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"Does Mismatch Repair Deficiency have similar prognostic value for Black endometrial Cancer Patients Compared to non-Black Counterparts from the Deep South?"

Introduction: Endometrial cancer (EC) disproportionately affects Black women, but we do not yet know if mismatch repair deficiency (MMRd) has an equal prognostic value in the Black EC population as their White counterparts, due to poor representation of Black patients in scientific studies. We sought to describe the impact of MMRd in a large and racially diverse Southern EC population.

Methods: A retrospective cohort study of all EC patients with reported MMR testing receiving care within a large urban healthcare system of both academic and community hospitals was performed from 2018-2022. Chart review was conducted to extract patient demographic, clinicopathologic, molecular, and survival data. Clinicopathologic variables were compared using Wilcoxon rank sum tests for continuous variables and Fisher exact tests for categorical variables. Kaplan-Meier survival estimates were constructed, and a log rank test was performed to determine if recurrence free survival differed by racial group.

Results: N=127 patients were included. Of those, n=55, (43.7%) identified as Black, n=60 (47.6%) as White and the remainder n=12, (8.7%), as Other or unknown. A total of n=25, (20%), patients had MMRd, 11 (44%) being of Black race and 14 (56%) of White race, p=0.379. From our population, n=7 (5.6%) reported Hispanic ethnicity and n=119 (94.4%) were of non-Hispanic ethnicity or unknown. No Hispanic patients had MMRd while 21% of non-Hispanic patients had MMRd, p=0.34. Patients with MMRd tended to be younger than those with MMR proficient (MMRp), mean age 59 vs 61 years respectively, p=0.212. Time to recurrence was longer for MMRd patients compared to MMRp patients, 22.7 months vs 9.6 months, p=0.352. Recurrence Free Survival (RFS) between Black and White patients was not significantly different, but Black patients tended to have a higher probability of recurrence at 1 and 2 years when compared to non-Black pts 21% vs 10% and 38% vs 24%, respectively, p=0.1. In the 25 patients that had MMRd, 11 were African American, of which 1 patient died without experiencing a recurrence and 2 patients had a recurrence and died, whereas no non-Black patients with MMRd experienced recurrence or death.

Discussion: Based on our study of an ethnically and racially diverse EC population, race was not associated with incidence of MMRd. We observed a trend that EC patients with MMRd tended to be younger. In our MMRd cohort we discovered a trend that MMRd patients had a longer time to recurrence than MMRp patients. This could help us in gaining a better understanding of MMRd and its implications can aid physicians in counseling patients on their prognosis and recurrence risk. However, these findings might not follow in terms of race, as all recurrences and deaths in this study were found in the Black MMRd EC cohort. Due to low numbers of MMRd patients, we were not able to conclude on the differing prognostic recurrence free survival by race. These trends, however, do confirm the importance of inclusion and representation of highly burdened populations to better understand the potentially varying prognostic features of MMRd across race and ethnicity.