

Abstract #3**Multimodal perioperative pain protocol for Gynecologic Oncology laparotomy reduces length of hospital stay**

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Objectives: Our primary objective was to evaluate the impact of a multimodal perioperative pain regimen on length of hospital stay for patients undergoing laparotomy with a gynecologic oncologist.

Methods: We compared 52 patients who underwent laparotomy with a gynecologic oncologist at a single institution in 2017-2018 after implementation of a multimodal perioperative pain regimen to a historic cohort of 94 patients (2016-2017). The multimodal pain regimen included pre and post-operative administration of oral acetaminophen, gabapentin, and celecoxib, in addition to standard narcotics and optional epidural analgesia. Demographic, surgical, and post-operative data were collected. Linear regression models were used to determine factors associated with length of stay.

Results: On multivariable analysis, bowel resection, stage, surgery length, age and group (pre vs. post pain protocol implementation) were retained as significant independent predictors of length of stay. Patients undergoing gynecologic oncology laparotomy prior to the implementation of the pain protocol had a length of stay 1.26 times longer than patients undergoing laparotomy during the post-implementation period ($p < 0.01$). Of the more complex surgical patients who received the multimodal pain regimen (those with stage II-IV disease who underwent bowel resection), this translated into a reduction in length of hospital stay of 1.73 days when compared to the matched cohort. There was a significant reduction in average pain scale score on post-operative day zero from 4.49 to 3.63 ($p = 0.02$) and an overall reduction of morphine equivalents used between the two groups on post-operative days 0-2, although this did not reach statistical significance. Adverse outcomes between groups, including ileus, delirium, renal failure and re-admission, were similar.

Conclusions: Implementation of a multimodal perioperative pain regimen in patients undergoing gynecologic oncology laparotomy was associated with a significant reduction of length of hospital stay and improved pain scores without increased complications. Even in the absence of a complete Enhanced Recovery in Surgery Protocol, a multimodal perioperative pain regimen has the potential to shorten hospital stay and improve patient perceived pain.

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Abstract #4**Noninvasive negative pressure wound therapy decreases postoperative complication rates and hospital stays in Gynecologic Oncology patients**

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Objectives: To evaluate the utility of noninvasive negative pressure wound therapy (NNPWT) in overweight (BMI 25-29.9) and obese women (>30) undergoing midline laparotomy for gynecologic oncology procedures.

Methods: An IRB-approved retrospective chart review was conducted for all gynecologic oncology patients at two institutions who underwent a midline-vertical laparotomy from September 2012 to December 2017. The control group of patients included those who received routine abdominal bandages from September 2012 - September 2016, and the treatment group included those who received NNPWT from October 2016 to December 2017 after their purchase by the hospitals. A total of

232 charts were reviewed. Patients with a BMI <25 were excluded, yielding a total sample size of 192. The following outcome variables were analyzed: 30-day wound infection rates, 30-day hospital readmission rates, reoperation within 30-days, wound separation, dehiscence, wound collection rates and length of hospital stay. Demographic characteristics including number of previous surgeries, diabetic status, age, race, and body mass index were also analyzed. Statistical analysis was performed with SPSS. A p-value of 0.05 was used to indicate statistical significance. Outcome variables were analyzed using 2-tailed Student t-tests.

Results: There were no significant differences in demographics between the control and treatment groups. Thirty day wound infection rates were found to be significantly lower in the treatment group (9.7% vs 0, $p = 0.01$). Wound dehiscence rates were significantly decreased in the treatment group (3.75% vs 0, $p = 0.01$), as well as wound collection rates (18% vs 5.4%, $p = 0.01$). Length of hospital stay was decreased significantly from 9 days to 5.6 ($p = 0.01$). However, rates of readmission, reoperation, and wound separation were similar between the two groups.

Conclusions: The use of NNPWT in overweight and obese gynecologic oncology patients leads to improved postoperative wound outcomes and shorter hospital stays, and potentially decreases the overall costs and increases patient satisfaction. This initial data warrants further evaluation with a randomized controlled trial.

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Abstract #5**Assessing the risk of empty lymph node packets in patients undergoing sentinel lymph node mapping for endometrial cancer using indocyanine green dye**

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Objectives: To determine whether the rate of sentinel lymph node (SLN) packets that do not yield a lymph node on pathological analysis ("empty packet dissection") changes with increasing surgeon experience in the setting of patients undergoing minimally invasive hysterectomy and SLN mapping using indocyanine green dye (ICG) for endometrial cancer (EC).

Methods: All patients undergoing SLN mapping at the time of minimally invasive hysterectomy for EC or complex atypical hyperplasia (CAH) were identified between 2013 and 2017 at our institution. Six surgeons' experience with SLN mapping using ICG and rate of empty packet dissections were evaluated using a logistic regression model analysis.

Results: In total, 236 patients undergoing SLN mapping using ICG dye for either EC (85%) or CAH (15%) were identified from a prospectively maintained database. When examining all six surgeons together, the percentage of empty packet dissections decreased with increasing number of procedures performed. Each additional procedure was associated with a 3.6% reduction in the odds of an empty packet SLN dissection. After adjusting for individual surgeons, each additional procedure was associated with a 4.9% reduction in the odds of an empty packet. Therefore, the expected odds of an empty packet after 10 additional procedures decreased by 40.1% (95% CI: 12.4% to 58.6%). Figure 1 illustrates the relationship between the cumulative empty packet rate and number of procedures performed for all surgeons. Similar results were seen after additional adjustment for patient age and BMI, and the addition of these two covariates did not contribute significantly to the model (Likelihood ratio test: $X^2 = 2.75$, $p = 0.25$).

The rate of empty packets appeared to stabilize after approximately 30 procedures.

