have been difficult because of borderline respectability. Radiotherapy was applied usually between the second and the third cycle of chemotherapy. Radiotherapy was given 35 Gy in 10 fractions to 47 patients. Remaining 2 patients were treated with 46 Gy with 2 Gy/day. Chemotherapy was given 3−6 cycles after surgery. In the radiotherapy group tumor size was between 3−32 cm (median 11 cm). In the chemotherapy group tumor size was between 4−20 cm (median 10 cm).
Results: Forty-seven patients out of 49 patients, who were treated with radiotherapy, had limb-sparing surgery. 24 patients out of 26 patients who were treated with only chemotherapy had limb-sparing surgery. On univariate analysis age $\leqslant$21 years ($p = 0.02$), lower extremity localization ($p = 0.003$) and HUVOS Grade IV ($p = 0.01$) significantly survived better than the others. On multivariate analysis HUVOS Grade ($p = 0.01$), age ($p = 0.02$) and tumor localization ($p = 0.003$) were significant prognostic factors for actuarial survival. In the radiotherapy group the 5-year local control, disease-free and actuarial survival rates were 98, 42 and 52, respectively. In chemotherapy group the 5-year local control, disease-free and actuarial survival rates were 91, 62 and 55, respectively.
Conclusion: Preoperative radiotherapy helps to increase the tumor necrosis rate, local control and the chance of extremity sparing surgery when combined with chemotherapy. Though overall survival rate was higher in patients with treated with chemotherapy, this difference was not statistically significant. It is difficult to make definite conclusions, because this was a nonrandomized and retrospectively analyzed study and the quality and the quantity of the patients were not the same in two groups.

7519 POSTER

Changing the treatment planning paradigm for soft tissue sarcoma in the thigh

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Purpose: Post-operative radiotherapy in the thigh traditionally employs parallel-opposed fields covering the entire affected compartment, with large margins and minimal sparing of normal tissue. With the change in surgical techniques and the move from 2D to 3D radiotherapy planning, this study explored conventional radiotherapy treatment volumes and compared them to conformal treatment of the tumour bed with margins adapted according to normal tissue dose constraints. Conventional volumes were compared to tumour bed volumes for length and volume and IMRT dose/volume constraints were constructed.
Materials and Methods: Radiotherapy planning CT scans of 10 patients with soft tissue sarcoma of the thigh were acquired. Volumes were defined using pre-operative imaging, surgical notes, pathology and surgical clips placed in the tumour bed. Conventional volumes were defined as the whole of the involved compartment of the thigh, with a radial margin of 1 cm to form the Phase I PTV. Superior/inferior (S/I) margins of 5 cm were added for tumours less than 10 cm length and 7 cm for tumours over 10 cm length. Conformal plans were defined as the tumour bed, a 3 cm radial margin was added and 5 cm S/I. Organs at risk (OAR) were identified as whole femur, neurovascular bundle, a soft tissue corridor and normal tissue outside the PTV. Pelvic organs were contoured for four patients whose disease involved the insertion of the muscle group.
Results: The planning protocol defined modifications of the conformal PTV for OAR extension. A skin corridor was defined as a 2 cm margin opposite to the PTV, covering 1/3 of the thigh circumference over the length of the PTV. The median volume (range) of the conformal CTV was 335 cc (57–1088 cc) compared to 712 cc (222–1544 cc) for the conventional plans ($p = 0.009$). The median volume (range) of the conformal PTV was 1813 cc (597–3919 cc) compared to 2743 cc (1130–5133 cc) for the conventional PTV ($p = 0.02$). The median length of PTV was 26 cm for the conformal plan and 29 cm for the conventional plan ($p = 0.04$).
Conclusion: Defining the CTV according to the surgical tumour bed rather than the affected compartment results in a significantly lower PTV volume and treatment field length enabling the definition of a prospective IMRT outlining protocol. Use of reduced treatment volumes and IMRT techniques may result in lower doses of radiation to critical normal tissues and therefore to decreased late side effects and may allow for conformal dose escalation.

7520 POSTER

Preoperative IMRT combined with temozolomide for locally advanced soft tissue sarcoma

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Background: Neoadjvuant radiation has shown to improve local tumor control in soft tissue sarcoma. This study was conducted to evaluate the toxicity and therapeutic effects of preoperative intensity-modulated radiation therapy (IMRT) combined with temozolomide.
Patients and Methods: Eligibility included primary high-grade soft tissue sarcoma or recurrent tumors not amenable to surgical resection with clear margins. Patients received 50 mg/m^2 Temozolomide during IMRT (50.4 Gy, 28 $\times$ x 1.8 Gy). Resection was intended six to eight weeks after completion of neoadjuvant treatment. Toxicity was assessed by NCI-CTC 3.0 and response was assessed by MRI using RECIST criteria as well as by pathology of the resection specimen using the proportion of necrosis for classification.
Results: Thirteen patients were enrolled and twelve patients completed the protocol. One patient stopped treatment because of tumor related abdominal pain. No grade four toxicities have been reported. Most frequent grade three toxicity was nausea and vomiting (6/13). Most frequent toxicities of any grade have been dermatological (9/13), gastrointestinal (8/13) and haematological (7/13). Local response according to RECIST criteria was progressive disease in three patients, stable disease in six and partial response in four cases. Two patients developed intercurrent lung metastases. Eight patients underwent surgery, of which five were R0 and three were R1 resections. Four patients did not undergo surgery because of metastatic disease or unresectability and one patient refused surgery. Wound complications occurred in two patients. Histologic examination revealed more than 90% necrosis in one resection specimen, more than 50% in four cases and less than 50% in another three.
Conclusion: Preoperative chemoradiation with temozolomide and IMRT for locally advanced soft tissue sarcoma can be administered safely and with some efficacy in patients with locally advanced soft tissue sarcoma. The histological response to treatment leaves room for further exploratory trials.

7521 POSTER

Successful pan-European and trans-Atlantic collaboration in a randomised controlled trial in osteosarcoma: EURAMOS1 (ISRCTN67613327; a trial conducted as part of ECT-EUROCORES)

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Background: Randomised controlled trials (RCT) are the gold standard for assessing new approaches to treatment. In rare cancers, such as osteosarcoma, RCTs can only be performed with large-scale international cooperation and collaboration.
Materials and Methods: Four multinational groups (COG, COSS, EOI, SSG) from Europe and North America collaborate in EURAMOS1 within the European Science Foundation's ECT-EUROCORES scheme, led from MRC Clinical Trials Unit (London, UK). All patients receive MAP chemotherapy (methotrexate, doxorubicin and cisplatin) prior to surgery and are risk-stratified after surgery: "good responders" are randomized to continued MAP or MAP followed by maintenance pegylated interferon; "poor responders" are randomized to either continued MAP or MAPIE (MAP + ifosfamide, etoposide). 1400 registered patients are planned over 4 years. An efficient infrastructure has been set up to ensure the successful running of the trial. The EURAMOS Intergroup Safety Desk (Muenster, D) has established an international system for SAE, SAR & SUSAR reporting to multiple competent authorities and ethics committees. Trial site monitoring and data centre audits are well under way. ESF has funded two training courses to familiarize institutional staff with the requirements of multinational GCP trials; a third is planned.