

Clinicopathological Predictive Score for DNA Mismatch Repair Deficient Colorectal Carcinoma in Sri Lanka

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DNA mismatch repair deficient (dMMR) colorectal carcinoma (CRC) occurs in Lynch syndrome and around 15% of sporadic CRCs. Detection of these patients' aids prognostication, management and familial screening. While universal testing is now mandatory in many developed countries, resource limitations hinder it in Sri Lanka. This study investigated the prevalence of dMMR CRC in Sri Lanka and introduced a predictive score for CRC patients in our population. A cross-sectional analytical study was conducted on CRC patients from four tertiary care centres for two and half years. Haematoxylin and eosin-stained slides of colectomy specimens were assessed for histopathological features. Immunohistochemistry was performed for the four DNA mismatch repair proteins MLH1, MSH2, PMS2, and MSH6. Multivariate binomial logistic regression determined predictive variables. Of 185 patients, 104 (56.2%) were women. Mean age was 62.5 years (SD:11.8; range: 19-84). The prevalence of dMMR was 11.89% (n = 22). Multivariate analysis showed significant association with age < 60 years (p = 0.001), right sided tumour (p=0.001), family history of CRC (at least one 1st/2nd degree relative) (p=0.029), mucin percentage \geq 20% (p = 0.045), solid region percentage \geq 15% (p = 0.021), highest iTILs \geq 3/HPF (p = 0.001), and Crohn-like peritumoral inflammation (p = 0.005). The cutoff value for the prediction of dMMR status was taken as \geq 6 from a maximum value of 20 (sensitivity: 0.955, specificity: 0.682). This study suggests screening all CRC patients with the proposed predictive score to cost-effectively guide dMMR testing.

Keywords: Microsatellite instability, colorectal cancer, predictive score

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