recurrence of 22 m (range: 6-47 m). There were 7 (58%) vaginal recurrences, 1 (8%) pelvic, 2 (16%) abdominal, 1 (8%) vagina and pelvis, and 1 (8%) pelvis and abdomen. The cumulative incidence of recurrence (CIR) for all patients at 3 years was 11% (95% Confidence interval (CI): 5-20). For all IAG1 patients, 57 (45%) patients had inner (MI) and 3- year CIR for patients with (MI) was 17% compared to 5% (p= 0.04) in those without MI. CIR was also significant for patients with tumor size greater than 3 cm compared to less than 3cm (20% vs 1.8%, p = 0.01). The average time between biopsy and surgery was 2.3 m (range: 0-25 m). Logistic regression showed that for every one month increase in time from biopsy to surgery there was a 13% increase in the odds of recurrence (OR 1.13, 95% CI 1.03-1.24, p = 0.01). Conventional adverse risk factors of age, number of LNs removed, and LVSI showed no association with recurrence.
Conclusions: In patients with Stage 1A grade 1 EC, time to definitive surgery after biopsy is the most important predictor of recurrence. Patients with MI and tumor size over 3 cm are at higher recurrence risks and should be followed regularly. When possible, time between biopsy and surgery should be limited as this can negatively impact patient outcome.

doi:10.1016/j.ygyno.2019.03.223

Poster #34

Association of low-dose aspirin use and survival of women with monocytosis in endometrial cancer

M. Hom[a], E. Blake[a], T. Takiuchi[c], M. De Zoysa[a], H. Machida[d], L. Roman[a,b], K. Matsuo[a,b]. *[a]Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, University of Southern California, Los Angeles, CA, USA. [b]Norris Comprehensive Cancer Center, University of Southern California, Los Angeles, CA, USA. [c]Department of Obstetrics and Gynecology, Osaka University School of Medicine, Osaka, Japan. [d]Department of Obstetrics and Gynecology, Tokai University School of Medicine, Osaka, Japan*

Objectives: Tumor-associated macrophages (TAMs) are known to be associated with decreased survival in endometrial cancer. The number of monocytes, progenitors of macrophages, has been shown to be associated with worse survival in endometrial cancer. Given a recent study demonstrating anti-tumor effects with aspirin via TAMs inhibition in other tumor models, this study examined the association of aspirin use on survival among endometrial cancer patients with monocytosis.
Methods: This is a secondary analysis of a previous retrospective cohort evaluating cases of endometrial cancer of all histologic types following hysterectomy-based surgical staging from 2003-2013 (n=541). Disease-free survival from endometrial cancer was compared between women exhibiting monocytosis at diagnosis (defined as >0.7×10^9/L) versus women without monocytosis, stratified by low-dose aspirin use.
Results: The median follow-up of censored cases was 54.6 months, and there were 84 women who developed disease recurrence. At endometrial cancer diagnosis, 106 (19.6%) women used low-dose aspirin whereas 435 (80.4%) women did not. In the non-aspirin group, there were 107 (24.6%) women who had monocytosis, and women with monocytosis had a significantly decreased disease-free survival compared to those without monocytosis (5-year rate, 70.0% versus 81.8%, P=0.001). Aspirin users had a lower frequency of monocytosis compared to non-users (odds ratio 0.59, 95% confidence interval 0.33-1.03, P=0.07). Among the aspirin group (monocytosis, n=17, 16.0%), women with monocytosis had a 5-year disease-free survival similar to those without monocytosis (78.9% versus 88.1%, P=0.94). Neutrophilia, anemia, and thrombocytosis did not demonstrate this association (all, P>0.05).
Conclusions: Our study suggests a protective role of low-dose aspirin in women with endometrial cancer exhibiting monocytosis.

doi:10.1016/j.ygyno.2019.03.224

Poster #35

Pain with no gain? The impact of thoracic epidurals on an enhanced recovery program for open gynecologic surgery

M.E. Scott, T.T. Yen, J.E. Bergstrom, R.L. Stone. *Kelly Gynecologic Oncology Service, Department of Gynecology and Obstetrics, Johns Hopkins Medicine, Baltimore, MD, USA*

