

Intraperitoneal Therapy for Ovarian Cancer: Toxicity Profile Associated with GOG-172 vs Modified GOG-172 in the Brigham Women's Hospital and Massachusetts General Hospital Population

Ama Buskwofie, MD; J. Alejandro Rauh-Hain, MD; Katharine Esselen, MD, MBA; Rachel M. Clark, MD; Michael Muto, MD; Colleen Feltmate, MD, Ross Berkowitz, MD; Whitfield B. Growdon, MD; A.K. Goodman, MD; David M. Boruta II, MD; John O. Schorge, MD; Neil Horowitz, MD; Marcela G. Del Carmen, MD, MPH

Introduction: GOG study 172 showed a significant improvement in overall and progression free survival in patients with optimally cytoreduced Stage IIIc ovarian cancer treated with intraperitoneal (IP) chemotherapy. Universal adoption of this modality of treatment has been limited given its associated toxicity. This study compares the toxicity profile and therapy completion rates of patients treated with IP chemotherapy per GOG-172 vs a modified version of this regimen at Massachusetts General Hospital (MGH) and Brigham Women's Hospital (BWH).

Methods: The cancer registry database at MGH and BWH was used to identify patients with Stage III and IV ovarian cancer treated with IP chemotherapy between 2005 and 2013. Completion and toxicity rates, as well as overall survival of patients treated with standard GOG 172 versus the modified regimen were compared. Student's t test and chi square test were used to analyze continuous and categorical data. The Kaplan-Meier method was used for survival analysis.

Results: A total of 123 patients met eligibility criteria for inclusion in this study. Ninety-nine patients were treated with the GOG-172 protocol (80.4%) and 24 were treated with the outpatient modified GOG-172 protocol (19.6%). More patients at BWH than at MGH were treated with the GOG 172 regimen (93.9 % vs 6.1%; $P < 0.001$). There was no difference between the 2 groups with regards to age (58.7 vs 58.1; $P = 0.78$), cycles completed (59.6% vs 41.7%; $P = 0.11$), or complete response to treatment (98% vs 95.7 %; $P = 0.5$). Patients treated with the GOG-172 regimen were more likely to experience hematologic toxicities (neutropenia, anemia, and/or thrombocytopenia) (76.8% vs 50%; $P = 0.009$) and to require growth factors (92.9% vs 62.5%; $p < 0.001$). A trend towards catheter-related complications was seen among the patients treated with the modified regimen (10.1% vs 20.8%; $P = 0.061$). There was no significant difference between the two groups in overall survival.

Conclusions: There were no significant differences in overall survival time between patients receiving the standard GOG-172 IP chemotherapy protocol and those patients receiving the outpatient modified GOG-172 protocol. However, in our patient population GOG-172 was associated with higher rates of hematologic toxicities and concomitant use of growth factors.