rates n = 25 (73,5%) than those with complete pathologic response n = 9 (26,5%) (p = 0,006). Surgery performed until 6 months after CRT reduced recurrences in the first 5 years of follow up (p=0,01). Among patients submitted to surgery with RD, 89,5% (n = 17/19) presented distant metastasis during follow up (p=0,03). Multivariated analysis showed RD as a predictive factor for recurrence (p=0,02, HR = 1,85 CI (1,07–3,19)). DFS and OS was not significantly different between surgery and control group (log rank test, p = 0,25 and p = 0,13, respectively). In multivariate analysis, overall survival was found to be associated with RD (p=0,001) and recurrence (p<0,001).

Conclusions Completion surgery after CRT highlights the pathologic response as a prognostic factor. It cannot be accessed with accuracy by physical exam, imaging or biopsy and is associated with recurrence and death bringing information that can be used to tailor further treatment.

EPV042/#199 RACIAL AND REGIONAL DISPARITIES IN THE DIAGNOSIS OF ADVANCED STAGE CERVICAL CANCERS IN THE US: WHO IS MOST AT RISK?

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10.1136/ijgc-2021-IGCS.110

Objectives Prior studies have found an increase in advanced stage cervical cancers in the US. We propose to determine the high risk group based on demographic and clinical characteristics.

Methods Microscopic confirmed cervical cancer was obtained from United States Cancer Statistics (USCS) from 2001 to 2017. Age-adjusted incidence (AAI, per 100,000 women, corrected by US 2000 standard population), age-specific incidence (ASI, per 100,000 women), and trends were calculated by SEER*Stat 8.3.8 and Joinpoint Regression Program 4.8.0.1.

Results Of 27,102 patients with advanced stage cervical cancer from 2001–2017, 17,097 (63%) were White, 4,939 (5%) were Black, 3,636 were Hispanic (2%), and 1,117 were Asian (0.5%). Squamous and adenocarcinoma consists of 17,867 and 4,992 patients, respectively. The age group with the highest incidence of advanced cancer was 50–54 years, 2.29/100,000. Based on race, Black and Hispanic patients have higher incidence at 1.35/100,000 and 1.18/100,000 compared to White patients, 0.86/100,000. With respect to region, the South has the greatest incidence at 1.04/100,000. The intersectionality of age, race and region finds that Black women, aged 65–69, residing in the South have the highest incidence at 4.19/100,000, an incidence nearly three times higher than White women of the same age in the South at only 1.63/100,000.

Conclusions Advanced stage cervical cancer continues to disproportionately affect minorities in Southern regions in the US. Resources toward screening and vaccination are needed in these at risk groups.

EPV043/#200 THE INCREASING INCIDENCE OF METASTATIC CERVICAL CANCER IN THE UNITED STATES – WHAT FACTORS ARE RESPONSIBLE?

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10.1136/ijgc-2021-IGCS.111

Objectives To determine the incidence and trends of advanced stage cervical cancer in the United States.

Methods Data were obtained from the U.S. Cancer Statistics program from 2001–2017. SEER*Stat 8.3.8 and Joinpoint regression program 4.8.0.1 were used to calculate incidence trends.

Results of 27,102 patients with advanced stage cervical cancer from 2001–2017, 17,097 (63%) were White, 4,939 (5%) were Black, 3,636 were Hispanic (2%), and 1,117 were Asian (0.5%). Over time, there has been an annual increase in advanced stage cervical cancer at a rate of nearly 2% per year (p<0.001); however, those with early stage cancers have a decrease of 1.54% annually (p<0.001). Women aged 30 to 65 years showed an overall increase in incidence, however those 30–34 years olds have a particularly high increase at 3.39% annually (p<0.001). Although the overall incidence of advanced cancers is higher in Hispanic and Black populations, there is an increasing number of new cases in White women at 2.39% annually (p<0.001). Compared to other groups, the intersection of White women aged 40–44 in the South have the highest average annual increase at 5.07% (p<0.001).

Conclusions Although the overall incidence of advanced cervical cancers is highest in Hispanic and Black women, there is an increase in incidence in White women particularly in the Southern region of the U.S. More research is needed to understand this trend particularly in relation to screening and treatment of precancerous disease.

