### Title

Lymph node evaluation in endometrial cancer patients after the FIRES trial (534)




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Similar to upfront surgical resection, the presence of dVIN at the margin increased the risk of recurrence.

**The reliability of pre-operative CT imaging in predicting cardiophrenic lymph node involvement prior to both PDS and DDS for advanced ovarian cancer (532)**

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**Objectives:** Cardiophrenic lymph node (CPLN) involvement represents stage IVB ovarian cancer. Driven by the prognostic importance of complete cytoreduction, the surgical practice has evolved to increasingly incorporate CPLN dissection as a component of ultra-radical debulking for advanced disease. We aimed to evaluate the reliability of preoperative imaging in accurately identifying positive CPLN – and hence those patients for whom removal may confer benefit.
**Methods:** Preoperative CT imaging was retrospectively reviewed for all patients undergoing either primary (PDS) or delayed debulking surgery (DDS) for stage III or IV tubo-ovarian / primary peritoneal carcinoma in a UK cancer center between 2017-2020. CPLN measuring >5 millimeters – or those with abnormal morphology (irregular border / absent fatty hilum / heterogeneous internal attenuation) – were deemed radiologically suspicious. For patients within this 'node-positive' cohort, histology for those having undergone CPLN dissection was also reviewed, and the correlation between imaging and final pathology was analyzed.
**Results:** A total of 141 patients undergoing either PDS or DDS for advanced tubo-ovarian or primary peritoneal cancer were identified. On review of preoperative CT, 60 patients (42.6%) were deemed to have radiologically involved CPLN. Of these, 13 patients had undergone CPLN dissection, with positive histopathology confirming CPLN metastases in 11/13 patients (84.6%). This equates to a positive predictive value (PPV) for CT in identifying this disease entity of 0.846, with no significant difference seen in the context of PDS versus DDS.
**Conclusions:** While our patient numbers are limited, reflecting the introduction of this evolving surgical technique to our center during the timeframe reviewed, our data suggest that preoperative CT is an accurate predictor of CPLN disease in advanced tubo-ovarian / primary peritoneal malignancy in advance of both PDS and DDS and can be reliably used to guide patient selection for CPLN dissection.

**The status of surgical margins in relation to the type of surgical approach in the management of early-stage cervical cancer: Canadian Cervical Cancer Collaborative (4C) study (533)**

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**Objectives:** Surgical margin status in women undergoing surgery for early-stage cervical cancer is considered an important prognostic factor. We sought to determine if positive or close surgical margin status (<3mm) is related to the type of surgical approach and associated with worse outcomes.
**Methods:** A national retrospective cohort study of cervical cancer treated with a radical hysterectomy was conducted. Patients with stage IA1 (LVSI positive) to IIIC2 (FIGO 2018) with lesions up to 4cm at ten Canadian institutions from 2007-2019 were included. Surgical approaches for the radical hysterectomy included robotic/laparoscopic (RLRH), abdominal (ARH), or laparoscopic-assisted vaginal/vaginal hysterectomy (LVVRH). Recurrence-free survival (RFS) and overall survival (OS) were estimated using Kaplan-Meier analysis. Chi-square and log-rank tests were used to compare between cohorts.
**Results:** A total of 960 patients met the inclusion criteria. The majority of patients had squamous histology (470, 49%), while 343 (35.7%) had adenocarcinomas and 113 (11.8%) had adenosquamous. Most were stage IB (681, 70.0%) and 183 (19%) were IA. Mode of surgery included: 495 (51.6%) RLRH, 88 (9.2%) LVVRH and 376 (39.2%) ARH. Surgical margins were negative in 819 (85.3%), positive in 15 (1.6%) or close in 103 (10.7%) patients. Factors predictive of close/positive margins included stage, tumor diameter, vaginal involvement, and parametrial extension; the surgical approach was not a predictor of margin status (p=0.38). Close/positive margins were associated with a higher risk of death on univariate analysis (HR: 2.53; 95% CI: 0.78-8.22) for positive margins and 1.83 (95% CI: 1.04-3.24) for close margins, p=0.05), but margin status was not significant for OS or PFS when adjusting for stage, histology, surgical approach, and adjuvant treatment. Overall, 71% of patients with positive margins and 60% of patients with close margins received adjuvant treatment. One patient (6.7%) with positive margins recurred distantly, despite having received adjuvant chemoradiation; 16 patients (15.3%) with close margins recurred (p=0.023), with 73% having received either adjuvant radiation or chemoradiation. The surgical approach was not statistically associated with either OS (p=0.067) or PFS (p=0.06).
**Conclusions:** Positive or close surgical margins were not found to be associated with the use of the minimally invasive surgical (MIS) approach. MIS approach did not appear to negatively impact outcomes. Positive or close surgical margins were not associated with worse outcomes, possibly due to adjuvant treatment.

