FACTORS ASSOCIATED WITH EARLY VERSUS LATE DEVELOPMENT OF BREAST AND OVARIAN CANCER IN BRCA1 AND BRCA2 POSITIVE WOMEN

Publication No. _____

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Hereditary breast and ovarian cancer (HBOC) is caused by a mutation in the BRCA1 or BRCA2 genes. Women with a BRCA1/2 mutation are at increased risks for breast and ovarian cancer and often develop cancer at an earlier age than the general population. However, some women with a BRCA1/2 mutation do not develop breast or ovarian cancer under the age of 50 years. There have been no specific studies on BRCA positive women with no cancer prior to age 50, therefore this study sought to investigate factors within these women with no cancer under age 50 with respect to reproductive risk factors, BMI, tumor pathology, screening history, risk-reducing surgeries, and family history. 241 women were diagnosed with cancer prior to age 50, 92 with cancer at age 50 or older, and 20 women were over age 50 with no cancer. Data were stratified based on BRCA1 and BRCA2 mutation status. Within the cohorts we investigated differences between women who developed cancer prior to age 50 and those who developed cancer at age 50 or older. We also investigated the differences between women who developed cancer at age 50 or older and those who were age 50 or older with no cancer. Of the 92 women with a BRCA1/2 mutation who developed cancer at age 50 or older, 46 developed ovarian cancer first, 45 developed breast cancer, and one had breast and ovarian cancer diagnosed synchronously. BRCA2
carriers diagnosed age 50 or older were more likely to have ER/PR negative breast tumors when compared to BRCA2 carriers who were diagnosed before age 50. This is consistent with one other study that has been performed. Ashkenazi Jewish women with a BRCA1 mutation were more likely to be diagnosed age 50 or older than other ethnicities. Hispanic women with a BRCA2 mutation were more likely to be diagnosed prior to age 50 when compared to other ethnicities. No differences in reproductive factors or BMI were observed. Further characterization of BRCA positive women with no cancer prior to age 50 may aid in finding factors important in the development of breast or ovarian cancer.