PCS patients (95% CI: 2.37, 5.39). 90-day mortality was similar for PCS and NACT patients in the multivariate analysis, HR: 1.23 (0.99, 1.51).
Conclusions: Based on this study, all patients with advanced stage epithelial ovarian cancer should be offered PCS. Tumor burden should not preclude PCS. Only patients not fit for surgery due to comorbidities should be treated with NACT.

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Abstract #14
Comparison of treatment and outcomes between medical oncology and gynecologic oncology as adjuvant chemotherapy provider in an advanced ovarian cancer population

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Objectives: Significant survival advantages have been reported for patients who undergo initial cytoreductive surgery with gynecologic oncologists (GO). However, data are scarce regarding differences in outcomes based on the subspecialty of the physician who administers adjuvant chemotherapy.
Methods: We retrospectively reviewed charts of advanced stage (IIIC-IVB) epithelial ovarian cancer patients who received any of their treatment at our NCI-CCC institution between 1/1/2001-12/31/2015. Patients were separated into two cohorts based on the physician who administered their adjuvant chemotherapy: GO or medical oncologist (MO). The cohorts were compared in sociodemographic, clinicopathologic and treatment characteristics using Fisher's exact for categorical variables and t-test for continuous variables.
Results: Of 534 total patients, 368 (68.9%) initiated their adjuvant chemotherapy with a GO versus 166 (31.1%) with a MO. Patients were well-matched in age at diagnosis (p=0 .05), BMI (p=0.79), educational background (p=0.85), race (p=0.93), marital status (p=0.06), histological subtypes (p=0.57), grade (p=0.61), stage (p=1.0), debulking status (p=0.054), total lines of therapy (p=0.43) and platinum sensitivity (p=0.92). Patients in the GO group more often had the following: a drive >50 miles (p=0.04), private insurance (p=0.017), worse ECOG scores (p=0.035), higher Mayo surgical complexity score (p=0.042), and positive lymph nodes (p=0.031). Patients who initially sought treatment with a MO more frequently received neoadjuvant chemotherapy (14.4% vs 1.6%, p
Conclusions: In similar groups of patients, there were a greater proportion of patients with no evidence of disease or alive with disease for those receiving treatment with a GO. These data suggest that the subspecialty of the physician delivering chemotherapy may affect differences in outcomes after initial cytoreductive surgery and warrants further investigation.

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Abstract #15
Disparate care in primary treatment of advanced ovarian cancer: Do we maintain equipoise?

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Objectives: Since 2010, multiple randomized trials have demonstrated equivalent survival with fewer adverse outcomes following neoadjuvant chemotherapy (NACT) as compared to primary cytoreductive surgery (PCS) for women with advanced stage ovarian cancer. Since then, a larger proportion of women are undergoing neoadjuvant chemotherapy, yet little is known about the characteristics of these women. The aim of this project was to evaluate whether treatment approach (NACT versus PCS) was associated with socioeconomic status, race/ethnicity or geographic distance from a gynecologic oncologist.
Methods: We performed a retrospective chart review of all women with stage III or IV ovarian, fallopian tube or peritoneal cancer receiving PCS or NACT at an urban academic medical center from 2011-2016. Descriptive analyses were performed using chi-squared, Student's t-test, or Wilcoxon log-rank.
Results: A total of 241 women were identified, and complete data was available for 149 women. Within this subset, 54 women (36%) received NACT while 95 women (64%) underwent PCS. The median age was 62 (IQR 47-77) years and the most common histology was serous (77%); these did not vary significantly by treatment course. The majority of women were white (71%), but women who received neoadjuvant chemotherapy were more likely to be Latina (17% vs. 11%) or African American (7% vs 1%, p=0.024). There was no difference in primary language, type of insurance or distance from an academic medical center between the two groups. Adjuvant chemotherapy after cytoreductive surgery varied by treatment group, with those receiving NACT more likely to receive every 3 weeks carboplatin/paclitaxel (52 vs 27%), whereas the PCS group more frequently received dose dense chemotherapy (9% vs 17%), IV/IP chemotherapy (6 vs 24%) or enrolled in a clinical trial (0 vs 9%, p<0.0001).
Conclusions: We identified disparities in treatment for ovarian cancer by race/ethnicity. Disparities in outcome for gynecologic cancer are well documented, but the etiologies for these disparities are less elucidated. When there are practice changes in a field of medicine, there is the possibility for differential care, especially in underserved populations. Future research should focus on the significance of decision making in the community, how differences in treatment may impact ovarian cancer outcomes, and identification of interventions that may reduce disparate care.