Objectives: Thoracic epidurals (TEs) have been a key component of opioid-sparing, multimodal perioperative analgesia since the innovation of enhanced recovery after surgery (ERAS) programs. The study objective was to examine the utilization, effectiveness and cost of TEs in an ERAS program for open gynecologic surgery.
Methods: A retrospective review of gynecologic oncology patients undergoing elective laparotomy on a TE-based ERAS program from July 2016 to June 2017 was performed (n=113). Patient demographic, surgical and post-operative variables were collected. These included venue of TE placement, duration of postoperative TE use, indication for TE discontinuation, pain scores, opioid requirements, cost and length of stay (LOS). Pain scores, opioid requirements and LOS were compared between patients with failed TE analgesia and those with consistently functional TEs. Failure was defined as temporary or permanent discontinuation of TE analgesia before tolerance of oral intake. T-tests and Chi squared tests were used to test associations between continuous and categorical variables, respectively. Statistical significance was defined at the $\alpha=0.05$ level.
Results: The overall TE failure rate was 30%. Hypotension was the most common indication for temporary TE discontinuation (84.8%). The most common indications for permanent discontinuation were tolerance of oral intake (70.6%), TE dysfunction (9.1%) and hypotension (8.2%). Supplemental PCA use was required in 40.7% of cases. The average per patient cost of TE was $1480. Intraoperative TE placement was performed in 31.8% of cases. Mean OR time required for TE placement was 19.25 minutes (range 5-45 minutes), adding an average of $280 to the procedure cost. Patients with failed TE analgesia were more likely to have a cancer diagnosis (88.9% vs 69.7%, p=0.07), have an increased LOS (8.8 vs 6.8 days, p=0.007) and require supplementation with a PCA (66.8% vs 30%, p=0.002). TE failure was also associated with increased narcotics utilization (231 vs 80 oral morphine equivalents, p=0.0085), but did not impact pain scores during the immediate postoperative course.
Conclusions: The risk and cost of TE failure are high and may compromise the ERAS mission. The value of TEs in comparison to alternative loco-regional blocks on ERAS needs to be prospectively evaluated.

doi:10.1016/j.ygyno.2019.03.225

Poster #36

Tumor vs stroma: Understanding the Role of Discoidin Domain Receptor 2 (DDR2) in ovarian cancer metastasis, chemoresistance, and survival (Final version - please disregard first submission that exceeded character limit)

M.M. Greenwade, H.B. Noia, J.M. Quinn, G. Opara, D. Wilke, L. Guo, W.R. Grither, S.T. Roach, A.R. Hagemann, C.K. McCourt, D.G. Mutch, M.A. Powell, P.H. Thaker, K.C. Fuh

Objectives: The purpose of this study is to show that discoidin domain receptor 2 (DDR2) expression is critical in ovarian cancer metastasis and predictive of chemoresistance and poor survival.

Methods: Immunohistochemistry (IHC) was performed using HGS ovarian cancer tumors. Tumor and stromal cell expression of DDR2 was scored. Clinical information was obtained and Kaplan Meier survival curves were generated. DDR2 expression was compared among chemoresistant and chemosensitive populations. Mesothelial cell clearance assays utilizing human omentum-cultured mesothelial cells with and without DDR2 expression were performed with DDR2 expressing tumor cells. Clearance area was calculated and analyzed using student's t test. To determine the effect of metastasis with DDR2 deficient stromal cells, global DDR2 knockout (KO) mice were compared to DDR2 wild-type (WT) mice when a DDR2 expressing murine tumor cell line was injected intraperitoneally. Intraperitoneal spread was quantified using tumor number, size, weight and volume of ascites.
Results: IHC tissue specimens were divided into two groups: survival <3 years and >5 years. Patients living <3 years had higher stromal and tumor DDR2 expression when compared to those living >5 years (mean stromal DDR2 IHC score 82% vs 49%, P<0.0001, mean tumor DDR2 IHC score 82% vs 66%, P<0.0001). Patients with high (>60%) stromal DDR2 staining in both primary and metastatic biopsy sites had worse overall survival and progression free survival compared to patients with low (<60%) stromal DDR2 staining [median OS 171.4 vs 34 months (P<0.0001) and median PFS 54.1 vs 21.5 months (P=0.0001)]. Chemoresistant patients had significantly higher DDR2 in the primary tumor (mean IHC score 78% vs 69%, P=0.04), primary stroma (74% vs 54%, P=0.0004), metastatic tumor (85% vs 68%, P<0.0001), and metastatic stroma (79% vs 65%, P=0.02) than the chemosensitive group. In the mesothelial clearance assay model, human ovarian cancer cells plated above DDR2 deficient mesothelial cells had less tumor cell clearance than cells plated above DDR2 expressing mesothelial cells (P=0.01). For the metastasis mouse model, DDR2 KO mice had less intraperitoneal spread of ovarian cancer cells than DDR2 WT mice by tumor nodules >1mm (P=0.02), volume of ascites (P=0.03), and tumor weight (P=0.02).
Conclusions: Our results indicate that tumor and stromal cell expression of DDR2 promotes ovarian cancer metastasis, chemoresistance, and survival, thus making DDR2 a potential target to guide future therapy.

