Comparison of three testing strategies for germline genetic testing for homologous recombination deficiency mutations in women with epithelial ovarian cancer

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Topic: Financial Toxicity and Disparities

Objectives
One in five women with epithelial ovarian cancer (EOC) will have an inherited germline mutation, yet testing rates are low. Point-of-care testing, where abbreviated counseling with in-office testing is offered, may increase testing rates. We aimed to compare testing rates among three different testing strategies used in our practice over time.

Methods
All patients with EOC were identified in the electronic medical record (EMR) using diagnosis codes at an urban academic gynecologic oncology practice from 1/2015 to 12/2020. IRB approval was obtained. EMR review was performed. Trends in genetic counseling and testing rates were analyzed across three different practice models: embedded genetic counselor in the clinic (before 5/2017), referral out for genetic counseling (5/2017-10/2017) and point-of-care office testing (after 10/2017). Descriptive statistics and chi-square tests were performed.

Results
431 patients with EOC patients were identified. Patients were predominantly white (88%), older women (average age 67.9), with Medicare (58%) or private insurance (39%), and advanced stage disease (63% Stage III, 17% Stage IV) of high-grade serous (77%) histology. Germline BRCA1 or 2 mutations were identified in 10.5% and 4.5% of patients, and 10.6% of patients had different homologous recombination deficiency mutation. Significant differences in genetic testing rates were identified by strategy (p < 0.0001). During the embedded genetic counselor period, 66% (173/263) of patients underwent genetic testing. Testing dropped to 13% (13/104) when patients were referred out, then improved to 65% (160/245) with the initiation of point-of-care testing (Figure 1). 80% of patients eventually received germline genetic testing; 44% of patients initially not tested (40/91) underwent catch-up testing after initiation of point-of-care testing.

Conclusions
Germline genetic testing rates for women with EOC were comparable for embedded genetic counselor and point-of-care testing strategies. Point-of-care testing has allowed catch-up testing over time, whereas the referral out strategy presented a substantial barrier. To achieve guideline-concordant care, point-of-care testing with post-test counseling represents a feasible strategy for gynecologic oncology practices where access to an embedded genetic counselor is not possible.

Abstract Table or Graph
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