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Abstract #16
A comparison of molecular tumor profiles from hispanic and non-hispanic women with ovarian cancer

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Objectives: Ethnic background has been associated with differences in ovarian cancer survival. Molecular profiling by next generation sequencing (NGS) has afforded the opportunity to examine somatic mutations, amplifications, and abnormalities in protein expression on an individual level. Little data exist about variations in NGS results by ethnicity. Our objective was to compare molecular tumor profiles of Hispanic (HS) and Non-Hispanic (NH) women with ovarian cancer.
Methods: Women from our institution with ovarian cancer whose tumors had undergone molecular profiling from April 2014 to October 2017 were identified. Data were collected from these reports along with tumor histology and germline testing results. Statistical analyses were done using Fisher's Exact Test and Chi-square, with significance set at p< 0.05.
Results: Data were available for 71 women, 37 (52.1%) of whom were Hispanic and 34 (47.9%) of whom were Non-Hispanic. Epithelial

histologies were distributed equally among the patients (92% HS vs 91% NH, p=0.82), as was the proportion of high-grade serous carcinoma (70.3% HS vs 76.5% NH, p=0.98). Twenty-one (56.8%) HS and 23 (67.6%) NH received germline testing (p=0.34); 3 (8.1%) HS and 6 (17.6%) NH had a germline mutation associated with a homologous recombination deficiency (HRD) (p=0.48). The most common somatic mutations for both groups involved TP53 (67.5% HS vs 70.6% NH, p=0.90). There were no statistically significant differences between HS and NH with respect to individual somatic gene mutations, though the genes expressed were dissimilar (Figure 1). Three (8.1%) HS and 8 (23.5%) NH had somatic BRCA2 amplifications or mutations, though this difference was not statistically significant (p=0.12). The proportion of somatic BRCA1 mutations was similar in both groups (13% HS vs. 12% NH, p=0.99). EGFR mutations were only noted in HS, while Her2/Neu mutations were only noted in NH. Twelve (32.4%) HS and 8 (16.2%) NH has positive staining for either PD-1 or PD-L1 (p=0.27).

Conclusions: HS and NH women with ovarian cancer had similar tumor characteristics and similar frequencies of germline testing and somatic mutations in this limited sample. Trends towards more frequent PD-1/PD-L1 staining in HS along with ethnic differences in somatic mutations between these two groups warrant additional study.

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Abstract #17

Is there a role for for minnelide in uterine serous cancers?

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Objectives: Most women with uterine serous carcinoma (USC) have a high risk of advanced stage disease and/or recurrence, and in these settings, there are few effective therapies. There is a need for effective therapy in the recurrent USC. Minnelide is bioavailable prodrug of Triptolide, which was isolated in the Chinese herb, Thunder god vine (Tripterygium wilfordii). Minnelide is currently in phase II clinical trials for pancreatic and GI cancers. The purpose of this study was to explore the effect of Minnelide on USC in preclinical models.

Methods: The active form of Minnelide, was tested in vitro using two USC cell lines, Ark1 & Ark2. Tumor cells were treated for 48h. Cytotoxicity was assessed with Cell Counting Kit-8 (Dojindo) and real-time growth inhibition by electrical impedance measurements (xCelligence, Roche). A mouse model using Ark2 was used to determine the efficacy of Minnelide either alone or in combination with Carboplatin on tumor growth inhibition in vivo. Western blotting was used to determine mechanism of action by induced changes in programmed cell death pathways.

