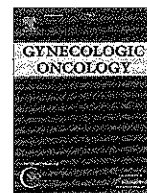




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## Survival after recurrence in early-stage high-risk epithelial ovarian cancer: A Gynecologic Oncology Group study

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### ABSTRACT

**Objective.** This study aimed to evaluate the clinical outcome of recurrent early-stage high-risk epithelial ovarian cancer patients.

**Methods.** Demographic and clinicopathological data were collected from women enrolled in GOG 157 who underwent surgical staging and had recurrent disease. Survival probability was estimated using Kaplan-Meier method, and hazard ratio of death was analyzed using Cox regression model.

**Results.** Of 74 women with recurrent early-stage high-risk ovarian cancer, the median age at recurrence was 63 years; 93% were White, 2.7% were Black, 2.7% were Asian, and 1.4% were Others. Fifty-eight percent had stage I, and the remainder had stage II disease. Clear cell, serous, endometrioid, mucinous, and other tumors consisted of 28.4%, 25.7%, 24.3%, 16.2%, and 5.4% of patients, respectively; in addition, 36.5% had ascites, 33.8% had positive cytology, and 43.2% had ruptured tumors. Fifty-eight percent underwent three cycles, and 42% had six cycles of adjuvant chemotherapy with paclitaxel and carboplatin. Recurrence was diagnosed clinically in 46% and radiographically in 54% of women. The median time from completion of primary chemotherapy to recurrence (treatment-free interval, TFI) was 21 months. Overall, median survival after recurrence was 24 months. Patients with longer (>24 months) TFI had a higher median survival after subsequent treatment at 35 months compared to only 10 months in those who recurred ≤24 months ( $p = 0.003$ ).

**Conclusions.** Although patients with primary early-stage high-risk ovarian cancer have an overall favorable prognosis, survival after recurrence is poor and comparable to those with recurrent advanced-stage disease. Novel therapeutic modalities are warranted in these high-risk patients.

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### Introduction

In 2009, it is estimated that there will be approximately 21,550 new epithelial ovarian cancers (EOC) diagnosed in the United States, and nearly 30% will present with stage I–II disease [1]. Although the 5-year survival in this group is favorable at 70–90%, nearly one-third of patients initially diagnosed with early-stage ovarian cancer will recur [2,3]. Patients at risk for recurrence include those with stage IA–IB, grade 3; stage IC and II, all grades; and all clear cell carcinomas. In a

prior analysis of early-stage high-risk EOC treated on two Gynecologic Oncology Group (GOG) prospective randomized trials, Chan et al. found that older age, higher stage, higher grade, and positive cytology are important prognostic factors for recurrence and poorer survival [4].

Given that the majority of patients with early-stage ovarian cancer are cured, it is challenging to study the outcomes of women with recurrent early-stage ovarian cancer. Although it is well recognized that those with recurrent stage III–IV ovarian cancer have a poor prognosis, it remains unclear if those with recurrent stage I–II ovarian cancer have similar outcomes. There are few studies that have reported on the outcomes of patients with recurrent early-stage ovarian cancer. Kolomainen et al. reported on 61 patients with recurrent stage I EOC who did not receive adjuvant chemotherapy during primary treatment and found that only some patients can be successfully treated with chemotherapy after recurrence [5]. However,

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