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"Disparities in hypermethylation testing for MLH1-deficient endometrial cancer."

Background: Hypermethylation testing for patients with MLH1 deficient endometrial cancer is a key component for evaluation of whether a mismatch repair deficiency is heritable or somatic. Inconsistent application of this testing can impact identification of Lynch syndrome in endometrial cancer patients. For patients with Lynch syndrome, endometrial cancer is often the first diagnosed cancer of multiple malignancies, and these patients have an increased risk for colorectal and ovarian cancers. Timely hypermethylation testing and subsequent receipt of indicated germline testing for MLH1 deficient patients with Lynch syndrome can improve cancer surveillance and allows early intervention for at-risk family members.

Objective: The purpose of the study is to identify specific risk factors contributing to disparities in receiving appropriate and timely hypermethylation testing in MLH1 deficient endometrial cancer.

Methods: A retrospective cohort study was conducted for patients identified through a GYN cancer database. Patients with an endometrial cancer diagnosis were included in the study. Patient demographics, cancer information, and outcomes were collected in REDCap. Hypermethylation testing completed for all patients with MLH1 protein loss on IHC within 40 days of the biopsy/surgery was considered adequate. A second group containing patients with tests reported in 40 or more days was also formed. Race, age, and cancer stage were compared between patients with timely versus delayed hypermethylation testing to identify potential risk factors for delays. Groups were analyzed using a Chi-square test.

Results: A total of 25 endometrial cancer patients were included. Overall, 21 patients with completed hypermethylation testing were analyzed. Of the 21 patients, 61% received test results back in less than 40 days and 38% received the result back in 40 or more days. White patients were more likely to have a timely report than non-White patients ($p = 0.02$). Analysis of patients younger than 65 compared with patients 65 or older revealed no significant findings. Comparison between early (1 & 2) and late (3 & 4) stage did reveal any significant differences.

Conclusion: This study analyzed disparities in timely hypermethylation testing among population subgroups. A disparity was identified in adequate testing for non-White women diagnosed with endometrial cancer. Faster result turnaround can aid in physician decisions and affect the plan of care. Although limited by a small sample size, these findings highlight the need for quicker and more equitable hypermethylation testing.