Results: Cytotoxicity assays demonstrated that Minnelide's active form, Triptolide, was effective in inhibiting cell viability at nanomolar concentrations. The half maximal inhibitory concentration was 11nM for Ark1 and 17nM for Ark2. Real-time growth inhibition assays were consistent. In a mouse model using Ark2 cell line, Minnelide at high (0.4mg/kg) and low (0.2mg/kg) doses significantly inhibited growth compared to carboplatin (P<0.0005). High dose (0.4mg/kg) was more effective than low dose Minnelide (0.2mg/kg). Addition of Caboplatin to the low dose Minnelide treatment regimen did not change the efficacy of monotherapy with Minnelide alone. No gross toxicity was noted in treated animals. Western blotting showed activation of apoptotic pathway induced by p53 upregulation and downregulation of anti-apoptotic protein Bcl-2.

Conclusions: Minnelide, was very effective in inhibiting the USC cell lines at nM levels. In mouse models, Minnelide treatment showed dose-dependent inhibition of tumor growth. Caboplatin treatment showed no significant tumor growth inhibition. Efficacy of Minnelide did not improve in combination with Carboplatin. This suggest that Minnelide alone was highly effective against Carboplatin resistant USC. Mechanistic studies showed activation of intrinsic apoptotic pathway. Given the minimal toxicity profile reported in clinical trials, Minnelide is an attractive drug for further exploration.

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Abstract #18

Quantitative computed tomography image feature analysis predicts response to immune checkpoint inhibitors in gynecologic cancers

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Objectives: To investigate the role of applying quantitative image (QI) feature analysis computed from computed tomography (CT) images for early prediction of tumor response to immune checkpoint inhibitors (ICPI) amongst patients with recurrent gynecologic cancer.

Methods: We conducted a retrospective review of 39 patients with gynecologic cancer at a single institution who received an ICPI for management of recurrent disease. Each patient had CT images prior to and after the initiation of therapy. A computer-aided detection scheme was applied to segment metastatic tumors previously tracked by radiologists on CT images and computed image features. A QI feature pool was built using image features computed from the image feature difference between pre- and post-therapy images. A features selection method was applied to select optimal features, and an equal-weighted fusion method was used to generate a new quantitative imaging marker for each pool to predict 6-month progression-free survival (6PFS). The prediction accuracy between quantitative imaging markers and the response evaluation criteria in solid tumors (RECIST) criteria were also compared. Complete response (CR), partial response (PR), stable disease (SD) and progressive disease (PD) were assessed by RECIST criteria.

Results: Of the 39 patients identified, 21 patients (54%) had ovarian cancer, 11 patients (28%) had cervical cancer, and 7 patients (18%) had uterine cancer. 27 patients (69.2%) received a programmed death 1 (PD-1) inhibitor, 8 patients (20.5%) received a programmed death-ligand 1 (PD-L1) inhibitor, 3 patients (7.7%) received a combination of PD-1 inhibitor and cytotoxic lymphocyte antigen-4 (CTLA-4) inhibitor, and 1 patient (2.6%) received anti-cell immunoglobulin and ITIM domain protein (TIGIT) resulting in 1 CR, 9 PR, 9 SD, and 20 PD. The area under the receiver operating characteristic curve (AUC) is 0.94 (95% CI 0.87-1.00) when using QI feature analysis to predict 6PFS and 0.76 (95% CI 0.67-0.85) when using RECIST criteria. The difference in AUC between the two methods was significant, (QI feature analysis vs RECIST 0.19, 95% CI 0.083-0.288, p=0.0004). QI feature analysis resulted in a prediction accuracy level of 92.3% versus 61.5% when using RECIST criteria.

Conclusions: Quantitative CT image feature analysis accurately predicts response to ICPI in patients with recurrent gynecologic cancer. This technology is a promising tool to predict the clinical benefit of ICPIs early in the course of treatment of gynecologic cancers.

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