Purpose/Objective: The increase in life expectancy leads to an increased number of elderly patients (pts) diagnosed with NSCLC. Octogenarians can be a treatment challenge due to frailty and comorbidity. Stereotactic Body Radiotherapy (SBRT) has become the standard treatment for medically inoperable pts with early stage NSCLC. However, it is unknown if all pts have same benefit of SBRT due to lack of randomized studies. This retrospective single-institution study reports survival and control rates for medical inoperable octogenarians vs. pts <80 years old with early stage NSCLC treated with SBRT.

Materials and Methods: All records of pts treated with SBRT in our institution from 2005 to 2014 were reviewed. The thoracic RT consisted of 45-66 Gy/3F delivered in 9 days. The majority of the tumors were histological or cytological proven NSCLC T1-2N0M0. Pts were divided into two cohorts, age ≥80 and <80. Kaplan-Meier and Cox proportional hazard analyses were used for uni- and multivariable survival analyses, respectively. Overall survival (OS), local failure-specific survival (LFS), and distant recurrence-free survival (DRFS) were compared.

Results: A total of 187 pts were identified. Of these, 50 were ≥80 and 137 were <80. Median follow-up was 31.2 months. Statistically significant (p<0.05) inter-group differences in patient characteristics were observed: Fraction of female population 26% vs 62%, fraction smoking within the last 10 years 38% vs 17%, fraction of pts with stage T1 58% vs 77%, for the groups ≥80 and <80, respectively. No differences in PS, radiation dose, clinical vs. pathological diagnosis of NSCLC, histology, mediastinal staging, or PET scans at time of diagnosis between the two groups were observed (all p>0.05). No difference in comorbidity measured by Charlson Score index was observed. SBRT was generally well tolerated. A log rank test showed a significant difference of OS between patients ≥80 and <80 (p=0.02) e.g. resulting in an OS at 5-year of 62% vs. 80% for the groups ≥80 and <80, respectively.

Conclusions: Within the limitations of this study, octogenarians undergoing SBRT achieved similar DRFS compared to younger pts. The octogenarians had significantly shorter OS and significantly shorter LFS than pts <80. However, SBRT is still a potential curative treatment for octogenarians with early-stage NSCLC not fit for surgery.

Materials and Methods: A randomized, open-label, controlled single-center study was made involving 60 BCP undergoing radiotherapy (RT).

Purpose/Objective: To evaluate the effectiveness of a body emulsion containing 0.25% hyaluronic acid, 0.25% chondroitin sulfate, Aloe vera, carrot oil, vitamin F and vitamin E for preventing and treating skin toxicity in breast cancer patients (BCP) undergoing radiotherapy (RT).

Materials and Methods: A randomized study with a hyaluronic acid and chondroitin sulfate lotion for radiodermitis in breast cancer patients J. Pardo-Masferrer1, M. Murcia1, R. Soto3, J. González1, I. Alastuey2, S. Montemuiño1, I. Ortiz2, A. Mena2

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Purpose/Objective: To evaluate the effectiveness of a body emulsion containing 0.25% hyaluronic acid, 0.25% chondroitin sulfate, Aloe vera, carrot oil, vitamin F and vitamin E for preventing and treating skin toxicity in breast cancer patients (BCP) undergoing radiotherapy (RT).

Materials and Methods: A randomized, open-label, controlled single-center study was made involving 60 BCP undergoing RT, and a historical series of 30 controls. The 60 patients were divided into two groups of 30 subjects each (prevention group: emulsion use starting 2 weeks before radiotherapy; and treatment group: emulsion use starting upon appearance of skin problems). The two groups were compared with a historical series of 30 controls who received no specific dermatological treatment.

Results: A total of 90 patients were included, with a mean age of 60.75 years (SD 9.6). Significant differences (p=0.0001) were observed among the 3 groups in terms of the development of dermal toxicity based on the RTOG/EORTC criteria. The controls accumulated a larger number of dermal toxicity manifestations (184 vs 103 in the treatment group and 80 in the prevention group). Time to appearance of skin toxicity after starting radiotherapy was significantly longer in the prevention group than in the control series (51.72 vs. 42.23 days, respectively; p=0.01). 4 patients presented mild allergic skin reactions resolved with suppression of the emulsion. The product characteristics were very positively rated by the patients. The percentage of positive responses (quite satisfied/very satisfied) in reference to general satisfaction, rapid absorption, more hydrated and soft skin, easy application, symptoms improvement and rapidity of symptom relief being 97.05%, 97.04%, 96.75%, 96.73%, 96.45% and 94.97%, respectively.

Conclusions: The body emulsion with hyaluronic acid and chondroitin sulfate is effective both in delaying the appearance of skin toxicity and in improving the patient’s quality of life.
PO-0766
Radiosensitivity of bone metastases according to different histogenesis
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Purpose/Objective: The purpose of the current clinical trial was to evaluate efficiency of palliative external beam radiotherapy for symptomatic bone metastases from different primary tumors and to search for optimum treatment schedules.

