

reduction persisted for up to 20+ years after the ovarian tumor diagnosis.

**Conclusion** The risk of endometrial cancer was decreased beyond the first year after a benign ovarian tumor and the decrease persisted for 20 or more years. The possible underlying mechanisms are not known and should be investigated further.

**Disclosures** None.

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### THE ONCOLOGIC OUTCOME AFTER FERTILITY-SPARING HORMONAL MANAGEMENT MORE THAN 9 MONTHS TREATMENT FOR EARLY STAGE ENDOMETRIOID ENDOMETRIAL CANCER

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**Introduction/Background** Hormonal management is an alternative treatment for preserving fertility in patients with early stage endometrioid endometrial cancer (EC). The safety and clinical outcome in longer treatment more than 9 months has controversial. This study aimed to define the oncologic outcomes after hormone therapy more than 9 months for endometrioid EC.

**Methodology** We retrospectively analyzed patients presumed to have stage IA, grade 1–2 endometrioid EC who underwent fertility-sparing treatment. Concurrent medroxyprogesterone (MPA) and levonorgestrel-release intrauterine devices were used for treatment. The remission rate and progression free survival were analysed each of the short term treatment who had treatment under 9 months and long term groups who had treatment duration over 9 months.

**Results** One hundred twenty patients presumed to have stage IA, grade 1 endometrioid EC had treated with hormonal medication for fertility sparing. The median age was 33.5 (range 22–43) years old and the median treatment duration was 10.7 (3–102) months. The Complete remission (CR) rate was 84.2% (101/120) and the median time interval to CR was 9.3 (2–84) months. The median follow-up time was 32.9 (1–130) months. The recurrence rate was 31.7% (38/120) and the median time to recurrence was 11 (1–92) months. The cumulative CR rate by 3, 6, 9, 12, 15, 18, 24 months was 21.7%, 36.7%, 50.8%, 61.7%, 70.8%, 74.2%, and 78.3% respectively. The CR rates in group A and B were 86.7% and 82.7% in group A and B. The recurrence rates in two group were 35.6% and 29.3%, respectively.

**Conclusion** Fertility sparing treatment with high dose progestin over 9 months in early stage endometrioid EC has showed high rate of CR. However, medical treatment over 9 months should counsel with patients in detail and oncologists should make careful decision.

**Disclosures** I have no conflicts of interest to disclose.

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### THE ADDED VALUE OF SENTINEL NODE MAPPING IN ENDOMETRIAL CANCER

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**Introduction/Background** Endometrial cancer (EC) is the most common gynecological malignancy worldwide, with an estimated 382,069 new cases and 89,929 deaths in 2018. Lymph node involvement represents one of the most important prognostic factors and guides better planning of post-operative adjuvant treatment. Whereas lymph node assessment has been included in surgical staging since 1988, the optimal procedure for lymph node evaluation is controversial, ranging from full pelvic and para-aortic lymph node dissection (LND) to complete omission of LND. We previously evaluated the oncologic outcomes of 472 cases of EC (SLN with LND vs. LND alone) and demonstrated significantly lower likelihood of pelvic side-wall recurrences in patients who underwent SLN. These data raised the possibility that addition of SLN biopsy may not just be equivalent to conventional staging but may actually increase the detection of metastatic disease, resulting in better stratification of patients into risk groups, optimal adjuvant therapy prescription and as a result, better oncologic outcomes. In this study, we investigated the long-term oncological outcome of adding SLN to pelvic LND in patients with EC.

**Methodology** Retrospective study comparing survival outcomes (overall survival (OS), disease-specific survival (DSS), progression-free survival (PFS), recurrence-free survival) between endometrial cancer patients undergoing surgical staging, which included LND with or without SLN in non-overlapping contiguous eras. Hazard ratios (HR) and their respective 95% confidence intervals (95%CI) were calculated using Cox proportional hazard models.

