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Cytoreductive Surgery and HIPEC in Recurrent Epithelial Ovarian Cancer: A Prospective Randomized Phase III Study

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ABSTRACT

Background. The current treatment of ovarian cancer consists of cytoreductive surgery (CRS) and systemic chemotherapy. The aim of this study was to examine if hyperthermic intraperitoneal chemotherapy (HIPEC) is an alternative modality to treat this category of patients along with a second attempt of surgical resection and second- or third-line systemic chemotherapy afterward.

Methods. In an 8-year period (2006–2013), 120 women with advanced ovarian cancer (International Federation of Gynecology and Obstetrics [FIGO] III_c and IV) who experienced disease recurrence after initial treatment with conservative or debulking surgery and systemic chemotherapy were randomized into two groups. Group A comprised 60 patients treated with CRS followed by HIPEC and then systemic chemotherapy. Group B comprised 60 patients treated with CRS only and systemic chemotherapy.

Results. The mean survival for group A was 26.7 versus 13.4 months in group B ($p < 0.006$). Three-year survival was 75 % for group A versus 18 % for group B ($p < 0.01$). In the HIPEC group, the mean survival was not different between patients with platinum-resistant disease versus platinum-sensitive disease (26.6 vs. 26.8 months). On the other hand, in the non-HIPEC group, there was a statistically significant difference between platinum-sensitive versus platinum-resistant disease (15.2 vs. 10.2 months, $p < 0.002$). Complete cytoreduction was associated with longer survival. Patients with a peritoneal cancer index score of <15 appeared also to have longer survival.

Conclusions. The use of HIPEC along with the extent of the disease and the extent of cytoreduction play an important role in the survival of patients with recurrence in an initially advanced ovarian cancer.

The most common cause of primary ovarian malignancy is epithelial carcinoma, accounting for 95 % of ovarian neoplasia. Its exact cause has not yet been identified; however, many several pathophysiologic mechanisms have been suggested, including the dedifferentiation of ovarian surface epithelium or the attachment of distal fallopian tube cells to the ovary during ovulation.[1]

The lifetime risk of epithelial ovarian cancer (EOC) is 1 of 70 women; it is the leading cause of death related to gynecologic malignancy.[2,3] As a result of its indolent clinical course, EOC tends to be diagnosed at an advanced stage, often resulting in unfavorable outcomes because disease stage at diagnosis is the most significant prognostic factor.[4]

EOC metastasizes locally or via blood vessels and lymphatics. Nonetheless, one of its most distinct features is the tendency to disseminate into the peritoneal cavity, causing peritoneal carcinomatosis, indicative of advanced stage disease.

So far the standard of care for ovarian cancer has been surgery followed by systemic chemotherapy. However, treatment with cytoreductive surgery (CRS), as described by Sugarbaker, and hyperthermic intraperitoneal chemotherapy (HIPEC) is another approach, showing promising

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