Lymph ascites was an independent risk factor for development of lymphoedema (aOR 4.69; 95%CI 1.66–13.23) along with radiation therapy (aOR 9.34; 95%CI 1.80–45.51), age (aOR 1.08; 95%CI 1.01–1.16), and diabetes (aOR 3.26; 95%CI 1.02–10.45).

**Conclusion** Lymphadenectomy was a strong risk factor for lymph ascites and the use of minimal invasive surgery seemed to reduce the risk. Occurrence of lymph ascites 4–6 weeks postoperatively increased the risk of developing lymphoedema within one year after surgery. Attention should be paid to the presence of lymph ascites at the early postoperative follow-up, and pre-emptive measures of lymphoedema should be initiated in these women.

**Disclosures** None

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**Abstract #144**

**Table 1** Preoperative demographic and clinical data of 235 women treated for endometrial cancer in relation to occurrence of lymph ascites 4–6 weeks, and lymphoedema of the legs one year after surgery of endometrial cancer.

**#149**

**ARTIFICIAL INTELLIGENCE-BASED SPATIAL ANALYSIS OF TERTIARY LYMPHOID STRUCTURES (TLSs) AND THE ANTITUMOR EFFECT OF IMMUNE CHECKPOINT INHIBITOR FOR ENDOMETRIAL CANCER**

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**Introduction/Background** Tertiary lymphoid structures (TLSs) are known to be a marker of peripheral inflammation in several cancer types, however there is no evidence of clinical benefit of immune checkpoint inhibitor (ICI) and special interplay pattern of TLSs in endometrial cancer.

**Methodology** We developed an artificial intelligence (AI)-based TLSs detection program using transfer learning Deep-LabV3 and performed spatial analyses of TLSs in 958 tiles from tumor samples of 258 endometrial cancer patients. And we applied this AI-based program to evaluate the relationship between spatial distribution (according to distance from tumor burden) of TLSs and survival rate or antitumor effect of immune checkpoint inhibitors for endometrial cancer patients.

**Results** First, we could make a program that automatically recognized TLSs in tumor samples with an accuracy agreement rate of 96% for training data and 92% for evaluation data. In 104 patients with endometrial cancer, TLSs were detected in 81 patients (78%), and the patients with TLSs at >500um from tumor burden (extra-TLSs) were closely related to favorable progression free survival (P <0.004), while the patients with ≤500um from tumor burden (peri-TLSs). Besides, among 12 endometrial cancer patients treated with ICI, 4 of 5 patients with extra-TLSs showed clinical response (80%) of response rate [RR]: 2 complete response and 2 partial response [PR], while only 1 of 7 patients with peri-TLSs showed clinical response (RR 14%: 1 PR).

**Conclusion** AI-based spatial analysis of TLSs may be useful to predict the prognosis and one of anti-tumor biomarker of ICI in advanced endometrial cancer.

**Disclosures** Spatial distribution of TLSs may be closely related to patients’ survival, and extra-TLSs may represent local immune status in tumor microenvironment.

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**Abstracts**

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**#151**

**ESTROGEN/PROGESTERONE RECEPTOR EXPRESSION AND CA125 AS PREOPERATIVE PREDICTORS TO ESTIMATE LYMPH NODE METASTASIS IN ENDOMETRIAL ENDOMETRIOID CANCER**

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**Introduction/Background** Loss of estrogen receptor/progesterone receptor (ER/PR) in endometrial cancer (EC) is associated with tumor progression and poor outcomes. Elevated pretreatment cancer antigen 125 (CA 125) level is a risk factor for lymph node metastasis (LNM). We evaluated whether the combination of ER/PR expression and CA 125 level could be used as a biomarker to predict LNM.

**Methodology** We retrospectively investigated patients with endometrioid EC who underwent complete staging surgery during January 2015-December 2020. We analyzed ER/PR status using immunohistochemical staining, and quantified its expression using the sum of both ER/PR H-scores. Receiver operating characteristic curves were used to identify optimal cut-off values of H-score and CA 125 level could be used as a biomarker to predict LNM.

**Results** In 396 patients, the optimal cut-off values of the ER/PR H-score and CA 125 were 407 (AUC 0.645, p=0.001) and 40 U/mL (AUC 0.762, p=0.001), respectively. Multivariate analysis showed that CA 125 ≥ 40 U/mL (OR: 8.03; 95% CI: 3.44–18.77) and ER/PR H-score < 407 (OR: 5.22; 95% CI: 1.87–14.60) were independent predictors. An LNM predictive nomogram was constructed using these two variables. Calibration curves for the probability of LNM showed optimal agreement between the predicted and actual probabilities with a concordance index of 0.807. Our model yielded a negative predictive value and negative likelihood ratio of 98.3% and 0.14, respectively.