EPV044/#201 UNDERSTANDING THE NEVER-SCREENED POPULATION FOR CERVICAL CANCER IN THE UNITED STATES – A DESCRIPTIVE AND TREND ANALYSIS

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10.1136/ijgc-2021-IGCS.112

Objectives It is estimated that 50% of patients diagnosed with cervical cancer never had any screening. We aimed to determine the changes in cervical cancer screening in the United States.
Methods Pap smear rates were evaluated using the Behavioral Risk Factor Surveillance System (BRFSS). SEER*Stat 8.3.8 and Joinpoint regression program 4.8.0.1 were used to calculate incidence trends.
Results In 2016, 6.28% women in the U.S were never screened for cervical cancer. Based on race, 21.3% of Asian, 11.63% Hispanic, 8.09% Black and 5.1% of White women have never undergone screening. The age groups with higher never screened rates were the 80 and older age cohort at 11.14% followed by the 25–29 group at 8.87%. Over the last 6 years of our study, there has been an increase of 7.4% annually of never screened rates ($p=0.008$). In regards to age, there has been an increase in never pap was the 25–29 age group (AAPC +7.31%, $p<0.001$). White and Black women have increasing never pap smear rates at 1.49% ($p=0.008$) and 4.05% ($p<0.001$), respectively, while Hispanic women have no change. The intersectionality of age and race shows that Black women ages 25–29 have the highest increased rate of no screening, 9.84% annually ($p<0.001$).
Conclusions Based on this large survey, nearly one fourth of Asian women were never screened for cervical cancer in the U.S. There is also an increasing proportion of never-screened particularly in younger Black women. Further research is warranted to understand the change in screening practices in relation to vaccination and access to care.

EPV045/#220 DEVELOPMENT OF A CIRCULATING TUMOR HPV ASSAY FOR THE DETECTION OF RECURRENT CERVICAL CANCER

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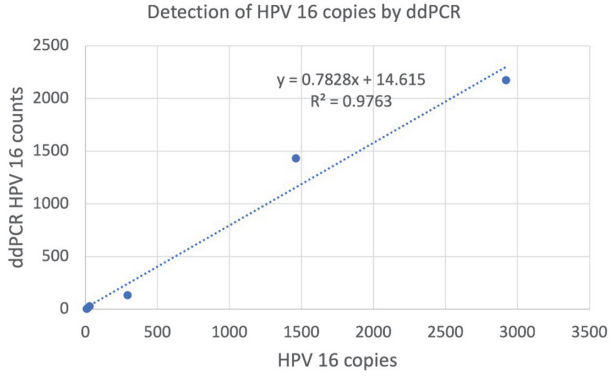
10.1136/ijgc-2021-IGCS.113

Objectives Circulating tumor DNA assays have the potential to facilitate early detection of cancer recurrence as has been demonstrated in breast, bladder, colorectal, and most recently HPV-associated oropharyngeal cancer. We sought to develop a droplet digital PCR (ddPCR) assay for the quantification of circulating tumor HPV DNA in cervical cancer patients.



Abstract EPV045/#220 Figure 1 Detection of HPV 16 copies by ddPCR

Methods Primers were designed to specifically detect an amplicon within the E7 gene encoded by high-risk HPV 16 and 18. Each reaction assay contained 2x ddPCR EvaGreen Supermix (10 µL), respective primers (4 µL), target DNA (1 µL), and DNAase free water (5 µL). Optimal annealing temperature and primer concentration were determined by running temperature and concentration titrations of PBS spiked with target gene fragments of HPV 16. Primers targeting the E7 gene of HPV 16 and 18 were combined into a single assay and HPV DNA quantification performed in control plasma samples.
Results Titration analysis demonstrated good correlation between expected HPV DNA copies and detected copies by ddPCR ($R^2 = 0.9763$). The HPV 16 and 18 assays tested individually and in combination were specific for the HPV strain of interest with no cross-reactivity to the other HPV strain.
Conclusions We developed a highly sensitive and specific ddPCR assay to detect the two dominant high-risk HPV subtypes responsible for to cervical cancer. We plan to perform a prospective pilot study to validate our assay and its clinical utility in detecting minimal residual disease and treatment response.

EPV046/#229 A REVIEW OF CERVICAL CANCER DIAGNOSED IN WOMEN OVER THE AGE OF 65

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10.1136/ijgc-2021-IGCS.114

Objectives To explore the incidence of cervix cancer following cessation of the UK cervical screening programme.
Methods 179 cases of cervical cancer diagnosed between 2016 and 2020 at University Hospitals Sussex were retrospectively reviewed. The screening history, grade, histology and stage of cancer were recorded.
Results Over a five-year period, 80 cases of cervical cancer were identified in the screened population. Of these 59 (74%) were under 65 years and 21 (26%) were over 65 years of age. An initial peak incidence was seen at 30–35 year age range, declining with further screening. Following cessation of screening, a secondary peak at 80–85 years was noted. of those diagnosed during screening (59.3%) were FIGO IA1 to IB2, however, only 9.5% of the over 65s were early stage. Similarly, 32.2% of those within screening age presented with a grade 1 cancer, with only 4.8% over 65 years being low grade. Histology in the under 65s revealed 44.1% were squamous cell carcinoma and 45.8% were HPV-related adenocarcinoma. In the over 65s this was 76.2% and 14.3% respectively.
Conclusions Despite adherence to the screening programme, 25% of cervix cancer was diagnosed beyond screening age, approximately 16 years later. These patients were of more advanced stage and higher grade. This preliminary exploration informs the need for a wider review of cervix cancer after the age of 65 and consideration of extension of the age of screening.