56.
THE ROLE OF EXTERNAL IRRADIATION IN POSTOPERATIVE TREATMENT OF SOFT TISSUE SARCOMAS – LAST DECADE OF GLIWICE EXPERIENCE

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Aim of the study was to evaluate the role of postoperative external irradiation in the treatment of patients with high risk of local relapse of soft tissue sarcomas, as well as to evaluate the long-term results of this combined treatment. Data charts of the 77 patients with STS treated by surgery and postoperative external beam radiotherapy in Institute of Oncology in Gliwice during the period 1990-1999 has been reviewed. Extremity was the most frequent tumour site (75%), followed by trunk (10%), pelvis (7%), head and neck (4%) and retroperitoneal space (4%). Histological types included liposarcoma (27%), MFH (23%), fibrosarcoma (22%), neurosarcoma (12%), synovial sarcoma (8%) and others (8%). Only in 52% of patients the grade of the tumour was evaluated (G1-12 pts, G2-14 pts, G3-14 pts). Only 23 patients (30%) was treated by chemotherapy after local treatment. In majority patients were primary operated at general surgery departments, outside the reference centre with technique typical for benign tumours. Because of non-radical first surgical treatment and large number of early local recurrences in a whole group over 140 operations has been undertaken. Surgical margins were proven by histological procedures only in 29% of the patients. Long term OS, DFS and LC rates have been 64%, 56% and 69% respectively. Distant metastases have occurred in 30% of pts. during the first 2 years of observation. Prognostic factors have been evaluated in both univariate and multivariate analysis. The most important positive prognostic factors were as follows: radical surgical treatment and concomitant chemo-radiotherapy.

The first, often proven or suspected as non-radical, tumour excision is the most important and probably independent negative prognostic factor for tumour cure and patient survival. For such clinical situations secondary surgical approach as a wide excision is recommended. Because of a large number of cases in analysed material with single or multiple local relapses decision of adjuvant therapy has to be considered individually. It seems that in such clinical situation, postoperative radiotherapy or aggressive radio-chemotherapy in cases with no clinically detected local relapse gives the best chance for survival. The long time of anamnesis, several surgical treatments of tumour relapses with no sarcoma policy stress the need to establish the general national rules for diagnosis and adjuvant treatment of soft tissue sarcomas.

57.
PHYSICAL AND DOSIMETRIC ASPECTS OF QUALITY ASSURANCE IN STEREOTACTIC RADIOTHERAPY

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A quality assurance system in stereotactic radiosurgery and stereotactic fractionated radiotherapy, concerning the physical and dosimetric aspects, may be divided into three elements: (1) the preparation of reliable basic data for the computerized treatment planning system; (2) a control of the accelerator parameters prior to patient treatment; (3) preparation of the optimal treatment plan with the treatment planning system.

Due to the small size of the beams formed by circular collimators (7.5-35mm diameter, BrainLab System) the smallest available detectors should be used for measurements – a diamond diode (0.3 mm thickness) and a 0.015 cm^3 ionization chamber (PTW Freiburg) are adequate to measure precisely TMR curves, beam profiles and output factors required for the treatment planning system BrainScan.

The full control of accelerator parameters (Clinac 2300 C/D) necessary to safely carry out the treatment requires a comprehensive list of tests (an extended list of weekly checks including Winston-Lutz test). Testing procedure carried out with a set of specialized devices (Med-Tec, Radak, BrainLab) takes about two hours. Proper accelerator check and regulations allow for very precise patient positioning.

Treatment planning (with the treatment planning system BrainScan) is based on a