

## Which is the Role of Locoregional Interventional Procedures for Secondary Hepatic Malignancies?

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In the last decade remarkable advances in cancer care has created new challenges leading the clinical practice towards a personalized medicine. Metastatic tumors to the liver continue to be an important health problem, representing the most common malignant tumor of the liver. Furthermore, liver is also frequently the sole organ harbouring metastases. Therapy directed at the liver to control or eliminate the predominant or exclusive site of disease should theoretically translate into improved survival. Due to the high incidence most of the available data relate to metastases arising from colorectal primaries and the results obtained with resection of colorectal hepatic metastases provide the most compelling evidence in support of this paradigm.

It is well known that surgical resection is the only potential curative treatment for metastatic cancer to the liver, but only a minority of patients with liver metastases will be suitable for complete resection at the time of diagnosis because of tumor size, location, multifocality, or inadequate hepatic reserve.

Based on this background, there are several nonsurgical treatment options for patients with liver-isolated metastases who are not candidates for potentially curative resection [1-3]. These include locoregional tumor ablation (hyperthermic or radiofrequency coagulation) or regional chemotherapy via the hepatic artery, or selective internal radiation using yttrium-labeled glass or resin microspheres.

Intra-arterial locoregional treatments, represented by chemoembolization or radioembolization, may be considered after the cancer has progressed on systemic therapies but remains isolated to the liver or as a means of delaying the need for systemic chemotherapy in patients who have liver-isolated metastatic disease. Whether this rationale is valid or not is unclear. Moreover, it is

unclear whether the sequential use of regional treatments followed by systemic chemotherapy at the time of progression provides better long-term benefit in terms of duration of symptom control or survival than systemic chemotherapy alone. All these new options represent an emerging and promising treatment against liver secondary tumors.

In the last years, treatment indications have been refined, and several studies have evaluated a multimodal approach to increasing the effectiveness of single treatments for different metastatic liver lesions. The available data suggest that multimodality based on multidisciplinary selection could be able to increase treatment efficacy, preventing the incomplete necrosis as well as partial response, and improving patient survival, without increasing treatment complications.

Finally, there is a growing interest in combining immunotherapy with locoregional strategies, but little data is available to guide if and how these modalities should be combined. What is clear is that percutaneous as well as intra-arterial options cannot be considered solely as a locoregional therapy. The resultant inflammatory response, though at present limited and unpredictable, paves the way for an expanded role of these procedures as a stimulant to the immune system, with a potential oncogenic effect that could enhance systemic treatment response with a high tumor burden. The prospect of manipulating the immune system toward the rejection of established cancers as part of the standard of care of patients is becoming closer to reality, even if more data are still needed to further verify its efficacy. All these technical and procedural aspects are annually discussed in the edition of MIOLive, Mediterranean Interventional Oncology Live Symposium, held in Rome at the end of January, an interactive meeting for all those who are interested in

interventional oncology as well as loco-regional treatments. This meeting represents the best place for obtaining networking opportunities, listening to experts, and learning and sharing best practices, focused on multidisciplinary and multimodality.

In conclusion, interventional oncology has the potential to improve the treatment results in localized solid cancers or in selected oligometastatic diseases with institutional economical advantages. A large workload Interventional Oncology Centre could play an important role in the patient service, in the education as well as in the clinical research.

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