patients underwent surgical staging including sentinel lymph node biopsy or systematic lymphadenectomy. Patients with FIGO stage IV were excluded. Molecular analysis included immunohistochemistry for p53 and MMR proteins, microsatellite instability assay, and Next Generation Sequencing for POLE exonuclease domain and TP53. ECs were classified into 4 molecular classes (POLEmut, MMR deficiency [MMRd], p53 abnormality [p53abn], and non-specific molecular profile [NSMP]). Associations between molecular classes and lymph nodes metastasis were evaluated with univariate and multivariate statistical analysis. 

Results In total, 317 patients meeting inclusion criteria were included. Molecular classification showed 150(47.3%) NSMP, 101(31.9%) MMRd, 38(12%) p53abn, and 28(8.8%) POLEmut. Among them, 64 (20.2%) had lymph nodes metastasis, including 29(45.3%) NSMP, 26(40.6%) MMRd, 8 (12.5%) p53abn, and 1(1.6%) POLEmut. In the univariate analysis high grade (p<0.03), myometrial invasion (p<0.0001), cervical stromal invasion (p=0.0004), lymph vascular space invasion (LVSI) (p<0.0001), positive peritoneal cytology (p=0.02), and peritoneal involvement (p=0.02) were predictors of lymph nodal metastasis, while POLEmut (vs. other risk classes) was a protective factor (p=0.02). In the multivariate analysis, myometrial invasion (p=0.0007), LVSI (p<0.0003), and peritoneal cytology (p=0.02) were independent predictors of lymph nodes metastasis, while POLEmut class showed a protective role (p=0.03).

Conclusion POLEmut class is associated with a low rate of lymph node involvement and has an independent protective role on lymph nodal metastasis. If confirmed by future studies, these results could be potentially used to tailor surgical staging.