Pembrolizumab, the future of therapy for mismatch repair deficient metastatic colorectal adenocarcinoma: A case report

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Pembrolizumab, an anti-programmed death 1 (PD-1) inhibitor is now the focus of cancer research for its favorable clinical response to microsatellite instability (MSI)-high metastatic colorectal cancer. The phase-2 trial by Le, et al. showed that on MSI-High colorectal tumors 40% had objective response (partial or complete response) and 78% showed progression free survival rate after administration of Pembrolizumab. A case description of a 37-year-old male was diagnosed with colon adenocarcinoma with synchronous liver metastasis. He subsequently underwent right hemicolectomy with left hepatectomy. Initial chemotherapy of Cetuximab plus 5-FU, Folic Acid and Oxaliplatin was given which showed complete response on PET CT scan. After three months, surveillance MRI and PET CT Scan showed new hypermetabolic lesions at segments IV and V of the liver. Hepatic metastectomy was done and tumors were analyzed for mismatch repair mutation which revealed MSI-High. Patient underwent subsequent chemotherapy of Irinotecan and 5-FU which showed no tumor recurrence on surveillance MRI. Whole body PET CT Scan done after 6 months showed hypermetabolic lymphadenopathies at right supraclavicular, right cardiophrenic and right paracardiac areas with hypermetabolic liver disease at segments V and VIII, hence, 200 mg of Pembrolizumab was introduced. After Pembrolizumab infusion, surveillance whole body PET CT Scan revealed a remarkable metabolic resolution of the previous lymphadenopathies and liver disease at segments V and VIII. Currently, the patient is still on Pembrolizumab every 21 days and no tumor recurrence was noted on surveillance PET CT Scan. Although not the primary therapy for colorectal cancer, Pembrolizumab showed good response with MSI-High colorectal tumors. Testing of colorectal tumors for MSI may be necessary upon diagnosis, which may predict good response to Pembrolizumab. Early introduction of Pembrolizumab to advanced colorectal tumors should be considered.

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