GENETIC TESTING FOLLOWING ABNORMAL IMMUNOHISTOCHEMISTRY RESULTS IN ENDOMETRIAL CANCER: A QUALITY IMPROVEMENT PROTOCOL

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Objective: Universal mismatch repair (MMR) immunohistochemistry (IHC) in endometrial cancer began at our institution in July 2015. In April 2017, genetic counselors (GC) obtained IHC data and contacted physicians to approve genetic counseling for Lynch Syndrome (LS) in eligible patients. We assessed if this protocol increased frequency of genetic counseling referrals (GCRs) and genetic testing (GT) in patients with abnormal MMR IHC.

Methods: We retrospectively (7/2015-6/2021) identified patients with abnormal MMR IHC at a large urban hospital. GCR and GT rates were compared between cases from 7/2015-4/2017 (pre-protocol) and 5/2017-6/2021 (post-protocol) with Fisher’s exact test.

Results: Of 717 patients with IHC testing, 156 (21.8%) had abnormal MMR results: MLH1/PMS2, 123; MSH2/MSH6, 10; MSH2/PMS2, 1; MSH6, 13; MLH1, 2; PMS2, 7. MLH1 hypermethylation was identified in 114 (73.1%) patients; 42 (26.9%) patients met criteria for LS screening with GT based on IHC results. Of 42 patients, 16 (38.1%) were identified before and 26 (61.9%) after protocol initiation. GCRs significantly increased from 11/16 (68.8%) to 25/26 (96.2%) in the pre-protocol versus post-protocol groups, p=0.02. There was no statistically significant difference in GT frequency between groups (10/16, 62.5% vs 23/26, 88.5%, p=0.06). Of 33 patients undergoing GT, 16 (48.5%) had LS: MSH6, 9; MSH2, 4; PMS2, 2; MLH1, 1.

Conclusions: Increased frequency of GCRs was observed following the protocol change, which is important as LS screening has clinical implications for patients and their families. Reflex protocols can maximize identification of patients for germline GT; alternatively universal GT can be considered in endometrial cancer (Levine et al. 2021).

INTEGRATED PROFILING OF A PROSPECTIVE ENDOMETRIAL CANCER ORGANOID BIOBANK REVEALS HIGH HETEROGENEITY

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Objective: Patient-derived cancer organoids have quickly developed as valuable tools for drug testing as they better represent the genetic background of the patient cohort. We recently...