**Results** 193 patients underwent LND and 250 patients had SLN mapping prior to LND. Clinical characteristics, including adjuvant therapy use, were similar between groups. During a median follow-up period of 6.9 years, addition of SLN was associated with more favorable oncological outcomes compared to LND with 6-year OS of 90% compared to 81% ( $p=0.009$ ), and PFS of 85% compared to 75% ( $p=0.01$ ) respectively. SLN was associated with improved OS (HR 0.5, 95% CI 0.3–0.8,  $p=0.004$ ), DSS (HR 0.5, 95%CI 0.2–1.0,  $p=0.05$ ) and PFS (HR 0.6, 95% CI 0.4–0.9,  $p=0.03$ ) in a multivariable analysis as well, adjusted for age, ASA score, stage, grade, non-endometrioid histology, and LVSI. Patients who were staged with SLN were less likely to have a recurrence in the pelvis or lymph node basins compared to patients who underwent LND only (6-year recurrence-free survival 95% vs 90%,  $p=0.04$ ).

**Conclusion** Addition of SLN was associated with improved clinical outcomes compared to LND alone in patients with endometrial cancer undergoing surgical staging.

**Disclosures** We have no disclosures.

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### OMITTING LYMPHADENECTOMY IN OBESE ENDOMETRIAL CANCER PATIENTS UNDERGOING SENTINEL LYMPH NODE MAPPING: WHEN MORE IS LESS

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**Introduction/Background** The prevalence of obesity in the United States has tripled over the last 40 years. Obesity is a significant risk factor for endometrial cancer (EC). Sentinel lymph node (SLN) sampling has been applied for EC surgery

to minimize the rate of unnecessary LND associated morbidity. Although its use in EC is relatively new, SLN biopsy has been shown to be highly accurate for staging purpose. However, some studies reported on decreased sentinel node detection rate among obese patients. Thus, we sought to determine if SLN technique is reliable with certain factors associated with successful mapping in obese EC patients and whether omitting LND impacts oncologic outcomes.

**Methodology** A prospective cohort study of obese patients (BMI)  $\geq 35$  kg/m<sup>2</sup>, diagnosed with endometrial carcinoma between 2007 and 2017, comparing surgical and oncological outcomes of two patients cohorts: LND ( $\pm$  SLN) and SLN. 2-year progression-free survival (PFS), overall survival (OS), and disease-specific survival (DSS) were analyzed using life tables, Kaplan-Meier survival curves and log-rank tests.

**Results** Out of 223 patients with median BMI of 40.6 kg/m<sup>2</sup>, 140 patients underwent LND (with or without SLN) and 83 patients underwent SLN. The median operative time for surgical staging in SLN only group was shorter in 47.5 minutes than for patients in the LND $\pm$ SLN group (190.5 minutes (108–393) vs. 238 minutes (131–440), respectively, ( $p < 0.001$ )), and they had reduced estimated blood loss (EBL) compared to the LND $\pm$ SLN group (30 ml (0–300) vs. 40 ml (0–800 ml),  $P=0.03$ ). At a 24 months follow-up cut-off, 98% of the patients were alive and 95.5% were free of disease, without significant differences in OS, DSS and PFS between the two groups ( $p=0.7$ ,  $p=0.8$  and  $p=0.4$ , respectively). Overall, 171 patients underwent SLN biopsy ( $\pm$ LND) and stratified by the tracer used for mapping (ICG versus blue dye). The ICG injected group had higher successful mapping and bilateral detection rates (92.8% vs 71.7%,  $p<0.001$  and 80.2% vs 43.3%,  $p<0.001$ , respectfully).

**Conclusion** Omitting LND from surgical staging where SLN is performed was associated with shorter operative time and minimal bleeding without affecting survival. ICG with NIR fluorescence imaging results in higher detection than with blue dye, indicating that ICG should be the dye of choice in obese endometrial cancer patients.

