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The value of isolated limb perfusion in the treatment of differently graded liposarcomas

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Background: Isolated limb perfusion with TNF-alpha and Melphalan has proven to be a valuable tool in the treatment of locally advanced soft tissue sarcoma. Limb salvage rates for soft tissue sarcoma range above 80% in the current literature. Liposarcomas make up for almost 20% of all STS. In recent times the understanding of the different sub entities of liposarcomas has improved greatly. This retrospective study was conducted to clarify how the different sub entities of liposarcoma respond to isolated limb perfusion.

Methods: In our ILP-database we identified 125 cases of patients with soft tissue sarcoma who received subsequent resection after ILP to allow for an analysis of histopathologic regression of the tumor. We reviewed the histopathologic results from resection specimen, addressing the question of grade of regression of the tumor and resection margins.

Results: Out of the total of 125 patients 23 (18%) suffered from liposarcomas. There were two cases of high differentiated liposarcoma (9%), 5 cases of myxoid liposarcoma (22%), another 5 cases suffered from dedifferentiated liposarcoma (22%), there were 10 cases of myxoid round cell liposarcoma (43.5%) and 1 case (4.3%) of pleomorphic liposarcoma.

In the liposarcoma collective the mean regression of the tumor after ILP was 73.7% (median: 89.0%; std. deviation: 32.1). The analysis of all other sarcomas revealed a mean regression of 77% (median: 94.6%, std. deviation: 31.8). Analysis of cross tables revealed a positive response (less than 10% of vital tumor) in 52% of liposarcomas compared to 60% positive response for all other sarcomas.

Analysis of sub groups from the liposarcomas revealed that myxoid round cell liposarcoma responded best with 70% (7 responders vs. 3 non-responders), myxoid liposarcoma responded in 60% (3 responders vs. 2 non-responders). Interestingly, dedifferentiated liposarcoma responded in only 40% (2 responders vs. 3 non-responders). The two cases of high-differentiated liposarcoma did not respond to ILP (0 responders).

Conclusion:

It appears that myxoid round cell liposarcoma and myxoid liposarcoma do respond better to isolated limb perfusion than dedifferentiated liposarcoma or pleomorphic liposarcoma. Well differentiated liposarcoma is less responsive to ILP which could be explained by its low vascularity.

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