Conclusions: The odds of a SLN dissection without a lymph node identified on pathological analysis postoperatively decreases with increasing number of procedures performed. This phenomenon appears to stabilize after 30 procedures, suggesting the completion of a learning curve period.

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Abstract #6

Prevalence and predictors of HIV screening in invasive cervical cancer, an AIDS-defining illness: A 10-year retrospective cohort study

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Objectives: Invasive cervical carcinoma (ICC) is associated with an HIV prevalence of >0.1%. Opt-out HIV screening is recommended and cost-effective for cancer populations exceeding this threshold. HIV status is also prognostic for cancer-specific survival, but compliance with HIV screening is poor in the US and abroad. In order to determine the need for a quality improvement intervention in our Gynecologic Oncology (GO) Division, the current state of HIV testing was assessed.

Methods: Women treated for ICC of any stage between 2007 and 2017 at two institutions were identified by cancer registry. Women with incomplete data for age, race, ethnicity, payer, histology, stage, pregnancy, and HIV testing status, or with lack of a newly diagnosed ICC or GO evaluation were excluded. Multivariate logistical regression was performed to assess predictors of completed HIV screening.

Results: Of 1184 patients identified, 354 were eligible. All exclusions resulted from incomplete data. No patients had a diagnosis of pre-existing HIV. HIV screening was completed within 30 days of GO evaluation, either as a documented event or a laboratory finding, for newly diagnosed ICC in 26/354 (7.3%) women. HIV screening was documented within the preceding 12 months in 9/354 (2.5%) non-pregnant women, while an additional 1/354 (0.3%) had screening associated with pregnancy antecedent to her diagnosis. On multivariate analysis, race, ethnicity, histology, and payer status were not associated with screening. Every 5-year increase in age was associated with a lower chance of screening (OR 0.87, 95%CI 0.76 – 0.99, $p=0.037$), as was earlier stage at diagnosis (OR 0.38, 95%CI 0.18–0.78, $p=0.009$). Active pregnancy at the time of cancer diagnosis was predictive of screening (OR 9.3, 95%CI 1.3 – 68.1, $p=0.028$).

Conclusions: Despite CDC recommendations for HIV screening in AIDS-defining cancers, compliance remains poor. In our centers, earlier age, advanced stage and active pregnancy at diagnosis were predictive of greater compliance with screening. These data will inform a tailored intervention to improve compliance with HIV screening in our population.

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Abstract #7

Optimization of acute healthcare resource utilization using cervical cancer care navigation

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Objectives: During the treatment of advanced cervical cancer with primary chemoradiation (pCRT) unplanned health care needs often arise due to treatment side effects or acute medical complications. In safety net hospitals with limited resources, these issues are addressed in the emergency department (ED) or urgent care (UC)

setting which can be unnecessarily taxing on the health care system and the patient. The aim of this study is to investigate the impact of cervical cancer care navigation on resource utilization to meet acute episodic care needs of patients with cervical cancer undergoing pCRT.

Methods: A decision tree analysis was performed to compare resource utilization associated with acute episodic care needs of patients with cervical cancer undergoing pCRT whose care was provided through a cervical cancer care navigation program (CCNP). Data for the navigated cohort were abstracted from a prospectively collected CCNP database at a tertiary care, public, safety net hospital. Acute episodic care needs were defined as any health care needs requiring an unscheduled care encounter, including genitourinary symptoms, prescription refills, acute pain or suspected infections. A theoretical un-navigated comparison cohort was constructed using published data on health care utilization and practice patterns at our institution. Costs were identified from the institution's chargemaster.

Results: Fifty navigated cervical cancer patients required 123 encounters to meet acute episodic care needs that arose during pCRT. Cancer care navigation aided in the initial triage of 82% of these encounters which were then routed to non face to face encounters (36%), overbooked clinic visits (16%), infusion center visits (10%), UCvisits (2%), direct hospital admissions (8%) and ED visits (10%). The total cost associated with acute episodic care needs of the navigated patient cohort \$352,839. In the non-navigated model cohort, 85% of these encounters occur in the emergency department or an urgent care setting increasing the cost to \$493,264. With the cost of navigation being \$709 per patient, the cost savings for navigation is \$140,424 or 28%. Sensitivity analysis revealed a sustained 5% cost savings with CCNP if all patients in the comparison cohort went to UC and 34% savings if all went to ED.

Conclusions: Cervical cancer care navigation provides improved health care resource utilization while allowing patients to be cared for at the most cost effective venue within their respective health care system.

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Abstract #8

HPV knowledge and child vaccination rates among mothers with a personal history of gynecologic cancer

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Objectives: Vaccination against certain HPV subtypes has been available for over a decade. Research supports that vaccination prevents HPV infection and subsequent cervical cancer. Nevertheless, vaccination rates remain low. Prior studies have assessed HPV vaccination rates and knowledge acquisition among different populations. However, to date no studies have investigated the relationship between maternal gynecologic cancer history and HPV vaccination rates for their children. We aimed to determine if maternal HPV vaccination knowledge, rates of provider counseling, and rates of child vaccination differed between women with and without a personal history of gynecologic cancer.

Methods: A web based anonymous survey was administered to all members of the research registry "Research for Her™" with at least one child. Women with children born before 1980 or after 2010 were excluded. Baseline knowledge of HPV was assessed via a multiple-choice questionnaire addressing topics such as HPV transmission, vaccination criteria, and HPV-associated malignancies.

Results: One hundred and forty women completed the survey. Ninety-nine women (71%) met inclusion criteria. Thirty-four women had a personal history of gynecologic cancer (uterine, ovarian, cervical or breast), and 65 had no cancer history. Vaccination rates were lower in