doi:10.1016/j.ygyno.2019.03.226

Poster #37

Obstetrics and Gynecology resident interest in and perceptions of Gynecologic Oncology

N. Jooya, R. Guerra, E. Nugent, J. LucciIII. *The University of Texas Health Science Center at Houston*

Objectives: To assess resident interest in the field of Gynecologic Oncology and determine perceptions of Gynecologic Oncology when compared with Obstetrics and Gynecology and related subspecialties.
Methods: A survey was designed using Qualtrics and distributed to Obstetrics and Gynecology residents in the United States. It featured questions regarding demographics and perceptions of Gynecologic Oncology when compared to Obstetrics and Gynecology and other subspecialties. Survey questions were adapted from a paper by Siddigghi et al (2008) studying resident and fellow perceptions of female pelvic medicine and reconstructive surgery. 257 residents received the survey with a 34% response rate after one send-out.
Results: Most participants were female (88.76%), White (64.04%), Christian (53.41%), and married (48.28%). 12.64% were definitely considering a Gynecologic Oncology fellowship. The top three factors that increased interest in the field of Gynecologic Oncology were complex/challenging surgery, comprehensive care, and the ability to perform both surgery and clinical medicine. The top three factors that decreased interest in the field were the work schedule, end of life care, and critical care. When compared with general Obstetrics and Gynecology, the field of Gynecologic Oncology was felt to have much more research potential and impact on personal time; and somewhat more prestige, intellectual challenge, stress, and income potential. When compared to other Obstetrics and Gynecology subspecialties, Gynecologic Oncology was felt to have an increased impact on personal time and stress level. Gynecologic Oncology was felt to be somewhat more competitive to enter. Gynecologic Oncology was thought to be similar when compared to other Obstetrics and Gynecology subspecialties with regard to length of training, research potential, technological developments, and sense of satisfaction.
Conclusions: As the population continues to age, the incidence of cancer will continue to increase. The field of Gynecologic Oncology is in demand and will continue to grow and will need new members in the coming years. Understanding the factors that influence decisions to enter the field is crucial in recruiting strong new members from residency programs.

doi:10.1016/j.ygyno.2019.03.227

Poster #38

Natural anti-carbohydrate human IgM for cancer immuno-therapy

Mahsa He[a,b], Zenhua Du[a], Neelima Bhat[a], Marcia Bieber[a], Nelson N.H. Teng[a]. [a]*Department of Obstetrics and Gynecology, Division of Gynecologic Oncology, Stanford University School of Medicine, Stanford, Calif.* [b]*Molecular Imaging Center, The Fifth Affiliated Hospital, Sun Yat-sen University, Zhuhai, China*

Objectives: Recently, there is a significant heightened interest in post-translational glycosylation of tumor cell. The cancer glycomics have differentiated them from the normal cells. Hence, tumor surface glycan becomes an attractive target for immunotherapy. Human VH4-34 gene-encoded IgM mAbs, 216 (hybridoma-produced) and 55.5 (recombinant CHO-produced), bind to the straight-chain poly-N-acetyl-lactosamine (SC-PNAL) glyco-epitope. SC-PNAL decorates a small group of proteins that include CD147 and CD98. A recent study demonstrates the presence of SC-PNAL on PD-L1 that are exploited to disinhibit cytotoxic T cells. Besides PD-L1, SC-PNAL is also expressed human B-cells, a subset of T-cells (including T-regs), and macrophages. We have studied the immunoregulatory properties of VH4-34 encoded SC-PNAL (human IgM) targeting mAbs in altering the tumor immune environment towards anti-tumor immunity.
Methods: We used two mouse syngeneic models; a cervical, lung cancer TC-1 model and OVCA HM-1 model. Dual treatment with cisplatin and mAb55.5 was undertaken in a subcutaneous and peritoneal model for TC-1 and HM-1 respectively. The tumor was treated with intra-tumoral or intraperitoneal drug administration. The tumor size, weight, drug toxicity and survival were monitored. Tumor explants and associated lymphoid tissue (draining lymph nodes, spleen), blood were taken at appropriate time. Immune-profiling was done with FACS.
Results: We show significant tumor volume reduction and increased survival in both models. Analysis of tumor infiltrating lymphocytes demonstrates a significant increase in CD8+ T-cells and decrease in T-regs in mice treated with both CDDP and mAb55.5. The immunoregulatory mechanism of targeting a sugar ligand by VH4-34 encoded IgMs is discussed.
Conclusions: 1) Natural occurring mAb has specificity to both liquid and solid tumor and immune cell surface glycan. 2) These mAbs have immunoregulatory properties. 3) Can be a novel treatment of gynecologic cancers.

doi:10.1016/j.ygyno.2019.03.228