controlled medical or psychiatric conditions precluding weight loss intervention, or a second active malignancy. Women with BMI ≥30kg/m2 were offered referral for medical management and women with obesity-related comorbidities or BMI ≥40kg/m2 were also offered surgical consultation. A historic control group was identified during the enrollment period. All patients were followed for a maximum of 2 years. Descriptive statistics and univariate analyses were performed using statistical software.

Results: One hundred and fifty-three women were enrolled in the intervention group and compared to a control group of 104 women. Mean initial age was 55 years (SD 8), mean initial BMI was 42 kg/m2 (SD 9), with no significant differences between groups. Median follow-up time was 18 months (IQR 12-24). One hundred forty-five women (95%) were offered referral for medical management and 63 (43%) accepted, of which 23 (37%) attended the appointment and 18 (29%) initiated a weight loss plan. One hundred and two women (67%) met criteria for surgical management and 45 (44%) accepted, of which 6 (13%) attended the appointment and 4 (9%) underwent bariatric surgery. Initial BMI was higher for women accepting versus declining referral (44.4 vs. 41.4 kg/m2, P=0.048). Of all 257 women, 74 demonstrated BMI loss >1kg/m2 (29%), 107 (42%) remained stable within 1kg/m2, and 76 (30%) demonstrated BMI gain >1kg/m2. Both women who accepted or declined the referral in the intervention cohort demonstrated BMI loss compared to the control group which demonstrated BMI gain (-0.82 vs. -0.50 vs. +0.50 kg/m2, P=0.041). Women in the intervention group were more likely to lose weight (54 vs. 39%, P=0.016). Women in the control group were more likely to experience weight gain (59 vs. 41%, P=0.005), and were almost twice as likely to gain >1kg/m2 (40 vs. 22%, P=0.001).

Conclusions: Obese endometrial cancer survivors should be referred for medical and surgical obesity management programs, as referral is associated with better long-term weight control.

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Abstract #30

Drug efficacy testing of targeted therapies in endometrial cancer organoids is partially predicted by cancer gene mutation data (Correct)

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Objectives: To determine the efficacy of targeted therapies based on genomic profiling of endometrial cancer patient derived organoids (PDO).

Methods: Genomic analysis was performed on previously derived endometrial cancer PDO lines. The panel consisted of 761 genes selected for their known or suspected associations with cancer. Drugs targeting the mutated genes were identified through an online search using clinicaltrials.gov. If no FDA-approved drugs were identified, agents were chosen using preclinical data. The following drugs were utilized in this study: Palbociclib, Everolimus, LY3039478, Mocetinostat, Trametinib, Deltarasin, LY294002, AZD5363, MK-1775, Sorafenib, PRI-724, Olaparib, Ceritinib, Critozinib, GSK126, Oxaliplatin, Paclitaxel, and VS-5584. A single concentration of each drug was selected to reflect plasma concentrations achieved in therapeutic trials. Cryopreserved, accutase-treated organoids were thawed, suspended in serum-free media, and plated on Day 0. On Day 1, targeted drugs and control media were added to each well. On Day 6, viability assays were performed using CellTiter Glo reagent and read using a Promega luminometer. The average percent inhibition for each drug was calculated and considered clinically meaningful if it was greater than 50%. Statistical analysis was performed using Student's t-test. A two-tailed p-value less than 0.05 was considered significant.

Results: Eleven previously derived endometrial cancer PDO cultures underwent genomic testing. Genomic analysis revealed an average of 43 non-synonymous mutations per PDO culture, ranging from 13 to 320 mutations. Three of these cultures (EN-734, -768, and -793) were serially passaged and underwent targeted therapy assays based on their genomic profile. For all three organoid lines, expected inhibition based on specific target mutations was 50% (15/30). Cases where the presence of mutations perfectly predicted expected inhibition were noted with LY294002, AZD5363, PRI-724, and Olaparib. There were also cases where there was unexpected resistance despite the presence of gene mutations, such as for Everolimus and VS-5584. Additionally, 44% (8/18) of agents in the drug panel produced inhibition despite the absence of mutations (Table 1).

Conclusions: These results suggest that the mutational landscape may successfully predict sensitivity to certain targeted agents but cases of unanticipated resistance or sensitivity are not uncommon. A pre-treatment empirical ex vivo assessment of a drug's anti-tumor activity using a PDO model could be helpful in the selection of the most active agents for each patient. Further research reflecting current treatment standards such as combination chemotherapy will be needed to more accurately reflect what occurs in the clinical setting.

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Abstract #31

Comparison of effectiveness of two strategies to identify Lynch Syndrome in women with endometrial cancer

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Objectives: The purpose of this study is to estimate the differences in Lynch Syndrome (LS) case identification between two strategies of IHC testing, universal immunohistochemistry (IHC) testing for all endometrial cancers (EC) and referral -based testing for EC patients under age 60.

Methods: This is a retrospective study of all EC cases from two regions of a large California healthcare system with differing LS screening protocols. There were 1,399 cases from Northern California (NC) over 19 months, where IHC testing is physician ordered (non-automated) for all cases of EC under age 60 and for those age 60 and older with family or tumor features suggestive of LS. There were 646 cases from Southern California (SC) region over 14 months, where IHC is universal and automated for all cases of EC. The following variables were compared between the two institutions for all EC cases: demographics, tumor characteristics, IHC results, and personal and family history of LS cancers. Among all abnormal IHC cases, data was collected for referral to genetics and genetic testing.