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Isolated limb perfusion for locally advanced soft tissue sarcoma

J. Mattsson¹, R. Olofsson², P. Bergh¹, Ö. Berlin¹, K. Engström¹, B. Gunterberg¹, M. Hansson¹, P. Lindnér¹

¹ Sahlgrenska University Hospital ² Department of Surgery, Sweden

BACKGROUND: Isolated limb perfusion with Tumor Necrosis Factor alpha and Melphalan (TM-ILP) has proven to be a successful option in treating advanced soft tissue sarcomas (STS), where amputation otherwise is needed to achieve safe surgical margins.

METHODS: From 2000 to 2009, 54 patients with locally advanced STS, who all were candidates for amputation, were treated with totally 57 TM-ILP procedures and then followed prospectively. The median follow-up time was 30 months. Median tumor size was 10 cm, and 94% of the patients had high-grade tumors. TNF-alpha was administered in a dose of 3 mg in upper limbs and 4 mg in lower limbs, provided limb tissue temperature had reached 38°C. After 30 min, Melphalan (13 mg/L in upper limbs, 10 mg/L in lower limbs) was administered and the temperature increased to 40°C with a perfusion time of 90 min in total.

RESULTS: The clinical overall response after TM-ILP was 71% (including 21% CR), and 60% of the patients underwent resection of the tumor remnant after a median of 2 months. The histopathologic response rate in the resected specimens was 76%. Local recurrence/progress occurred in 37% of the patients after a median of 7 months. Thirteen patients finally underwent amputation after a median of 11 months, giving a long-term limb salvage of 76%.

CONCLUSIONS: TM-ILP of advanced soft tissue sarcoma of the extremities makes limb-sparing surgery possible in a high proportion of patients.