

Role of Microsatellite Instability in Colorectal Cancer Treatment [†]

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Abstract: Colorectal cancer is a major health problem because of its high incidence, morbidity, and mortality. In the last years, discussions have been held about personalized medicine in oncology and the need for new treatments in metastatic colorectal cancer. Also, in stage II AJCC colon cancer, many debates regarding the role of chemotherapy treatment led to numerous studies. An important step was taken 30 years ago when DNA deficient mismatch repair (MMR) system was first discovered. Now, we know that this deficiency leads to DNA microsatellite instability (MSI tumors). Colon cancer can be divided into MSI and MSS tumors. Up to 15% of colon cancer display microsatellite instability. The percentage of microsatellite instability is higher in early-stage colon cancer than in metastatic colon cancer. MSI and MSS tumors have different clinical characteristics, recommendations, and prognostics. Data from clinical studies demonstrated that MSI status is a prognostic marker and is useful in the treatment decision. Although in stage II colon cancers, MSI status seems to determine a favorable prognostic in the absence of chemotherapy treatment, in stage IV colon cancer, it seems to confer a negative one. Clinical trials from recent years demonstrated the role of immunotherapy in stage IV colon cancer in the hope of a better prognosis for these patients.

Keywords: microsatellite instability; colorectal cancer; chemotherapy; immunotherapy.

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Conflicts of Interest

The authors declare no conflict of interest.