the only metastatic site in 32 (33.5%) pts or were associated with another site in 36 pts (37.5%) and with at least two other sites in 28 (29%) pts. The Karnofsky Performance Status was > 70% in 77 pts (88%). Radical surgery was performed in 9 pts while 4 pts received a stereotactic radiation surgery. 58 (59%) pts received CT after development of BM: 60% of pts just received one line, 26% had 2 lines, 14% 3 lines or more. 37 pts had synchronous BM, 54% received CT before RT and 57% after, the median time to the beginning WBRT was 3.6 m. The median overall survival was 8.7 m[1.4−56]. 59 pts developed metachronous BM with a median time of 10 m after diagnosis of the primary tumor, the WBRT begins after a median time of 1.15 m. The median overall survival after the diagnosis of BM was 5.7 m [0.4−44.5].
The median overall survival from time of BM diagnosis for all pts was 6.7 m [0.2−69.6]. Median overall survival since the first diagnosis of metastases (watherver the site) was 11.6 m [0.6−69.6].
Conclusion: Our results suggest that in NSCLC pts with synchronous BM, CT may be beneficial and that the sequence with WBRT should be better define.

9056 POSTER

Evaluating the efficacy of zoledronic acid for the prevention of disease progression in patients with non-small cell lung cancer (NSCLC)

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Background: Bisphosphonates are effective inhibitors of bone resorption, and outcomes from preclinical and clinical studies have suggested that they have antitumor activity. Preclinical studies of zoledronic acid (ZOL) have demonstrated its ability to induce tumor cell apoptosis, inhibit angiogenesis, inhibit tumor cell adhesion and invasion, decrease tumor cell proliferation, and activate an immune response. Clinical studies in patients with early stage breast cancer suggest that ZOL improves disease-free survival and recurrence-free survival and may improve bone-metastases-free survival. These findings provide the rationale to investigate whether ZOL can prevent disease progression in patients with early stage NSCLC.
Material and Methods: Study 2419 (NCT00172042) is an ongoing, randomized, phase III trial, sponsored by Novartis, in patients with stage IIIA/B NSCLC who have completed primary treatment (surgery or radiation therapy and chemotherapy) and did not experience disease progression after primary treatment. Patients were randomized within 8 months of diagnosis to treatment with or without ZOL (4 mg q3−4 weeks) for up to 24 months. The primary endpoint of this study is progression-free survival (PFS), which includes disease progression, disease recurrence, and death.
Results: As of January 2009, 407 patients with NSCLC have enrolled and the overall incidence of bone metastases, disease progression, disease recurrence, and death has been evaluated (Table 1).

Table 1: Disease events in patients with NSCLC after primary therapy

	Completed 24 months, n = 58	Ongoing treatment, n = 161	Discontinued treatment, n = 188	Total patients, N = 407
Bone metastases, n (%)	2 (3.4)	4 (2.5)	20 (10.6)	26 (0.6)
Progression/Recurrence, n (%)	19 (32.8)	46 (28.6)	131 (69.7)	196 (48.2)
Death, n (%)	5 (8.6)	0	110 (58.5)	115 (28.3)
Progression/Recurrence/Death, n (%)	21 (36.2)	46 (28.6)	155 (82.4)	222 (54.5)

Currently the median follow-up of patients in this study is 12.9 months (range, 0.03−36.2 months). Updated preliminary safety and efficacy results from this trial will be presented.
Conclusions: Study 2419 is an ongoing trial to evaluate the activity of ZOL in delaying disease progression in patients with NSCLC. The available event profile demonstrates the feasibility of this trial, and updated results will be presented. Results from this trial will complement the growing body of evidence of ZOL for preventing disease recurrence in the early breast cancer setting.

9057 POSTER

New dendritic cell immunotherapy approach: randomized phase II study in IIB-IIIA stage non-small cell lung cancer patients

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Background: Ex vivo-generated dendritic cells (DC) loaded with tumor antigens have been used as vaccines to improve antitumor immunity in patients with different types of cancer since 1996. Currently, extensive studies to improve the immunotherapy approach based on DC-vaccine have been performed. Great emphasis is paid to finding new more efficient ways to load DC with tumor antigens. Our preclinical findings indicate that the mechanically heterogenized tumor cells (MHTC) used for DC loading is a very effective and promising approach. We report a phase II trial in non-small cell lung cancer (NSCLC) patients treated with DC pulsed with MHTC, following successful phase I results.
Material and Methods: Seventy-one patients with IIB-IIIA stage NSCLC, ECOG 0−1, without autoimmune disorders were enrolled. 28 patients had received DC-therapy in adjuvant regimen (4−9x10^6 per injection), 43 patients underwent surgery (lobectomy, pneumonectomy) only. In the trial were used autologous DC of monocytic origin with expression of surface markers CD86 and HLA-DR at least 70%, CD83 – 50% obtained by flow cytometry. Adjuvant therapy with DCs loaded with MHTC was carried out in post-operative period for prevention metastasis development and recurrence of disease. DCs were injected i.v. in 1−2 courses. One course consisted of 5 injections with one-month interval. Groups of comparison were similar by histology forms, stages, age. Clinical and immunological monitoring of DC-vaccine therapy was performed. Special attention was focused on antigen specific antitumor immune response.
Results: DC-immunotherapy was well tolerated without significant toxicity. DC-therapy has improved of 3-year survival of patients. Overall survival of NSCLC patients for 3 year in the group with vaccine therapy was 66% vs 30%. During 3 year follow-up period in a group with DC-vaccine treatment disease progression occurred in 9 patients (32.1%), in a group with surgical treatment alone – in 26 patients (60.5%). 95% of patients showed significant antigen specific immune response after 3−5 DC-vaccinations. In responding to DC-vaccination patients, immunotherapy significantly boosted the IFN-γ and IL-2 producting T-cell response to autologous tumor challenge. Moreover, the increased functionality of T-cells, indicated by increased expression of markers for CTL activation, differentiation and proliferation was revealed.
Conclusions: There was clear evidence of clinical benefit of immunotherapy by DC pulsed with MHTC for NSCLC patients. This approach warrants further study.

9058 POSTER

Analysis of tumor texture on a pre-treatment CT scan predicts treatment outcome in NSCLC patients

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Background: Early identification of patients at risk of treatment failure is an essential step to improve current treatments. We hypothesized that texture and shape attributes of the tumor on a pre-treatment CT scan correlate with patient outcome. We therefore developed a semi-automated recognition system for prediction of 2-years survival, after radiotherapy based on CT scans image traits.
Methods: 129 patients (38 women and 91 men) with inoperable NSCLC (stage I-III), treated with radical (chemo)-radiotherapy were included in this study. The primary gross tumor volume was delineated on a pre-treatment CT scan and was defined as the region of interest (ROI). A set of 30 image traits assessing gray level intensity and spatial distribution, size and shape of the tumor were extracted from the ROI. The cohort was randomly divided into five equally sized groups. In a combinatorial feature selection procedure a support vector machine model was built and validated using a five-fold cross validation approach. The model performance was expressed as the mean AUC assessed by the 5-fold cross validation. The combination of variables with the highest classification accuracy was included in the final model. Patient outcome was defined as 2-years survival calculated from the start of treatment.
Results: From the 30 extracted image features, 5 were included in the final predictive model: contrast, mean gray value, kurtosis, long run emphasis and compactness. These features encode textural and shape information