**Lymph node evaluation in endometrial cancer patients after the FIRES trial (534)**

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**Objectives:** To calculate the change in the rate of adoption of sentinel lymph node dissection (SLND) in endometrial cancer (EC) related to findings from the FIRES trial.
**Methods:** We queried the SEER dataset for all patients (pts) with EC diagnosed from 2003-2018 who had a complete hysterectomy (hyst). We excluded pts who had a supra-cervical hyst, whose tumors could

not be classified as type I or type II by Bokhman criteria, or whose method of lymph node dissection (LND) was unknown. Pts who had SLND alone, and those who had SLND prior to non-sentinel LND, were classified as having had SLND. We performed joinpoint (JP) regression analyses to assess change in rates. JP regression is a statistical method to test for changes in time series data associated with events of interest. An interim analysis of the FIRES trial was presented at the SGO Annual Meeting on Women's Cancer in March 2014; the paper was published online in January 2017. We hypothesized that a JP, indicating a rise in the rate of adoption of SLND, would be identified in proximity to those dates. Results were considered significant at a p-value of < 0.05.

**Results:** The study cohort consisted of 127,198 pts; 70% had type I EC, 30% had type II EC. Figure 1 shows the frequency of SLND by month (mo). Although SLND among EC pts had been increasing for years (at 0.1%/mo), we found a 6-fold acceleration in the rate, to 0.6%/mo, beginning in September 2016. Analyses to assess factors contributing to this change showed that at approximately the same time (late 2016), the rise in the proportion of LND done as SLND increased to a rate of 0.8%/mo and the rise in frequency of any LND among EC pts, which had previously been decreasing at 0.05%/mo, increased to a rate of 0.3%/mo. Findings in patients with type I tumors were similar to those in the entire study population. The rise in frequency of SLND among all type I pts increased to 0.7%/mo, rise in the proportion of LND done as SLND increased to 0.9%/mo, and the rise in frequency of any LND increased to 0.4%/mo. In type II pts, the rise in frequency of SLND increased to 0.5%/mo, and the rise in the proportion of LND done as SLND increased to 0.6%/mo. The frequency of any LND in type II EC did not change. Each reported increased rate was significantly different from the rate during the 4-5 years immediately preceding late 2016. Component analysis, using 2018 frequencies of SLND and LND and above rates of change, showed that 50% of the increase in SLND was attributable to more frequent SLND in pts with type I EC.

