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## **Isolated Limb Perfusion – Experience at the West German Cancer Center**

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### **Background:**

Isolated limb perfusion (ILP) is based on the local application of recombinant TNF- $\alpha$  and melphalan (TM-ILP) and reported to represent one of the most effective local treatment modalities for soft tissue sarcoma (STS) of the limbs. On various papers TM-ILP has been reported to result in excellent local response rates, ranging from 45% up to more than 80% for partial and complete remissions. Hence limb salvage has become more than a realistic purpose even in those patients whose limbs were at risk by advanced and non resectable soft tissue sarcoma.

### **Methods:**

This paper reports on TM-ILP at a tertiary cancer center reflecting more than ten years and roughly 300 procedures performed for soft tissue sarcoma. Beside the enormous response rates and limb salvage rates which are in line to the reports of other centers, the following aspects are highlighted.

### **Results:**

Assessment of clinical response using size based WHO-criteria as well as RECIST has been shown to be insufficient as none of those criteria were able to reliably identify the extent of regression after TM-ILP. Subtypes of STS do only differ little regarding the characteristics of regression with fibrosis/sclerosis being the most upon histopathology. Interestingly, when evaluating micro-vessel density (MVD), vascularisation of STS did not significantly impact on regression despite of the fact that TNF- $\alpha$  does target tumor's blood supply. Undoubtedly, TM-ILP does improve the integrity of the tumor surrounding capsule as well as the width of surrounding fibrous tissue. That explains why such a high rate of regression and local control could be achieved even in marginally resected STS which were judged as non resectable prior to TM-ILP.

### **Conclusion:**

Based on this experience, it has become clear that TM-ILP should be provided for those patients where limb salvage or preservation of limb function cannot be achieved by surgery and radiotherapy alone. More precisely, TM-ILP should be an integral part of treatment modalities in all tertiary cancer centers. The histopathologic reflection of subgroups intends to extend the indication on all those patients with advanced STS where pretreatment might reduce the extent of loss of function by effectively sparing soft-tissues and neurovascular structures.

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