Fertility outcomes in women with hereditary cancer syndromes

Elizabeth Connelly, MD – Kaiser San Francisco

Topic: Genetics

Objectives

Hereditary gynecologic cancer syndromes are often diagnosed in women of reproductive age who desire fertility. Genetic mutations and risk reducing recommendations may impact the ability to conceive. We evaluated rates of pregnancy, reproductive endocrinologist (REI) referral, use of assisted reproductive technology (ART), and pregnancy outcomes in women with diagnosed hereditary cancer syndromes.

Methods

This is a single institution retrospective cohort study of women aged 21-45 years old diagnosed with a pathogenic variant in BRCA 1, BRCA 2, MLH1 or MSH2 between 1/1/2018 and 12/31/2021. Women were excluded if they had a prior bilateral salpingo-oophorectomy, sterilization procedure, hysterectomy or diagnosis of breast or ovarian cancer. Clinical and demographic variables were extracted from the electronic medical record and chart reviewed. The primary outcome was rate of pregnancy and live birth. Secondary outcomes included use of REI and ART. A Chi square test was used to compare these rates prior to and after the passage of SB-600, a California law that requires insurers to cover fertility preservation when a medical treatment causes iatrogenic infertility.

Results

We identified 498 patients during the study period. BRCA 2 (48.8%) or BRCA 1 (44.2%) mutations were most common. The median (Q1-Q3) age at diagnosis was 31.5 (27-38) years old. The cohort was 53.6% white, 21.7% Hispanic, 13.1% Asian and 5.4% Black. Within our cohort, 291 (58.6%) women were nulliparous at time of diagnosis. Only 39 (7.8%) received a referral to REI after diagnosis. Of the patients who received an REI referral, 21 (53.8%) utilized ART. Age and mutation type were not associated with referral to REI or use of ART. The proportion of women who became pregnant following their genetic evaluation was 17.9% and proportion of live birth was 16.5%. Passage of SB-600 did not impact referral rates to REI or increase utilization of ART in this cohort.

Conclusions

Most women were nulliparous at the time of diagnosis of their BRCA 1, BRCA 2, MLH1 or MSH 2 mutation. Only a small minority of patients with hereditary cancer mutations were referred to REI despite legislative mandates increasing fertility coverage. This showcases the underutilization of fertility services for young mutation carriers.