Tight monitoring of ctDNA in patient undergoing multimodal treatment of metastatic colorectal cancer

Belšánová B.[1], Kroupová P.[1], Chmelářová A.[1], Pudil J.[2], Havlíčková I.[3], Pohnan R.[2], Minárik M.[1]

[1]Elphogene, s.r.o., Prague
[2]Department of Surgery, 2nd Faculty of Medicine, Charles University and Military University Hospital, Prague
[3]Department of Clinical and Radiation Oncology, Hospital Havlickuv Brod

Background: We here present a case study of a patient treated for advanced colorectal cancer who is undergoing a multimodal treatment of liver metastases. We have applied longitudinal liquid biopsy testing thoughout the course of therapy by oncoMonitor® ctDNA assayfor monitoring of the treatment outcome and early detection of a possible disease progression.

Methods: A 54 year old female colorectal cancer patient has been monitored over the course of the past 24 months. The patient was diagnosed with multiple metastatic sites in the liver at the time of the enrollent. The ctDNA is tracked based on *KRAS*A146T mutation found in the primary tumor tissue as reported by the cooperating oncology department. During the montoring a separate profiling of the ctDNA was performed by plasma NGS test.

Results: Following the initial 12-month period of recorded gradual regression of the liver tumor mass (confirmed by imaging) the patient was elected for resection of remaining liver metastases based on the clearance of ctDNA from plasma. The initially complete eradication of ctDA was followed by its reemergence within 3 months after the surgery. This was in correlation with the R1 resection radicality. Sobsequently patient received adjuvant therapy after which the ctDNA has, again, been significantly reduced. Currently the patient is in stable disease with minimum to none activity of the remaining metastatic lesion. In a separate effort, we have confirmed a mutation-stable profile by closely related dynamics of additional 3 somatic mutations found by NGS testing of ctDNA-positive plasma samples.

Conclusion: The presented case demonstrates clinical utility of longitudinal liquid biopsy ctDNA testing with frequent plasma sampling, which we refer to as “tight monitoring”. We see its main application for patients undergoing multimodal treatment where decisions can be made based on knowledge of therapy response and an exclusion of residual disease.

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