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CA-125 monitoring in gynecologic cancer patients with COVID-19: A case series (413)

Brigid Mumford, MD¹, Brigid Mumford, MD², Lara Lemon, PhD, PharmD³, Sarah Taylor, MD⁴

¹University of Pittsburgh Medical Center, Pittsburgh, PA, United States, ²UPMC Magee-Womens Hospital, Pittsburgh, PA, United States, ³University of Pittsburgh, Pittsburgh, PA, United States, ⁴University of Pittsburgh / Magee-Womens Hospital, Pittsburgh, PA, United States

Objectives: CA-125 has long been utilized as a marker for gynecologic malignancies but can be elevated in many other inflammatory conditions, including lung disease. A retrospective study of tumor markers in non-cancer patients saw a rise in CA-125 values during severe COVID-19 infections. Similarly, a case report published on June 17, 2020, described a significant rise in CA-125 values during an ovarian cancer patient's COVID-19 infection without evidence of disease progression. Given the potential confounding effect this could have on surveillance and treatment planning, we sought to describe the impact of COVID-19 infections on CA-125 trends in a gynecologic oncology patient population.

Methods: We conducted a retrospective chart review of patients treated at a UPMC hospital during the COVID-19 pandemic from March 2020 through July 2021. Patients were included for analysis if they had a confirmed gynecologic malignancy, a COVID-19 infection, and had more than one CA-125 value drawn. The CA-125 values were plotted against the timeline of their COVID-19 infections to assess for trends in CA-125 values during and after infection.

Results: There were 78 individuals identified with a COVID-19 infection and a CA-125 drawn following their positive COVID-19 test. Of these 78 patients, 18 had both gynecologic malignancy and more than one CA-125 drawn. Of these 18 patients, only one had an appreciable rise in their CA-125 values at the time of their COVID-19 diagnosis that resolved following their infection and could not be attributed to disease progression. Four patients were diagnosed with cancer at the time of COVID-19 diagnosis and had elevated CA-125 values. One patient passed before receiving treatment, and the other three had CA-125 values that trended down as they received treatment for their cancer. Two patients were noted to have a mild rise in their CA-125 at the time of their COVID-19 infection that continued to rise as they were diagnosed with the progression of their cancer. Most of the 18 patients ($n=11$, 61.1%) did not show an increase in CA-125 coinciding with their COVID-19 infection. They had either stable or decreasing CA-125 at the time of and following their COVID-19 diagnosis.

Conclusions: This case series illustrates that while CA-125 values may increase during acute COVID-19 infection, cancer remains the most likely cause of a CA-125 increase. Clinical suspicion should remain high for a possible change in cancer status.

Association of distance to gynecologic oncologist and survival in a rural midwestern state (414)

Keely Ulmer, MD¹, Breanna Greteman, PhD candidate, Megan McDonald, MD¹, Mary Charlton, PhD¹, Jesus Gonzalez Bosquet, MD, PhD¹

¹University of Iowa, Iowa City, IA, United States

Objectives: Rural ovarian cancer patients experience worse survival outcomes compared to urban patients. We hypothesized that those living farther from gynecologic oncology would have greater mortality because they may be more likely to seek care locally from less specialized providers. Our objective was to assess whether distance to gynecologic oncology providers affects mortality among ovarian cancer patients living in a largely rural midwestern state.

Methods: Demographic, tumor, and treatment characteristics were extracted from the Iowa Cancer Registry for patients residing in

Iowa diagnosed with malignant primary ovarian cancer from 1990-2018. County-level data from the 2018-19 Area Health Resource File included a number of primary care physicians, surgeons, OB/GYN's, and hospital beds per 10,000 population. Rurality was categorized using 2013 Rural-Urban Continuum Codes for the patient's county of residence at the time of diagnosis. Distance to the nearest gynecologic oncologist was calculated from the centroid of the patient's county of residence to the centroid of the nearest county in Iowa or surrounding states containing a hospital with at least one gynecologic oncologist ($n=7$). Survival was assessed via Cox proportional hazards models.

Results: There were 1,588 patients included, with a mean distance to gynecologic oncology of 45.8 miles and a mean survival of 31 months. Unadjusted models showed those who lived farther from gynecologic oncology had progressively significantly greater risk of death compared to those who lived 0-9 miles: 10-29 (HR: 1.07, 95% CI: 1.03-1.12), 30-49 (HR: 1.15, 95% CI: 1.05-1.25), 50-69 (HR: 1.23, 95% CI: 1.08-1.40), 70+ (HR: 1.32, 95% CI: 1.11-1.57). In multivariate models that included age, marital status, stage, county-level poverty, and rate of surgeons per 10,000 population, the distance was no longer associated with a higher risk of mortality. Stage II (HR: 3.10, 95% CI: 2.13-4.50), stage III (HR: 7.09, 95% CI: 5.40-9.31), stage IV (HR: 11.59, 95% CI: 8.73-15.38) versus stage I, age 60-69 (HR: 1.47, 95% CI: 1.13-1.90), age 70-79 (HR: 2.08, 95% CI: 1.59-2.71), age 80+ (HR: 4.96, 95% CI: 3.76-6.53) versus <50, unmarried versus married (HR: 1.35, 95% CI: 1.09-1.67) were the strongest predictors for risk of death.

Conclusions: Those living farthest from gynecologic oncology care had an increased risk of mortality, but this increase was diminished after controlling for patient/tumor characteristics. Further studies are needed to elucidate reasons contributing to worsened survival for rural women, which could include referral practices of local providers, rates of surgery performed by general OB/GYN's, and other unknown factors.

Hispanic patients treated with radiation therapy for uterine cancer are disproportionately uninsured: An analysis of the National Cancer Database Public Benchmark Reports from 2008-2018 (415)

Vaidehi Mujumdar, MD¹, Rachel Shenker, MD², George Hagopian, MD³, Junzo Chino, MD⁴

¹Icahn School of Medicine at Mount Sinai / New York Health & Hospitals, New York, NY, United States, ²Duke University Hospital, Durham, NC, United States, ³Icahn School of Medicine at Mount Sinai, New York, NY, United States, ⁴Duke University, Durham, NC, United States

Objectives: In 2010, the passage of the Affordable Care Act (ACA) intended to increase access to health insurance coverage in the United States (US). Overall, the ACA decreased uninsured rates for cancer patients receiving radiation therapy (RT). In 2017, a shift in federal policy resulted in the dissolution of the individual mandate, a shortened enrollment period, and reduced funding for the ACA. Given the 2017 ACA changes and racial disparities in the incidence, treatment, and survival rate of individuals with uterine cancer, we sought to determine the trends in the rates of individuals with uterine cancer receiving RT by insurance status and race from 2008-2018.

Methods: We obtained data from the National Cancer Database Public Benchmark Reports from 2008-2018. We calculated the percentages of uninsured patients who had received any RT for uterine cancer. We then identified trends of this group by race, including White, Black, Hispanic, Asian/Pacific Islander, Native American, and unknown. A Chi-square test of independence was performed to examine the relation between the rate of uninsured patients. A second analysis was performed examining two years prior to (2015-2016) and two years after (2017-2018) a new federal administration was instated.