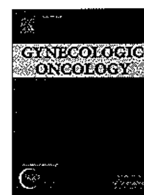
Gynecologic Oncology 116 (2010) 351–357

Contents lists available at ScienceDirect

Gynecologic Oncology

journal homepage: www.elsevier.com/locate/ygyno



The effect of primary cytoreduction on outcomes of patients with FIGO stage IIIC ovarian cancer stratified by the initial tumor burden in the upper abdomen cephalad to the greater omentum☆

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ARTICLE INFO

Article history:
Received 10 August 2009

Keywords:
Upper abdominal disease cephalad to the greater omentum
Upper abdominal disease
Ovarian cancer
Survival
Cytoreduction
Surgery

ABSTRACT

Objective. Our objective was to analyze the effect of surgical outcome on progression-free survival (PFS) and overall survival (OS) of patients with advanced ovarian carcinoma stratified by the initial presence and volume of upper abdominal disease cephalad to the greater omentum (UAD) found at the time of exploration.

Methods. We evaluated all patients with FIGO stage IIIC ovarian carcinoma who underwent primary cytoreduction followed by platinum-based chemotherapy at our institution between January 1989 and December 2006. The effect of surgical outcome was investigated using a time-to-event analysis. A Cox proportional hazards model was fit using clinical, surgical, and postoperative variables.

Results. We identified 526 evaluable patients. Optimal versus suboptimal cytoreduction was significantly associated with improved median PFS and OS in patients with no, minimal (≤1 cm), and bulky (>1 cm) UAD. On multivariate analysis, patients with bulky UAD who underwent optimal cytoreduction had a 28% decreased risk of relapse (hazard ratio, 0.72; 95% confidence interval: 0.53–0.99; $P=0.04$) and a 33% decreased risk of death (hazard ratio, 0.67; 95% confidence interval: 0.47–0.96; $P=0.03$) compared to patients who underwent suboptimal cytoreduction.

Conclusion. The presence of large-volume disease found during surgical exploration does not preclude the benefit of optimal cytoreduction. The findings support the management strategy of maximizing surgical efforts with increasing tumor burden in patients with stage IIIC ovarian cancer. Prospective studies are needed to more precisely quantify tumor burden and accurately determine the specific impact of cytoreduction on outcome.

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Introduction

Although the use of postoperative chemotherapy for the treatment of advanced ovarian cancer is based on prospective randomized trials [1–6], the rationale for surgery is derived mainly from retrospective data demonstrating that the amount of residual disease after cytoreductive surgery inversely correlates with progression-free and overall survival [7–15]. It is debatable whether it is the surgical procedure itself that is responsible for the superior outcome associated with small-volume residual disease or whether the ability to achieve minimal residual disease identifies a biologically more favorable patient subgroup with excellent response to postoperative chemotherapy [16]. In fact, the prognostic relevance of residual disease is so powerful that in today's practice patients are stratified to postoperative chemotherapy treatments or randomized clinical trials based on the amount of residual disease remaining after surgery [1,6]. Currently, optimal surgical outcome is defined as disease of 1 cm or less in single largest diameter, whereas residual tumor exceeding 1 cm in single largest diameter is defined as a suboptimal surgical outcome.

Advances in surgical training, technique, and perioperative care have allowed surgeons to maximize cytoreductive efforts in patients with advanced stage IIIC and IV ovarian cancer, enabling them to increase the rate of optimal cytoreduction and target anatomical sites previously thought to be unresectable. Many authors now propose a new, more comprehensive approach to cytoreduction [8,17–23]. However, there is controversy as to how much surgical effort should be undertaken to achieve optimal residual disease status before reaching the point of subjecting the patient to the morbidity of a surgical procedure that is of no or only minimal oncologic benefit. A Gynecologic Oncology Group (GOG) study demonstrated that patients

☆ Presented at the 40th Annual Meeting on Women's Cancer, February 5–8, 2009, San Antonio, TX.

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0090-8258/$ – see front matter © 2009 Elsevier Inc. All rights reserved.
doi:10.1016/j.ygyno.2009.11.022