Oral contraceptives and the risk of hereditary ovarian cancer

Reviewers: John Han-Chih Chang, MD and Kenneth Blank, MD

Introduction

Women with mutations to the BRCA1 or 2 genes are at increased risk for the development of breast and ovarian cancer. The estimated lifetime risk of ovarian cancer in women with BRCA1 mutations is 45% and in women with BRCA2 mutations 25%. Women with a strong family history of ovarian cancer and those with proven mutations to the BRCA genes propose a challenging clinical dilemma. Most gynecologic oncologists offer treatment in the form of diligent screening with ultrasound and bloodwork, although the efficacy of this regimen is not known. Some gynecologic oncologists offer bilateral oophorectomy (removal of both ovaries). This procedure is done on an outpatient basis and carries little morbidity, with the obvious exception that the patient is rendered sterile.

Another option that has become popular is the use of oral contraceptives. Oral contraceptives are known to protect against the development of ovarian cancer. The estimated risk reduction in unselected women taking oral contraception is 50% or more. The mechanism of protection is unclear but likely due to the stopping of ovulation. The Hereditary Ovarian Cancer Study Group undertook a study to determine if oral contraceptives are effective at reducing the rate of ovarian cancer in selected patients with mutations to BRCA1 or BRCA2.

Materials and Methods

The study enrolled 207 patients with hereditary ovarian cancer and a BRCA1 mutation (179 patients) or a BRCA2 mutation (28 women). As controls, 161 sisters who were free of ovarian cancer were also enrolled. The investigators then performed a retrospective review of oral contraception use in the two groups. Information was obtained by written questionnaire or verbal interview and was compared between the two groups.

Results

After adjusting for year of birth and parity, the investigators found use of oral contraceptives significantly reduces the risk of developing ovarian cancer. The protection afforded by oral contraception use was approximately 50% and rose with increasing years of usage.

Discussion and Conclusion

The study can be criticized on several counts, including the bias that may be inherent in any retrospective review. Additionally,
the authors point out that ideally the 'sister' group would all have BRCA mutations. Notwithstanding these limitations, the study provides evidence that oralcontraception protects women with BRCA mutations from ovarian cancer.