

that race and insurance status may be important social determinants in cervical cancer treatment. Whether the differences noted in brachytherapy here affect overall cervical cancer mortality or morbidity warrant further studies.

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Poster #8

Can preoperative cervical excision pathology predict the need for adjuvant radiation in early-stage cervix cancer?

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Objectives: Appropriate selection of surgical candidates in early-stage cervical cancer is critical given increased morbidity of dual modality treatment. We sought to assess if pathologic characteristics of preoperative cold knife cone [CKC] or loop electrosurgical excision procedure [LEEP] could predict the need for postoperative radiotherapy (RT).

Methods: After IRB approval, patients who underwent radical hysterectomy (RH) for early-stage cervical cancer from 1/2010-12/2017 were identified; demographics and clinicopathologic data, including imaging, surgery, adjuvant treatment and disease outcomes, were retrospectively collected. Our primary outcome was the need for adjuvant RT. The exposure of interest was preoperative evaluation of CKC/LEEP specimens using Sedlis criteria. Descriptive statistics were performed. Fisher's exact test was used to compare groups.

Results: 148 patients underwent RH. Of these, 57 (38.5%) had a preoperative biopsy without excision and 91 underwent cervical excision prior to RH. Of the 57 patients who did not have a CKC/LEEP, 35 (61.5%) needed adjuvant RT as compared to 23/91 patients (25.3%) who underwent CKC/LEEP ($p<0.05$). Of the 23 patients who had a CKC/LEEP and needed adjuvant RT, 9 patients met 2 of 3 Sedlis criteria. Of those patients meeting 2 of 3 Sedlis criteria on preoperative cervical excision ($n=21$), 42.9% needed adjuvant RT. There was a higher risk of needing adjuvant RT if patients met 2 of 3 Sedlis criteria on cervical excision specimen (see table 1, $p<0.05$). Of the patients meeting 0 or 1 Sedlis criteria on excision ($n=70$), 14 (20%) of patients needed adjuvant RT. Of the 23 patients who needed adjuvant RT after CKC/LEEP and RH, 95.6% ($n=22$) had positive margins on cervical excision. Of the 70 patients who did not need adjuvant RT after excision and RH, 67.1% ($n=47$) had positive margins on their cervical excision ($p<0.01$).

Conclusions: Women who met ≥ 2 of Sedlis criteria on their excisional biopsy were at more than twice the risk of needing adjuvant radiation as compared to those meeting ≤ 1 of criteria. Patients who meet 2 of 3 Sedlis criteria on cervical excision for early-stage cervix cancer should be counseled that they are at increased risk for needing RT postoperatively.

Table 1
Patients who underwent CKC/LEEP prior to RH

	Met 2 of 3 Sedlis criteria	Did not meet 2 of 3 Sedlis criteria	Total Patients
CKC/LEEP and no adjuvant RT	12	56	68
CKC/LEEP and adjuvant RT	9	14	23
Total patients	21	70	

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Poster #9

Histology matters in developing a framework for explaining racial disparity in cervical cancer survival

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Objectives: The objectives of this study were to determine if histology matters in the racial disparity in survival between non-Hispanic Black (NHB) and non-Hispanic White (NHW) women with cervical cancer and investigate the contributors of the racial disparity in survival in adenocarcinoma (AC) compared with squamous cell carcinoma (SCC).

Methods: Propensity score analysis using inverse probability treatment weighting was applied to NHB and NHW women diagnosed with a single primary stage I-IV AC or SCC of the uterine cervix between 2004 and 2014 in the National Cancer Database to sequentially balance the patients by age, neighborhood income, insurance, comorbidity score, stage, grade and treatment within each histologic subtype. Other races, ethnicities and histologic types were excluded. Hazard ratio (HR) and 95% confidence intervals (CI) for NHB versus NHW women were calculated from weighted Cox modeling and excess relative risk (ERR) of death was expressed as a percent of the individual contribution of each factor.

Results: NHB women with AC were more likely than NHW women to be diagnosed at an older age (mean age was 54 versus 48 years), with advanced stage (38% versus 22%) and with high grade (45% versus 25%), respectively ($P<0.0001$). Racial disparity in survival was evident in both SCC (**Fig 1A**) and AC (**Fig 1B**), with a larger disparity in AC histology (interaction $P<0.0001$ indicated $HR_{SCC} \neq HR_{AC}$ for NHB vs NHW women). After sequentially balancing for the seven sets of explanatory variables, the HR (CI) for NHB vs NHW patients dropped from 1.21 (1.16–1.27) to 1.02 (0.98–1.06) in SCC and from 2.46 (2.22–2.73) to 1.06 (0.96–1.17) in AC. The individual contribution to the ERR of death in NHB versus NHW varied between SCC (**Fig 1C**) and AC (**Fig 1D**). In SCC the largest contributors to racial disparity in survival were neighborhood income and insurance status explaining 43.9% and 20.7%, respectively. In AC, age, neighborhood income, insurance status and stage explained 40.2%, 17.7%, 11.3% and 16.6% of the racial disparity in survival, respectively.

Conclusions: Racial disparity in survival between NHB and NHW patients with either SCC or AC is largely explained by neighborhood income and insurance status. Age played a dominant role in explaining the survival disparity in AC. Unexplained factors contribute minimally to increased risk of death for NHB women. This finding further supports the case for policy change to expand equitable pay and equal access to health care. The larger racial disparity in survival with AC histology highlights the need for systematic screening methods to improve early detection of AC cervical cancer across all age groups. Identifying the molecular alterations that induce AC histology may also uncover targetable pathways to mitigate racial disparities. Further investigations of racial admixture and social determinants of health in cervical cancer are needed.

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