

## Multivariable analysis of association of beta-blocker use and survival in advanced ovarian cancer

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**Objective:** In this study, we sought to evaluate the relationship between survival and perioperative beta blocker use in both the primary and interval debulking setting while adjusting for frequently co-administered medications.

**Methods:** We performed a retrospective cohort study reviewing charts of women who underwent primary or interval cytoreduction for stage IIIC and IV epithelial ovarian cancer. The exposure of interest was use of beta-blockers at the time of cytoreduction. The outcomes of interest were PFS and OS. We collected demographic/prognostic variables and information about use of aspirin, metformin, statins, and clopidogrel. We used the Kaplan-Meier method and Cox proportional hazards models in survival analyses.

**Results:** 534 women who underwent surgery for stage IIIC or IV ovarian cancer were included in the study. The median age at diagnosis was 64 and 84.8% of women had serous carcinoma. We identified 105 women (19.7%) on a beta-blocker of whom 94 (90%) were on a cardio selective beta-blocker. Additionally, 24 women (4.5%) were discharged on metformin, 91 (17%) on aspirin, 128 (24%) on a statin, 4 (0.8%) on clopidogrel. In univariable analysis, beta-blocker users had a median survival of 25 months compared to 31 months among non-users (hazard ratio [HR]=1.52, p=0.008). After adjustment for important demographic, clinical, and histopathologic factors, as well as use of other common medications, beta-blocker use remain associated with an increased hazard of death (adjusted HR 1.60, p=0.004).

**Conclusion:** In this retrospective cohort study, we found that those patients on beta blockers at the time of surgery had worse overall survival and greater risk of death when compared to those patients not on beta blockers.