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#### SENTINEL LYMPH NODE MAPPING: THE ANSWER TO THE SURGICAL STAGING DILEMMA IN ELDERLY PATIENTS WITH ENDOMETRIAL CANCER

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**Introduction/Background** Nearly half of women diagnosed with endometrial cancer (EC) are 70 years old or older. Furthermore, elderly patients (>65 years) have been at risk for adverse perioperative outcomes throughout various surgical procedures and have a poorer prognosis which is related to both aggressive disease and under-treatment. We aimed to compare surgical and oncological outcomes between elderly (>65 year-old), intermediate to high risk, endometrial cancer patients undergoing staging with sentinel lymph node (SLN) staging and pelvic lymphadenectomy (LND).

**Methodology** A prospective cohort study of elderly patients diagnosed with endometrial carcinoma between 2007 and 2017, treated in a single center in Montreal, comparing

surgical and oncological outcomes of 3 endometrial cancer patients cohorts in non-overlapping eras, undergoing surgical staging including: LND, LND+SLN or SLN. 2-year progression-free survival (PFS), overall survival (OS), and disease-specific survival (DSS) were analyzed using life tables, Kaplan-Meier survival curves and log-rank tests.

**Results** Out of 278 patients with a median age of 73 (65–91) years, that were staged and met the study inclusion criteria, 84 patients underwent LND only, 120 underwent SLN followed by LND and 74 patients had only SLN. Patients in the SLN group had significantly less dissected nodes (mean of 5.4 nodes vs 10.4 and 10.0 in the SLN+LND and the LND cohorts, respectively,  $p<0.001$ ), shorter surgeries with a median time of 199 minutes (range, 75–393) compared to 231 (range, 125–403) and 229 (range, 151–440) minutes in the SLN+LND and LND cohorts, respectively ( $p<0.001$ ) and minimal estimated blood loss with a median estimated blood loss of 20 ml (5–150) vs. 25 ml (5–800) and 40(5–400) in the SLN+LND and LND cohorts, respectively ( $p=0.002$ ). 42.4%, 19.8% and 36.2% of the all cohort received vaginal brachytherapy, external beam radiation and chemotherapy, respectively, with significantly more patients in the SLN group receiving brachytherapy (54.1% vs 41.7% and 33.3% in the SLN+LND and LND cohorts, respectively,  $p=0.03$ ). 2-year overall survival and progression free survival were not significantly different between the 3 groups ( $p=0.45$ ,  $p=0.51$ , respectively). On multivariable analysis, adjusted factors that were statistically significant on univariable analysis (age, ASA score, stage, grade, LVSI), adding SLN was associated with better OS, (HR 0.2, CI [0.1–0.6],  $P=0.006$ ) and PFS (HR 0.5, CI [0.1–1.0],  $P=0.05$ ).

**Conclusion** SLN based surgical staging is feasible, precise, affects adjuvant treatment and associated with better surgical and oncological outcomes in intermediate and high risk elderly patients.

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#### TUMOUR MOLECULAR FEATURES PREDICT ENDOMETRIAL CANCER PATIENTS' SURVIVAL AFTER DIFFERENT SURGICAL APPROACHES

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**Background** The Cancer Genome Atlas (TCGA) project has shed light on the vital role of tumour molecular features in predicting endometrial cancer (EC) patients' survival. This study aims to investigate the survival impact of surgical approaches on EC patients with different molecular features.

**Methodology** 473 eligible EC patients from TCGA database were selected. Clinicopathological characteristics and genetic features of open and minimally invasive surgery (MIS) group were compared. To analyse the prognostic impact of surgical approach, survival analyses were conducted in patients with different genetic alterations. Finally, a simplified model based on molecular features was established to help select patients suitable for MIS or open surgery.

**Results** In the eligible patients, 291 (61.5%) received open surgery and 182 (38.5%) received MIS. Clinicopathological and genetic features were comparable between the two groups except the year of diagnosis ( $p<0.001$ ). Among all patients, 4