Role of Mismatch repair protein in Colorectal Cancer Progression: A Study of North Indian population.

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Colorectal cancer (CRC) involves malignant neoplasm of colon and rectum. It is second and third most commonly diagnosed cancer among women and men worldwide respectively and the fourth leading cause of cancer-related deaths; estimate of approx 1,400,000 new cases and about 700,000 deaths worldwide. In this study we looked for MMR Protein expression (MLH1, MSH2, PMS2 and MSH6) by immunohistochemistry in CRC patients and its clinicopathological correlation. A prospective study was conducted on histologically proven CRC patients in a tertiary care hospital.

52 patients (38 males and 14 females) underwent resection for CRC with the median age of 52 years(16-81 years).18 patients 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 cancers and 14 (27%) rectal 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 <50 years of age. Combined loss of MSH2 and MSH6 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 was no difference in MMR protein loss based on patient's age, gender, degree of differentiation, stage and tumour histological characteristics.

This study revealed that there was less than 30% MMR protein loss in CRC patients in north Indian population. The loss was most commonly seen in right sided colon cancer than left.