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Role of Surgery in Ovarian Cancer Prevention

Takae Kataoka*

Department of Medical Oncology, Nagoya Memorial Hospital, Nagoya, Japan

***Corresponding author:** Takae Kataoka,Department of Medical Oncology, Nagoya Memorial Hospital, Nagoya, Japan, E-mail: m-takae@med.nagoya-u.ac.jp

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Description

Women identified as carrying the BRCA1 or BRCA2 mutation are at high risk for developing ovarian cancer as well as breast cancer. The lifetime risk of developing ovarian cancer for a woman with a BRCA1 mutation is approximately 30% to 60%, although some estimates are as high as 85%. Patients with BRCA2 mutations have an estimated lifetime ovarian cancer risk of approximately 10% to 20%. The optimal management strategy for a woman with an inherited susceptibility to ovarian cancer is unclear. To date, no convincing evidence demonstrates that surveillance for ovarian cancer is effective. This may reflect the low ovarian cancer incidence of approximately 1 in 70 women in the general population. Screening for ovarian carcinoma has been hampered by the low sensitivity and specificity of the available techniques, which include pelvic examination, serum CA-125 determinations, and transvaginal ultrasound. In addition, a laparoscopy or a laparotomy is required to make the diagnosis. Currently, routine screening in the general population has not been shown to impact on the morbidity and mortality associated with ovarian cancer, and it is not recommended.

The utility of increased surveillance for patients with BRCA1 and BRCA2 mutations has not been thoroughly investigated. It is known, however, that approximately 70% of patients diagnosed with ovarian cancer have stage III or IV disease and that these patients generally have poor 5-year median survival rates. Faced with a lack of effective screening for ovarian cancer and the poor prognosis of advanced disease, prophylactic oophorectomy has been suggested as a reasonable alternative for women considered being at high risk for invasive cancer. The National Institutes of Health Consensus Panel on Ovarian Cancer and the American College of Obstetricians and Gynecologists have concluded that prophylactic bilateral oophorectomy should be recommended to women older than 35 or after childbearing is completed if there is an inherited predisposition for ovarian cancer. The Cancer Genetics Consortium reviewed the same information and concluded that the evidence is insufficient to recommend for or against prophylactic oophorectomy as a measure to reduce ovarian cancer risks. It is clear that prophylactic bilateral oophorectomy does not completely eliminate the risk of developing abdominal carcinomatosis that histologically resembles ovarian cancer.

Potentially inherited ovarian cancer families studied at the National Cancer Institute, prophylactic oophorectomy had been performed on 28 women. Three of these women developed ovarian-like carcinomatosis 1 to 11 years after oophorectomy. This finding may reflect the fact that the peritoneum has the same embryologic origin as the ovarian epithelium and that the entire peritoneum may be at risk for malignant degeneration. Alternatively, occult ovarian cancer may have been present at the time of surgery. An analysis of 12 families with inherited breast/ovarian cancers and noted a reduction in ovarian cancer in oophorectomized women compared with women who had not undergone surgery. Compared with adjusted Connecticut Tumor Registry data, a 24-fold excess of ovarian cancer was found among nonoophorectomized women, and a 13-fold excess of “ovarian-like” cancer was found among the women who had undergone oophorectomy. These results were not statistically significant. Patients with BRCA1 and BRCA2 mutations are obviously at risk for both breast and ovarian cancer. Clinical decisions regarding prophylactic surgery are difficult when breast and ovary are considered independently, and the decisions become more challenging when they are considered together. Control subjects included women with BRCA1 mutations who had not had oophorectomy and had no prior history of breast or ovarian cancer.

Statistically significant reduction in breast cancer risk after oophorectomy when compared to the control cohort. The reduction in breast cancer risk appeared to increase over time. The use of hormone replacement therapy did not negate the reduction in breast cancer risk after oophorectomy in these patients. Evidence indicates that the use of oral contraceptives is associated with a decreased risk of ovarian cancer. The use of oral contraceptives has not been analyzed in patients with BRCA1 and BRCA2 mutations, and what effect, if any, these medications would have on the incidence of breast cancer in these patients is unknown.