Ari Li
Undergraduate
Yale University, New Haven, CT

Dr. Xiao-Cheng Wu
LSUHSC

"Survival Outcomes by Histologic Subtype in Ovarian Cancer: A Population-Based Study Using Louisiana Tumor Registry Data"

Background: Ovarian cancer encompasses distinct histologic subtypes with diverse molecular, clinical, and prognostic characteristics. Understanding how these subtypes relate to survival is crucial for informing treatment strategies and public health initiatives.

Methods: This retrospective cohort study analyzed 1,658 women diagnosed with first primary invasive epithelial ovarian cancer between 2010 and 2021 using data from the Louisiana Tumor Registry. Histologic subtypes were classified using ICD-O-3 codes into high-grade serous, low-grade serous, endometrioid, clear cell, mucinous, carcinoma NOS, carcinosarcoma, and mixed histologies. Kaplan-Meier methods were used to estimate overall and cause-specific survival. Cox proportional hazards models were constructed to assess the associations between histology and mortality, adjusting for age at diagnosis, stage, insurance type, tumor grade, BMI, comorbidity index, race, census tract poverty, and urbanicity.

Results: , Five-year cause-specific survival was highest for endometrioid (93.7%), low-grade serous (79.4%), and mucinous (73.4%) tumors, and lowest for high-grade serous (44.5%), carcinoma NOS (16.2%) and carcinosarcoma (29.5%). Median cause-specific survival was 4.26 years (95% CI: 3.75–4.92). In multivariable models, histologic subtype was strongly associated with cancer-specific survival. Compared to high-grade serous carcinoma, endometrioid (HR=0.22, p<0.001), low-grade serous (HR=0.32, p<0.001), and clear cell (HR=0.62, p=0.11) carcinomas had significantly better or numerically favorable outcomes. Similar survival patterns were observed for cancer-specific survival. Other predictors of worse survival included distant stage, higher grade, and public insurance. The concordance statistic for the Cox model was 0.75, indicating good model discrimination.

Conclusions: Histologic subtype is a major determinant of ovarian cancer survival, even after adjusting for sociodemographic and clinical covariates. Endometrioid and low-grade serous subtypes are associated with notably favorable prognoses, while high-grade serous and undifferentiated carcinomas carry the poorest outcomes. These findings highlight the need for histology-specific treatment approaches and reinforce the prognostic importance of subtype classification in ovarian cancer.