

TransArterial ChemoEmbolization (TACE) of Neuroendocrine Hepatic Metastases Using Drug-Eluting Beads

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Purpose:

To examine the feasibility, tolerance and efficacy of drug-eluting beads for TACE in patients suffering from neuroendocrine hepatic metastases.

Materials and methods:

Ten patients underwent 15 courses of TACE with 2 to 4 ml of beads (GelSphere®) loaded with 50 to 100 mg of doxorubicin. Clinical and symptomatic tolerance were clinically assessed. Biological tolerance was assessed with blood samples. Morphologic response was evaluated with CT. CT perfusion studies obtained before and after TACE were evaluated for blood flow (BF) and mean transit time (MTT) with a commercially available tool (Advantage Windows 4.2_3; General Electric Medical Systems, Milwaukee, WI).

Results:

Minor post-embolization symptoms were found in 9 of 10 patients. There was a mild increase of transamines (mean SGOT/SGPT increased respectively from 24/27 IU/l before treatment, to 91/62 IU/l on day one and to 74/111 IU/l on day five after treatment). Mean total bilirubin was respectively 12, 16.7, and 15 mmol/l before, one day and five days after treatment. Within one month of TACE, all three patients with neuroendocrine-related symptoms experienced a decrease of symptoms, and a decrease of tumor markers was noted in four of five patients with elevated tumor markers before TACE. Eight of ten patients' treated lesions showed a significant ($p < 0.05$) elongation of the MTT from 3.2s before treatment to 5.7s 30 days after treatment, and a decrease of the mean BF from 476 ml/100g/min before treatment to 285 ml/100g/min 30 days after treatment. These changes in tumor perfusion were already detected four days after treatment and persisted for at least two months in the five of ten patients who further demonstrated a morphologic response to TACE. Differences in perfusion values were also demonstrated between treated and non-treated liver segments.

Conclusion:

In this preliminary study, TACE with doxorubicin eluting beads is well tolerated and seems to be efficient. Perfusion CT seems promising in detecting early changes in tumor vascularisation whereas mere morphological/RECIST criteria may fail to detect early treatment effects.