Neven JOKIĆ
Ivan MARKOVIĆ
Ivan ĐURIŠIĆ
Marko BUTA
Stevan JOKIĆ
Zoran KOZOMARA

INSTITUTE FOR ONCOLOGY AND RADIOLOGY SERBIA, BELGRADE, SERBIA

Isolated perfusion of extremity in the treatment of soft tissue sarcoma

KEYWORDS: Soft Tissue Neoplasms; Sarcoma; Chemotherapy, Cancer, Regional Perfusion; Extremities

Background: Isolated perfusion of extremity was first introduced by Creetch and Krementz in 1958 at the Tulane University in New Orleans as a method of treatment of advanced staged of soft tissue sarcomas. The initial idea was to increase the concentration of cytotoxic agents in the extremity without increasing its concentration in the systemic circulation. This procedure allows application of 15-20 times higher doses of the cytotoxic agent in the extremity affected by the soft tissue sarcoma then applied in the systemic circulation.
Patients and methods: The patients who were candidates for isolated extremity perfusion (IEP) are the ones who have large non resectable tumors and who were planned for amputation of affected extremity. Contraindications include tumors localized close to the femoro-pelvic joint and humoro-scapulars joint due to the possible leakage of the cytotoxic agent in the systemic circulation, deep venous thrombosis, atherosclerosis, absence of distal pulse. IEP could be performed at four levels in the upper extremities (iliac artery, femoral artery, femoro-popliteal artery and popliteal artery) and at two levels in the lower extremities (axillary and cubital blood vessels). Procedure is performed in general anesthesia. We apply arterial and venous catheters at the selected level and then we move it in the close proximity of tumor. Then we connect the catheters to the machine for extracorporal circulation. We monitor the temperature of the extremity at all times. The best results were observed by using Melphalan in combination TNF alpha. The extremity on IEP should be in hyperthermia (39-41˚C) because tumor cells are extremely vulnerable at higher temperatures (Dahl 1990, Clark 1994).
Results: Until TNF alpha was introduced in the therapy of soft tissue sarcomas the results were disappointing. Multicentric study performed by Eggermont assist. in 1999. revealed that IEP with Melphalan, TNF alpha and hyperthermia during 90 minutes achieved complete remission in 28%, partial remission in 47%, no change in 22% and progression of illness in 3%.
Conclusion: Isolated perfusion of the extremity in very complex procedures demanding well trained multidisciplinary team and special equipment and therefore it could be performed only in highly specialized medical centers. Indications for this procedure now are locally advanced soft tissue sarcomas and intransit metastases of melanoma. In the future development of new cytostatics and gene therapy might broaden indications for IEP.

Vesna PLEŠINAC-KARAPANDŽIĆ
Slavica ZORANOVIĆ
Aleksandar TOMAŠEVIĆ
Mirjana RADONJIĆ
Brankica RAKOVIĆ
Marko JOVANOVIĆ
Slobodan ČIKARIĆ

INSTITUTE FOR ONCOLOGY AND RADIOLOGY OF SERBIA, BELGRADE, SERBIA

The isolated para-aortic lymph node recurrence in carcinoma of the cervix: A single center treatment outcome

KEYWORDS: Cervix Neoplasms; Lymphatic Metastasis; Lymph Nodes; Treatment Outcome

Background: Metastatic relapse of the carcinoma of the cervix to the para-aortic lymph node is associated with poor prognosis. The aim of study was to determine the effect of treatment the paraortic lymph nodes metastases in pts with carcinoma of the cervix using: radiotherapy (RT), chemotherapy (CT), or combined chemo/radiotherapy (CTR).
Patients and methods: A randomized study of 184 patients with advanced cervical cancer (St.IIb-IVa) treated with radiotherapy or chemo/radiotherapy (using cisplatin, 5 cycles during radiotherapy, once a week) was done in 2003. Fifteen pts had clinically detected isolated para-aortic lymph node metastases. The median age of 15 pts was 53 years (range 30-69 years). The histology of the primary tumor was squamous cell carcinoma in 14 pts and adenocarcinoma in one patient. The previous tumor stage was stage IIb in 3 patients and stage III in 12 pts. The metastases of para – aortic lymph node were estimated by ultrasound in 4 pts, CT in 2 pts and with both imaging in 9 pts. The treatment consisted of: radiotherapy of para-aortic lymph nodes in 3 pts, chemotherapy in 4 pts and chemo/radiotherapy sequentially in 8 pts. Different therapy approaches were applied. Chemotherapy (CT) consisted of cisplatin IV-VI cycles. The group treated with chemo/radiotherapy, 1-2 cycles of CT had before RT. Radiotherapy for all patients who received it included doses of 45 Gy of external photons, in 24 fractions, AP-PA field technique.
Results: Due to prior therapy among pts with metastatic para-aortic lymph node, there was no significant impact of previous therapy approach (RT vs. CT+RT concurrently) on developing metastasis with the median of 5 vs. 6 months to the relapse ($p=0.95$). With the median follow up of 7 months, the 2-year overall survival (OS) was 17% in all groups. There was no difference in OS between different therapy approach and combination of treatment modalities (CT+RT) (Log-Rank test $p=0.239$). Combination of chemo/radiotherapy had not significant impact on OS, with the median follow up of 11 months vs. follow up in RT group 3 months and CT group 5 months. There were 7 (46.6%) confirmed objective response in all groups (all complete response [CR], 5/15 pts and 2/15 pts with partial response [PR]), and the best response was achieved in pts of CTR group, 5/8 pts. Treatment was well tolerated. 40% of the 15 pts experienced late complications.
Conclusion: The use of different therapy approach in treatment of isolated para-aortic lymph node metastases, did not improve the therapeutic ratio. Chemo/radiotherapy sequentially might improve it. The treatment of the carcinoma of the cervix relapse to the para-aortic lymph node is associated with poor prognosis and the treatment has palliative aim.