

Effect of Genetic Testing Results on Patient-reported Quality of Life Among Women Undergoing Panel Testing for Newly Diagnosed Ovarian Cancer



Sarah S. Lee¹, Melissa K. Frey², Deanna Gerber¹, Zachary Schwartz³, Jessica Martineau¹, Kathleen Lutz¹, Erin Reese¹, Emily Dalton⁴, Anne Olsen⁵, Julia Girdler¹, Bhavana Pothuri¹, Leslie Boyd¹, John P Curtin¹, Douglas Levine¹, Stephanie V. Blank⁵

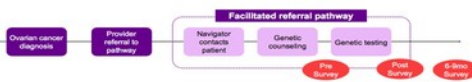
1. New York University School of Medicine, New York, NY 2. Weill Cornell School of Medicine, New York, NY 3. Cedar Sinai Medical Center, Los Angeles, CA 4. Ambry Genetics, Aliso Viejo, CA 5. Icahn School of Medicine at Mount Sinai, New York, NY

OBJECTIVE

- This study compared **patient-reported stress, anxiety, and depression** between women with newly diagnosed ovarian cancer with **pathogenic genetic testing results** versus women with **non-informative** (i.e., variants of unknown significance (VUS)) or **negative results**.

METHODS

- Genetic testing via a facilitated referral pathway (Frey et al, Gynecologic Oncology 2020).
- Referral by gynecologic oncologist for genetic counseling and genetic testing within 6 weeks of diagnosis from 10/2015 to 5/2019.
- Patients who were English-speaking completed three validated quality of life (QoL) instruments:
 - Impact of Events Scale (IOES)
 - State Trait Anxiety Questionnaire (STAI)
 - Hospital Anxiety and Depression Scale (HADS)
- Two way mixed ANOVA was performed to analyze the effect of genetic testing results on quality of life over time, with significance $p < 0.05$.



RESULTS

- One hundred ten women were enrolled in the pathway, and 83 (76%) underwent genetic testing.
 - 15 (18%) had potentially actionable pathogenic mutations (*BRCA1-8*, *BRCA2-4*, *MSH2-2*, *MRE11A-1*)
 - 26 (31%) had VUS results
 - 3 (4%) had both a pathogenic mutation and a VUS result
 - 42 (51%) had negative results.

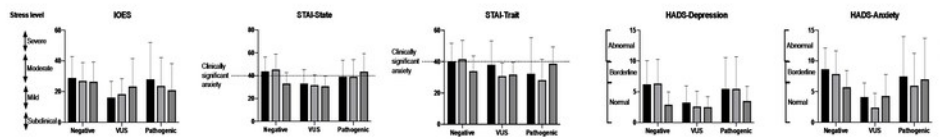
Finding a pathogenic mutation does not negatively impact quality of life for women with ovarian cancer

Negative genetic testing results may allay anxiety for women with ovarian cancer

RESULTS

- There were no differences in age, insurance, treatment (surgical debulking vs. neoadjuvant chemotherapy), stage, or histology between the three groups.
- Of 76 English-speaking women, 60 women (83%) completed QoL assessments pre and post genetic testing, and 37 (48%) at 6-9 months post genetic testing.
- For all women, test results did not significantly affect QoL scales across all time points (pre, post-genetic testing, and at 6-9 months)
- By mean scores across all-comers, women demonstrated mild stress at each time point and clinically significant anxiety immediately post-GT.
- All women had a statistically significance decrease in HADS depression scores over time from pre-GT to 6 months post-GT (mean score 4.98 vs 2.97, $p=0.020$), consistent with improvement in depression.
- Women with VUS had lower HADS mean anxiety scores across time (3.62) compared to those with pathogenic mutations (7.44) or those testing negative (6.83, $p=0.029$).
- For women testing negative for mutations, there was a significant decrease in clinically significant anxiety by STAI-state score at 6 months ($p=0.002$) and a decrease in borderline anxiety by HADS scores at 6 months ($p=0.005$). This effect was not present for women with pathogenic mutations or VUS.

FIGURE 1. Mean scores across time for each QoL scale



Corresponding author- Sarah S. Lee sarah.lee@nyulangone.org