

of patients (92.1%) were white. Eighty-four patients (81.4%) had lymph node macrometastases, 12 patients (11.7%) had MM, and 7 patients (6.8%) had ITCs. On univariate analysis, increasing tumor size, cervical involvement, increasing grade, type II histology, African American race, para-aortic involvement, and not using combination chemotherapy/radiation were associated worse survival ( $p < 0.05$ ). Predictors of lymph node involvement were increasing tumor size, depth of invasion, grade, and LVSI, but there was no predictor to distinguish MM/ITC from macrometastases. For depth of invasion  $< 50\%$ , size  $< 2\text{cm}$ , no LVSI, there were no macrometastases or MM/ITC seen. Chemotherapy with radiation was the most common adjuvant regimen (chemo+RT - 78%, chemo only - 14%, RT only - 1%, none - 6%). No survival difference was seen in MM/ITC vs macrometastases ( $p = 0.79$ ).

**Conclusions:** The management of MM/ITC is unclear. We report that there is no predictor to distinguish macrometastases versus MM. Treatment, recurrence, and survival patterns did not differ significantly likely due to the majority of patients receiving combination therapy. Continued research is necessary to understand the impact of isolated MM/ITC to inform prospective study for treatment management of isolated MM/ITCs.

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#### Poster #18

##### The impact of adjuvant treatment in intermediate risk, Stage I endometrial cancer with somatic CTNNB1 mutation

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**Objectives:** Somatic *CTNNB1* mutations have been associated with worse recurrence-free survival in low grade, early stage endometrial cancer patients. We hypothesized that the use of current adjuvant therapy strategies would improve survival outcomes in *CTNNB1* mutant early stage endometrial cancer patients.

**Methods:** Patients with Stage I endometrioid endometrial cancer who received care at our institution were included in this study. Demographic and clinical information were obtained by review of the electronic medical record. *CTNNB1* mutation status was determined using either next-generation sequencing panels or focused Sanger sequencing of exon 3 of the *CTNNB1* gene. Comparative statistics were used to compare baseline characteristics, and Kaplan-Meier product limit estimator was used to determine recurrence-free survival (RFS).

**Results:** 253 Stage I endometrial cancer patients were identified. Of these, 45 (18%) had *CTNNB1* mutations. In patients with low risk endometrial cancer (no LVSI, no or superficial myometrial invasion less than 50% myometrial thickness, grade 1-2) who did not receive adjuvant therapy, *CTNNB1* mutation status was not associated with significantly worse RFS (8.1 vs. 11.3 years,  $p = 0.64$ ). However, in patients with deep myometrial invasion and/or LVSI with any histologic grade ( $n = 71$ ), the presence of a *CTNNB1* mutation was associated with shorter RFS (2.4 vs 8.5 years,  $p = 0.01$ ). Furthermore, those patients with somatic *CTNNB1* mutations who did not receive adjuvant therapy demonstrated the worst RFS (Table 1). Of the 5 patients with somatic *CTNNB1* mutations who received adjuvant therapy, all received radiation (3 brachytherapy only, 2 pelvic radiation and brachytherapy).

**Conclusions:** In Stage I endometrioid endometrial cancer patients with intermediate risk factors, treatment of patients whose tumors harbor *CTNNB1* mutations resulted in improved recurrence-free survival. Molecular characteristics including *CTNNB1* mutation status

should be incorporated into adjuvant therapy treatment algorithms. Prospective trials such as PORTEC4a can help elucidate which adjuvant therapies are most beneficial.

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#### Poster #19

##### Hypermethylation testing to identify Lynch Syndrome in endometrial cancer patients: Is it worth it?

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**Objectives:** To determine if MLH1 promoter hypermethylation (HM) testing of endometrial cancer (EC) is a cost-effective triage strategy for Lynch Syndrome (LS) testing.

**Methods:** We constructed a decision analysis to compare cost-effectiveness of 3 screening strategies: (1) no immunohistochemistry (IHC) testing, with referral for genetic testing (GT) based on Bethesda criteria (BC) alone; (2) IHC alone with no HM testing, with referral for GT based on BC or abnormal IHC testing; or (3) IHC and reflex HM testing, with referral for GT based on BC or abnormal IHC testing with negative HM. To evaluate the cost associated with each strategy, data from all consecutive patients with primary EC treated by gynecologic oncologists within one system from 2013–2017 were used to populate the model. Pts were identified through the institutional cancer registry and departmental billing records; data was extracted from the medical record. Costs were obtained for each branch point at which reimbursement occurred. Cost/life years (LY) saved and cost/quality-adjusted (QA) LY were calculated for each testing option based on published insurance reimbursement rates, cost data, and institutional reimbursement data. Results were compared using a one-way ANOVA for the three screening strategies.

**Results:** We identified 1208 eligible pts. In our system, 282 pts had no IHC or HM; 876 pts had IHC but no HM; and 50 had IHC with reflex HM. Of the 282 pts with no IHC or HM, 33% of pts complied with GT when indicated and 1 case of LS was identified. In the second group of 876 pts with IHC but no HM, 698 pts had normal IHC and GT was indicated in 45 of these pts with 0 cases of LS identified. In the 178 pts with abnormal IHC, 100 pts were compliant with GT and 13 cases of LS were identified. In the last group of 50 pts with IHC and reflex HM, 1 had abnormal IHC without HM, and she underwent GT and had LS. Including downstream testing, the cost/case of LS identified with each modality was \$4000, \$24,178, and \$17,000 respectively. The cost/QALY gained in each modality was \$3235, \$4895 and \$3486 respectively. The percentage of pts referred for GT was 22%, 41%, and 22% respectively.

**Conclusions:** The cost/QALY gained for each of the 3 testing algorithms was acceptable. Although IHC +/- HM was more expensive than no IHC testing, the number of unnecessary GT visits was lower when reflex HM was incorporated. The optimal cost-effective triage strategy to detect LS in pts with EC that preserves the scarce resource of GT appears to be IHC with reflex HM testing.

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#### Poster #20

##### Endometrial cancers in BRCA1 or BRCA2 germline mutations carriers

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