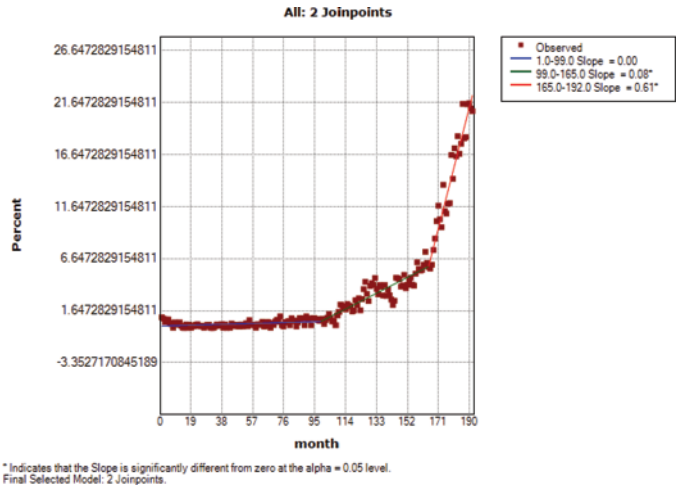


**Fig. 1** (abstract 534).

**Conclusions:** The rate of adoption of SLND in EC accelerated in association with awareness of the FIRES trial results. The acceleration was driven, in equal parts, by a shift from non-sentinel to sentinel node dissections in both high and low-risk populations and by more frequent SLND in low-risk patients. It is possible that the SLND technique, since it calls for lymph node evaluation before intra-operative assessment of the uterus can be made, may be a contributing factor, as could per-protocol LND after failed mapping.

## The past and future use of perioperative opioids in gynecologic oncology patients after open surgery (535)

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**Objectives:** As surgeons, it is our ethical imperative to minimize the harmful impact on patients and their communities through the prescription of perioperative opioid medication. This study reviews the perioperative opioid use in our gynecologic oncology surgical practice over the last decade.

**Methods:** We undertook a chart review of adult gynecologic oncology patients who underwent open surgery from July 1, 2012, to August 26, 2021. Perioperative and patient characteristics were abstracted. Prospective phone surveys were completed from April through September 2021 in this patient population two to four weeks after surgery to assess self-reported opioid use post-hospital discharge. Quantities of oral and intravenous opioid medications are reported as oral morphine equivalents (OME). Data are presented as proportions or median results by year and compared using Chi-square tests or Wilcoxon rank-sum tests, respectively.

**Results:** There were 1210 patients included in the chart review, and we completed 75 prospective surveys. From 2012 to 2021, the rate of non-steroidal anti-inflammatory drug use increased from 40.7% to 80% ($p<0.01$), and the use of epidurals and transversus abdominis plane (TAP) blocks increased from 46.5% to 93.9% ($p<0.01$, Figure 1a). The median length of hospital stay was decreased by 20% (5 to 4 days, $p<0.01$). The total amount of OME used per patient in the hospital decreased by 62.6% from 2012 to 2021 (412 OME in 2012 vs 154.3 OME in 2021, $p<0.01$). When divided by length of stay, the median OME used per day also decreased (84.7 OME in 2012 vs 42 OME in 2021, $p<0.01$). Opioid prescription sizes at the time of hospital discharge significantly decreased as well from 675 OME per patient in 2012 (equivalent to 90 doses of 5mg oxycodone tablets) to 150 OME per patient in 2021 (equivalent to 20 doses of 5mg oxycodone tablets, $p<0.01$, Figure 1b). From our prospective survey data, the actual amount of OME used by patients in 2021 after hospital discharge was a median of 22.5 OME (equivalent to 3 doses of 5mg oxycodone tablets per patient). There was a decrease in preoperative opioid use from 2012 to 2021 (41.9% in 2012 vs 28.7% in 2021, $p=0.05$). The refill rate for postoperative opioids did not significantly differ during this time period (18% in 2012 vs 10.4% in 2021, $p=0.10$).

**Conclusions:** Patients in this study used fewer opioids in the perioperative period between 2012 and 2021, likely due to utilization of enhanced recovery after surgery pathways and increased awareness of the risks of opioid misuse. While our division reduced the median postoperative opioid prescription size from 2012 to 2021 by 77.7%, our findings suggest we could further reduce prescription sizes by an additional 85% and still adequately treat our patients' postoperative pain. Ongoing assessment of surgical patients' opioid medication needs and patterns of prescribing is essential for addressing our contributions to the opioid epidemic.

## Sentinel lymph node biopsy compared with systematic lymphadenectomy in patients with uterine carcinosarcoma (536)

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