Role of Mismatch repair protein expression in Colorectal Cancer: a study from North India

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Abstract

Purpose: To study the Mismatch repair (MMR) Protein expression and its clinicopathological correlation in colorectal cancer patients in north India.

Methods: A prospective study was conducted on histologically proven 52 (38 males and 14 females) patients of adenocarcinoma of colorectum. MMR Protein loss was determined by using Immunohistochemistry for MLH1, MSH2, PMS2 and MSH6.

Results: 52 patients (38 males and 14 females) underwent resection for colorectal cancer with the median age of 52 year (16-81 years). 35% of the patients (n=18) were younger than 50 years of the age. 3 patients had associated history of malignancy in the family. 29 (56%) patients had right colon cancer, 9 (17%) left colon cancer and 14 (27%) rectal cancer. 2 patients each had synchronous and metachronous cancer. Histology revealed well differentiated tumour in 16, moderately differentiated in 10 and poorly differentiated tumour in 26 patients. MMR protein loss was seen in 15(29%) patients. Seven (46%) of these patients were less than 50 years of age. Combined loss of MSH2 and MSH6 was seen most commonly and it was found in 6 patients. 12(80%) patients with MMR protein loss had tumour located proximal to the splenic flexure compared to 3(20%) located distal to the splenic flexure. There were no difference in MMR protein loss based on patients age, gender, degree of tumour differentiation, stage of the disease and tumour histological characteristics.

Conclusions: This study revealed that there was less than 30% MMR protein loss in colorectal cancer patients. The loss was most commonly seen in right sided colon cancer than left. A larger study is further required to validate these findings.