

## Predicting outcome of oligometastatic colorectal cancer patients receiving local therapy for liver metastases

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**Introduction:** Local therapy of liver metastases from colorectal cancer (CRC) in limited metastatic disease significantly improves survival and is considered a curative approach. Oligometastatic disease is an emerging concept describing the transitional state between localized and widespread systemic disease. To better understand the clinical course of oligometastatic patients and predict, which patients could benefit from local ablative therapy, clinical tools such as prognostic scores are warranted.

**Methods:** Here, we present outcome results of a retrospective analysis of 111 consecutive CRC patients who received local ablative therapy of liver metastases at our center between 2007 and 2016 and applied a prognostic score, which stratifies according to inflammatory response to tumor (IRT) before liver surgery.

**Results:** Median age was 65 years (range (r): 28-89), median number of metastases was 2 (r: 1-7) and median follow-up from intervention to time of death/last contact was 21 months (r: 0-126). 93 (83.8%) patients were treated with liver resection; 8 (7.2%) patients received combined therapy with resection and thermal ablation; stereotactic body radiotherapy was used in 8 (7.2%) patients and 2 (1.8%) patients were treated with thermal ablation. Patients were stratified according to their preoperative IRT status: 25 (22.5%) patients were IRT positive (c-reactive protein (CRP) levels > 1.0 mg/dl), 86 (77.5%) patients were IRT negative (CRP levels ≤ 1.0 mg/dl). Median overall survival from time of local therapy was 20 months (r: 13,9-26 months) for IRT positive patients as compared to 71 months (r: 48,5-93,4) for IRT negative patients (p < 0,0001; hazard ratio (HR) 4,5; 95% CI 2,1-9,5). IRT status was not significantly associated with disease free survival (DFS) with median DFS of 9 months (r: 6,4-17,5) for IRT positive patients and 12 months (r: 0-18,2) for IRT negative patients (p =0,133; HR: 2,1; 95% CI 0,8-5,3).

**Conclusion:** Beyond validating previous reports of IRT as a strong negative prognostic factor we hypothesize that disease biology including genetic aberrations has a major impact on the clinical course and metastasis behavior. Therefore, in current analyses and in addition to phenotypical factors, we investigate molecular settings that may be associated with oligometastatic disease. Ultimately, we aim at developing an improved composite prognostic score to identify those patients who especially benefit from local therapy in oligometastatic CRC.

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