and results of genetic testing
- Using chi-square and ANOVA tests, we analyzed the association of demographic and clinical factors with eligibility and referral to genetic counseling

RESULTS

- 91 (60.7%) women met NCCN criteria for genetic testing
- *Eligible* women were more likely to be
  - Younger (52.6 vs. 64.0 years old, $p < .001$)
  - White (75.0% vs. 54.5%, $p = .026$)
  - Have Medicaid (75.0%) or private insurance (72.9%) vs. Medicare (44.8%), $p = .002$
- Women were *more likely to be referred* for genetic counseling if they were eligible (59.3% vs 16.9%, $p < .001$)
- Women *less likely to be referred* if they had
  - Medicare (40.0%) compared to Medicaid (71.4%) or private insurance (72.0%),
  - Stage IV disease (48.3%) compared to stages I-III (67.8%)
- Of eligible women, 59.3% had a genetic counseling appointment scheduled, and of those, 78.0% attended their appointment

Table I. Study sample demographics

Characteristic	Total	Eligibility Status	
		Ineligible	Eligible
Total (N percent)		59 (39.3%)	91 (60.7%)
Age at diagnosis (years)	57.1	64	52.6
Race (N percent)*			
Black	99 (66.0%)	45 (45.5%)	54 (54.5%)
White	44 (29.3%)	10 (25.0%)	30 (75.0%)
Asian	4 (2.7%)	---*	---*
American Indian	2 (1.3%)	---*	---*
Unknown	1 (0.7%)	---*	---*
Insurance type (N percent)			
Private	70 (46.7%)	19 (27.1%)	51 (72.9%)
Medicare	67 (44.7%)	37 (55.2%)	30 (44.8%)
Medicaid	12 (8.0%)	3 (25.0%)	9 (75.0%)
No insurance	1 (0.7%)	1 (100.0%)	0 (0.0%)
Cancer stage (N percent)			
I	52 (34.7%)	22 (42.3%)	30 (57.7%)
II	35 (23.3%)	14 (40.0%)	21 (60.0%)
III	16 (10.7%)	5 (31.3%)	11 (68.8%)
IV	47 (31.3%)	18 (38.3%)	29 (61.7%)

*Note that subsequent analyses that examine racial differences will be restricted to Black and White women due to small subsample size.

RESULTS

Table II. Factors Associated with Genetic Counseling Appointment Completion

	Attended Genetic Counseling Appointment	
	No (Percent N)	Yes (Percent N)
Genetic counseling eligibility		
Ineligible	3 (30%)	7 (70%)
Eligible	12 (22%)	42 (78%)
Race		
Black	10 (26%)	29 (74%)
White	4 (24%)	13 (77%)
Cancer stage		
Early stage (stages I-III)	12 (26%)	34 (74%)
Late stage (stage IV)	3 (17%)	15 (83%)
Insurance type		
Medicaid	1 (17%)	5 (83%)
Medicare	7 (44%)	9 (56%)
Private	7 (17%)	34 (83%)
Mean age at diagnosis (years)	52.7	52.5

- 95.9% attendees completed genetic testing
- No apparent differences in appointment completion based on race; 74.0% of Black and 77.0% of White women completed their appointments
- 46.2% of eligible women had genetic testing
- 8.5% had a pathogenic variant, 60.9% had negative results, and 30.4% had a variant of unknown significance

CONCLUSIONS

- The results of this study indicate that lack of genetic counseling referrals contribute to a gap between the need for and completion of genetic testing
- By understanding barriers to genetic counseling and testing, future clinical initiatives could effectively improve accessibility to genetic counseling services