Breast Cancer Risk Management Following Universal Risk Stratification:
Impact of Risk Communication on High-Risk Clinic Visits, Chemoprevention, Genetic Counseling, and Genetic Testing

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Background

- A subset of women carry elevated risk for breast cancer (lifetime risk ≥20%).
- These women have options for managing their risk, including:
    - Attending a specialty high-risk clinic
    - Risk-reducing medication (chemoprevention)
    - Genetic risk assessment (counseling and/or testing).
- Unfortunately, these services are dramatically underutilized.
    - High-risk clinic appointment: 14%
    - Chemoprevention: 12-17% of eligible women
    - Genetic testing: 14-51% of eligible women
- Screening mammography represents one potential opportunity to evaluate and communicate breast cancer risk stratification information and risk-based recommendations to patients and providers. This approach is known as **universal risk stratification**.
- For screening mammography patients, Moffitt Cancer Center (MCC) recently implemented universal risk stratification with automated calculation of estimated lifetime risk scores using three models: Tyrer-Cuzick7(TC7), BRCAPRO, and modified Gail.
- **The purpose of the present study is to characterize uptake of high-risk clinic visits, chemoprevention, genetic counseling, and genetic testing among following universal risk stratification.**

Methods

- Women presenting for screening mammography underwent universal risk stratification as part of routine clinical care.
- Estimated lifetime risk was computed using the modified Gail, Tyrer-Cuzick (TC7), and BRCAPRO models.
- Numerical risk information was sent to referring providers via the electronic medical record.
- Women received a mailed letter with categorical risk information ("average" or "elevated"). Women with elevated risk also received contact information for the institution's high risk breast clinic.
- High (≥20% lifetime) risk women (n=153) were approached and a subset (n=71, 46% accrual rate) consented to a follow-up study.

Participant Characteristics (N=71)	Mean (SD) or %
Age (years)	52.3 (8.4)
Race: Caucasian	90%
Ethnicity: Hispanic/Latina	11%
Partner Status: Married/Cohabiting	79%
Education: ≥College	81%
Employment Status: Currently Working	71%
Household Income: ≥$70,000/year	68%
Health Insurance Type: Private	74%

Measures

- At 6-months post-screening, women self-reported whether they had:
    a) Attended a high-risk clinic appointment
    b) Initiated chemoprevention medication
    c) Attended genetic counseling
    d) Received genetic testing

Results

- A total of 66 women (93%) completed the 6-month follow-up.
- Seven patients (11%) reported uptake of any BC risk management behaviors.

Uptake of Risk-Reducing Behavior (N=66)	%
Appointment with high risk specialist	
Yes, attended.	6%
No, but I have scheduled an appointment.	8%
No, and I will not schedule an appointment.	85%
Don't know	1%
Taken tamoxifen or raloxifene*	
Yes	2%
No	97%
Genetic counseling appointment*	
Yes, attended.	5%
No, but I intend to.	6%
No, and I do not intend to.	88%
Completed genetic testing*	
Yes	5%
No	94%

*One patient missing data

Conclusions

- The rates of breast cancer risk management behaviors observed in this study are lower than the rates previously observed in the literature.
    - This may be due to the follow-up time point selected.
    - Extended follow-up is necessary to understand uptake of risk-management strategies in high risk women unaffected by breast cancer.
- Universal risk stratification alone may not lead to increased uptake of breast cancer risk management behaviors.
    - Interventions may be needed to increase the uptake of risk-appropriate behaviors in the growing group of women identified as high risk following implementation of universal risk stratification programs.

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