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**CHANGES IN VEGF-A-SERUM LEVELS AFTER CHEMOEMBOLIZATION WITH IRINOTECAN LOADED DRUG-ELUTING BEADS (DEBIRI) IN PATIENTS WITH CHEMOREFRACOTORY LIVER METASTASES OF COLORECTAL CANCER. FINAL RESULTS OF 37 PATIENTS**

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**Aim:** TACE with irinotecan loaded drug-eluting beads has shown activity in colorectal liver metastases. A neoangiogenic reaction due to ischemia may be among the factors interfering with its effectiveness. In this study we evaluated the changes in VEGF-A serum level as a potential surrogate for this neoangiogenic reaction in patients treated with TACE.

**Methods:** Patients with predominant and life threatening liver metastases from CRC which were refractory to all drugs approved for metastasized CRC and documented tumor progression during or shortly after the last chemotherapy, were prospectively treated with DEBIRI with a size of 100-300 µm. Therapy was applied by a temporary catheter placed in the liver arteries. Usually each lobe of the liver was treated two times with an interval of 4 weeks. Each treatment of one liver lobe was performed with 1 vial of the DC-Beads loaded with 100 mg irinotecan. Blood samples to measure the VEGF-A-serum levels were taken before TACE and at days 8, 15 and 22 after first treatment.

**Results:** Complete blood samples to evaluate the VEGF-A-level were taken from 37 patients (24 m/13 f; median age 64 y) from 2/11 to 5/13. 51% of patients had an increase of the VEGF-A-level compared to baseline of median 75 % after 21 days, whereas 49% of patients had a decrease of the VEGF-A-Level of median 34% after 21 days, respectively. The changes of the VEGF-A-level at day 8 were predictive for the following course of the levels. Baseline levels were significantly higher in patients pretreated with Bevacizumab within the last 9 weeks prior to first DEBIRI (p < 0.0001). A decrease or only slight increase of the VEGF-A-level at day 8 was found in these patients, compared to those with a more prolonged interval or to Bevacizumab-naïve patients (p < 0.0001).

**Conclusions:** These findings show different behavior of the serum VEGF-A-levels after DEBIRI-TACE, suggesting that the occlusion of blood vessels and subsequent ischemia induces neo-angiogenesis due to VEGF-A in a subset of 51% of these patients. VEGF-A-level decrease in patients with a Bevacizumab therapy within the last 9 weeks prior to first TACE may be due to a neoangiogenesis-pathway other than VEGF-mediated. These results could implicate that drugs targeting the VEGF-pathway might be effective as an additive therapy to chemoembolization in a subset of patients e.g. those with a low baseline VEGF-A-level.

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