COMPARISON OF MINIMALLY INVASIVE VERSUS OPEN SURGERY IN TREATMENT OF ENDOMETRIAL CANCER WITH HIGH RISK OF RECURRENT – RETROSPECTIVE COHORT STUDY IN KOREA AND TAIWAN

Objectives The aim of this study was to compare oncologic outcomes between minimally invasive surgery (MIS) and open surgery in the treatment of endometrial cancer with high risk of recurrence.

Methods This retrospective study included patients with endometrial cancer with high risk factor who underwent primary surgery in two tertiary centers in Korea and Taiwan. Stage III-IVA endometrial cancer with grade 1–2 endometrioid type, stage I-IIA endometrial cancer with grade 3 endometrioid type or non-endometrioid type were considered as factors of high risk of recurrence. We conducted 1:1 propensity score matching between MIS and open surgery group to adjust the baseline characteristics. Oncologic outcomes were compared according to surgical approach.

Results A total of 284 patients were included after propensity score matching. Among them, 32 (11.3%) cases were patients with low grade endometrioid carcinoma with advanced stage, 109 (38.4%) patients were grade 3 endometrioid carcinoma, and 143 (50.3%) were patients with non-endometrioid carcinoma. Compared to patients who underwent open surgery, MIS did not show difference in disease-free survival (HR 1.09, 95% CI 0.67–1.77, P=0.717) and overall survival (HR 0.67, 95% CI 0.36–1.24, P=0.198). In multivariate analysis, non-endometrioid histology, tumor size, tumor in cytology, depth of invasion, and lympho-vascular space invasion were risk factors for recurrence. There was no association between surgical approach in either recurrence or mortality in subgroup analysis according to stage and histologic type.

Conclusions Minimally invasive surgery did not compromise survival outcomes for endometrial cancer with high risk of recurrence when compared to open surgery.

GENOMIC PROFILING OF CIRCULATING TUMOR DNA FROM PERITONEAL FLUID IN ENDOMETRIAL CANCER

Objectives Endometrial cancer (EC) is one of the most common gynecological cancers. It is recommended to obtain peritoneal fluid during the surgery. However, there are limited information about the relationship between tumor gDNA and ctDNA isolated from peritoneal fluid in EC. In this study, we aim to disclose the genomic characteristics of ctDNA from peritoneal fluid in EC.

Methods We conducted whole-exome sequencing of 8 paired samples of tissue and peritoneal fluid from 4 EC patients to analyze somatic mutations.

Results Remarkably, TP53 and POLE mutations, which are highly related to the molecular classification of EC, were identified in our study with several significant observations. The ctDNA of EC1 patient with negative peritoneal fluid presented TP53 mutations that were concordant with the tumor tissues. ctDNA in the peritoneal fluid of a patient with positive cytology (EC4) harbored both TP53 and POLE somatic mutations, although none of them were detected in the tumor tissue. We also found that mutant allele frequency of shared somatic mutations between tumor tissue and peritoneal fluid has significant positive correlation with r=0.648 and p-value<2.2e-16.

Conclusions Taken together, our study found a strong mutational concordance between peritoneal fluid samples and tumor tissue samples. Our results demonstrate that ctDNA from the peritoneal fluid might be a suitable biomarker to identify the mutational landscape of EC and can be used to interpret the tumor heterogeneity of endometrial cancer.

ADDED VALUE OF SENTINEL LYMPH NODE BIOPSY IN PATIENTS WITH NEGATIVE LYMPH NODE ON TRIPLE PRE-OPERATIVE IMAGES

Objectives Since less than 5% in low-grade endometrial cancer (EC) has lymphatic spread, lymphadenectomy in low-risk EC is not recommended. The aim of this study is to determine the importance of sentinel lymph node (SLN) biopsy to detect lymph node (LN) metastasis when pre-operative images indicate negative LN.

Methods This is a single institution, retrospective study. Inclusion criteria were over 18 years old, endometrioid type, clinical stage I with negative lymph node by triple images (magnetic resonance imaging (MRI), abdominopelvic computed tomography (APCT), positron emission tomography computed tomography (PET-CT)) between 2015 January and 2019 December. The median and range of preoperative parameters such as CA 125 was compared to inspect proper preoperative predictors for LN involvement.

Results Based on inclusion criteria 301 were eligible for this study, 82 participants underwent only SLN biopsy and 219 underwent both SLN biopsy and lymphadenectomy. Among those, 10 patients had either SLN and/or non-SLN positive, and one had only non-SLN positive. Since there was one false positive, overall, 3.33% (10/300) had positive SNLS when negative LNs on triple pre-operative images. The median of preoperative CA-125 of SLN positive group was 31.2 and range was 5.8–460.1.

Conclusions Since about 3.33% (10 out of 300) of those who had negative LNs on triple pre-operative images, turned out to have positive SLNs and no other single parameter could predict LNs meta other than pathologic confirm, SLN biopsy has an added value to detect LN metastasis.