

**Poster 41:** Association of tobacco-smoking cessation and cancer stage in gynecologic malignancy

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Topic

Other: Epidemiology

## Objectives

Tobacco-smoking is a well-studied risk factor for various malignancies including uterine cervix. While tobacco-smoking cessation is known to reduce the risk of developing these malignancies, there is a scarcity in data of whether tobacco-smoking cessation can prevent or inhibit tumor progression. The objective of this study was to examine the association between tobacco-smoking status and cancer stage among patients with gynecologic malignancies.

## Methods

This cross-sectional study queried the Commission-on-Cancer's National Cancer Database in the United States. The study population included 36,228 patients across four gynecologic malignancies, including 14,055 patients with uterine cancer, 11,975 patients with tubo-ovarian cancer, 7,533 patients with cervical cancer, and 2,664 patients with vulvar cancer, diagnosed in 2023. Exposure was tobacco-use status, grouped as never smoker, current smoker, or former smoker. Outcome measure was cancer stage, grouped as stage II-IV or stage I. Exposure-outcome association was adjusted for patient age at cancer diagnosis, race and ethnicity, Charlson-Deyo Comorbidity Index, primary payer, census-level median household income, urban-rural setting, census-level no high school graduation rate, facility type, and U.S. region.

## Results

Cervical cancer and vulvar cancer patients had the two highest rates of current smoker at cancer diagnosis (22.9% and 21.2%, respectively), followed by uterine cancer (18.6%) and tubo-ovarian cancer (9.7%) ( $P < .001$ ). Former smoker rate was disproportionately higher for uterine cancer patients compared to other malignancies (61.7% vs 23.2%-28.5%,  $P < .001$ ). Among the current smokers, the risk of having stage II-IV disease was highest for patients with cervical cancer (73.0% vs 61.4%, adjusted-rate ratio [aRR] 1.59, 95% confidence interval [CI] 1.39-1.82), followed by uterine cancer (33.5% vs 29.2%, aRR 1.26, 95%CI 1.15-1.37). This increased risk of having stage II-IV disease was significantly attenuated for former smoker in both cervical cancer (66.5% vs 61.4%, aRR 1.14, 95%CI 1.01-1.30) and uterine cancer (27.9% vs 29.2%, aRR 0.93, 95%CI 0.88-0.98). Tobacco-smoking status was not associated with cancer stage for tubo-ovarian and vulvar cancers.

## Conclusions

The results of this cross-sectional study suggest that tobacco-smoking cessation may be associated with lower rates of higher cancer stage at diagnosis for cervical and uterine cancers. As cancer stage is an important prognostic factor, these findings add clinical insights for tobacco-smoking cessation counseling.

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