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

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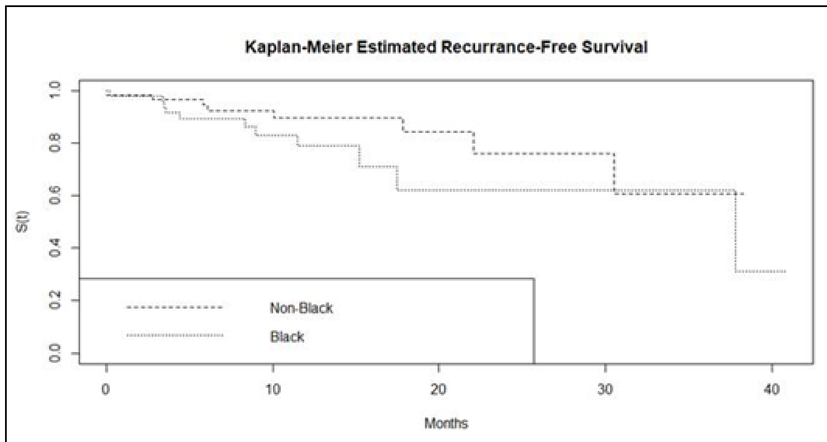
Introduction

Mismatch repair (MMR) is a DNA repair pathway implicated in many solid tumors including endometrial cancer (EC). It is currently standard of care to test for mismatch repair deficiencies (MMRd) on endometrial cancer pathology after staging hysterectomy. It is well shown that EC disproportionately affects Black women, but we do not yet know if these same findings of MMRd have an equal prognostic value in the Black EC population as has been shown in their White counterparts, as most studies include small subsets of Black patients. Thus, we sought to describe the impact of MMRd in a large and racially diverse Southern EC population and to identify whether differences in recurrence free and overall survival based on race as well as type of MMR deficiency was found.

Methods

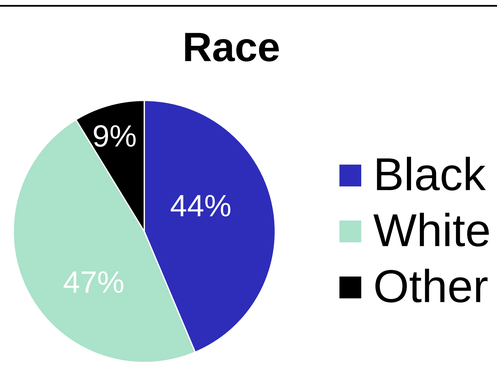
A retrospective cohort of EC patients receiving care within a large urban healthcare system encompassing both academic and community hospitals was performed. Electronic medical records were reviewed, and data collected via RedCap. Variables of interest included basic patient demographic, clinicopathologic as well as molecular testing. Specifically, EC stage, histology, MMR testing, and genetic testing were compared to patient geographic, demographic, treatment, and outcome data.

Black vs. White Patients RFS



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 patients 21% vs 10% and 38% vs 24%, respectively, p=0.1.

Demographics



Based on our study of an ethnically and racially diverse EC population, race was not associated with incidence of MMRd.

Results Part 1

	MMRd Cohort n=	MMRp Cohort n=	P-value
Time to Recurrence	22.7 months	9.6 months	p=0.352
Mean Age	59 years old	61 years old	p=0.212

Results Part 2

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. 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. For all patients, 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 patients 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.

Conclusions

These findings highlight the need to better characterize the differential impact that race contributes on MMR status and its implications related to survival. This will aid oncologist in counseling on treatment, prognosis and recurrence risk as we already know Black race is a negative risk factor in EC outcomes. Furthermore, in this cohort, all recurrences and deaths in patients with MMRd were found in the Black patients. However, due to low numbers of MMRd patients overall, 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.

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