Materials and Methods: The randomized study included 427 patients treated for 616 sites of bone lesions. Breast was the primary site in 67% of cases, prostate - in 7%, lung - in 8%, renal - in 6%, other tumors, including sarcomas, melanoma, colon cancer and unknown primary site - in 12%. The most frequent treatment site was the spine - 48%, followed by pelvis - 34%, long bones - 14% and other sites - 4%. The main indication for irradiation was pain not alleviated by systematic drug therapy (chemotherapy, target therapy, bisphosphonates). Radiotherapy protocol included hypofractionation regimes of 2, 3 or 4 fractions of 6,5 Gy daily, every two days or every five days and standard treatment schedule of 23 fractions of 2 Gy daily.

Results: The average follow-up period was 41 months. General pain relief (complete and partial) was observed in 95.8% - 100% of cases and was independent of primary tumor metastases localization and irradiation schedules. Complete response rate (CRR) was higher for bone metastases from breast and prostate cancer 67% and 64% correspondingly in comparison with lung and renal cancer - 55% and 33% respectively (p<0.05). At small number of observations metastases from melanoma and sarcomas proved high radiosensitivity with CRR 75% and 69% correspondingly. CRR for spine and pelvis localization of metastases was similar - 63.4% and 59.3%, slightly lower for long bones - 48.3% and significantly lower for sacrum isolated metastases - 27% (p=0.05). CRR significantly increased from 43.6% to 47.9% and 64.4% for 2, 3 and 4 fractions of 6,5 Gy correspondingly (p=0.03). The pain relapse rate in irradiated zone was 8.2% and detected no correlation with histology type, metastatic site, dose and fractionation schedules. The acute toxicity rate (RTOG/EORTC) comprised 24-32% independently of irradiation regimes. Late radiation morbidity was observed in 15.7% for standard treatment schedule and decreased in consecutive way for 4, 3 and 2 fractions of 6,5 Gy (14.4%, 10.9% and 8.3% respectively). Late toxicity grade 2 was significantly lower (1.7%, p<0.05) for 3 fractions regime.

Conclusions: Histogenesis of primary tumor is a predictor of radiosensitivity of bone metastases, it significantly affects the complete pain response rate. It is expedient to use hypofractionation regimes of 3 fractions of 6,5 Gy (total dose 19,5 Gy) for palliative radiotherapy for bone metastases in case of breast and prostate cancer and 4 fractions of 6,5 Gy (total dose 26 Gy) in case of lung and renal cancer daily, every two days or every five days. In the multifactorial analysis tumor primary site and pain intensity before radiotherapy were the only independent prognostic factors of CRR.

PO-0767
PET versus CT to predict survival after the radioembolization of liver metastases with 90Y resin microspheres
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Purpose/Objective: The assessment of response to radioembolization (RE) of liver metastases is difficult because the effect of the radiation on tumour burden is quite different from those of chemotherapeutic agents, and patients undergo this treatment after multiple systemic and regional therapies which determine dramatic changes in liver density - caused by necrosis or sclerosis. 18F-FDG-PET/CT has been documented as a powerful tool in this respect, nonetheless there is not agreement about the optimal imaging choice (CT vs. FDG-PET/CT). We investigated the accuracy of different parameters derived from CT and 18F-FDG PET/CT in early predicting the outcome after RE

Materials and Methods: Patients with chemo-refractory liver metastases from solid tumours scheduled to receive RE underwent 18F-FDG-PET/CT and CT scan before and 6 weeks after RE. Response to treatment was assessed in PET according to PERCIST criteria, and metabolic tumour volume (MTV), in CT according to RECIST criteria. Overall survival (OS) rates were calculated using the Kaplan Meyer method, and differences among scoring criteria were explored with the log-rank test

Results: 22 patients were suitable for analysis. All patients received a single treatment of RE, with a median activity of 1.7 GBq (range 0.6-2.9) of 90Y microspheres. Metabolic response correlated significantly with OS. For PERCIST, the median OS was 28.4 months (95 % CI, 12.4-44.4 mo) in patients with CR, 17.7 mo (5.0-30.5 mo) in patients with PR and 4.8 mo (2.9-6.8 mo) in those who had SD (see Figure 1). All these differences were statistically significant (p<0.05). Moreover, responders (CR+PR) had a median OS of 20.6 mo (5.7-35.5 mo) with a significantly longer OS compared to those who showed SD.

MTV did not produce the expected results, i.e. did not correlate with the survival. In several patients we experienced some difficulty in defining lesion margins and establishing a threshold vs the surrounding liver parenchyma. Concerning RECIST criteria, there was no strict separation between patients who responded to RE and those who did not. The median OS for patients with PR, SD and PD was 20.6 (14.5-32.8 months), 11.8 (7.9-29.6 months), and 2.7 months (0-15.5 months), respectively. Despite the median response values were separated, the statistical analysis of the survival curves did not reveal any significant difference among the four scores (CR, PR, SD, PD).