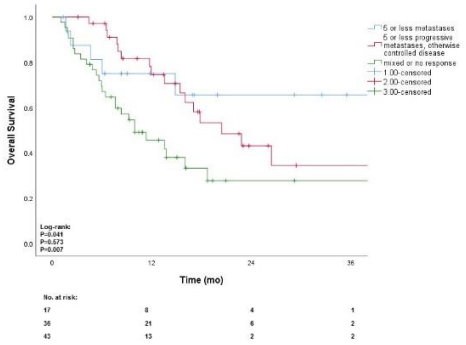
mo. The majority had metastases in 1-3 organs. 90% were ECOG 0-1. Median 1 (range 1-5) metastasis was treated with SRT; 69% cranial and 31% body SRT. Targeted therapies were started a median 5.8mo before SRT in 69%, during SRT in 8%, and a median 14d after SRT in 23% of patients. 60% received an ALK- or EGFR-TKI, 31% nivolumab or pembrolizumab, 8% bevacizumab. Oligoprogressive and oligopersistent patients showed improved OS compared to advanced metastatic disease (p=0.008) (Fig.1). PFS was best in oligoprogressive patients; median 20.1 vs 7 and 4.4 mo., respectively (p=0.006). LC was median 21.0, 12.0 und 9.0mo: no sign. difference between groups. After 1y, 86%, 47% and 39% in the 3 groups continued the same immuno- or targeted therapy as before SRT. Grade 3 and 4 acute toxicity were observed in 6% and 1% (n=1, headache), late toxicity in 3% and 1% (n=1, hemiparesis), respectively.



Conclusion
This study observed excellent survival with limited toxicity when definitive SRT to a limited number of metastases was combined with targeted- or immunotherapy in oligoprogressive and oligopersistent NSCLC patients. High-dose local radiotherapy of metastatic sites allowed continuation of targeted-, or immunotherapy for minimum 1 year in 39% to 86%, with best results observed in oligoprogressive patients. These observations need to be further evaluated within prospective trials.

OC-0060 I-SABR induces local and abscopal responses in metastatic patients after failure to ICI treatment

R. Chicas Sett[1], I. Morales-Orue[1], J.F. Castilla-Martinez[1], J. Blanco[1], A. Kannemann[1], J. Zafra[1], M. Zajac[1], M. Lloret[1], P.C. Lara[2]
[1]Dr. Negrin University Hospital of Gran Canaria, Radiation Oncology, Las Palmas de Gran Canaria, Spain; [2]San Roque University Hospital/Universiada Fernando Pessoa Canarias, Radiation Oncology, Las Palmas de Gran Canaria, Spain

Purpose or Objective
The increased probability of abscopal responses that can be triggered by the combination of immune-checkpoint inhibitors (ICI) and stereotactic ablative radiotherapy (SABR) represents a promising therapeutic strategy for eradicating metastatic disease. The aim of the present study is to assess the role of I-SABR in patients with metastatic cancer in progression to ICI.
Material and Methods
We conducted a prospective study based on metastatic patients (lung, melanoma, H&N, bladder and renal carcinoma) who had experienced disease progression while on ICI (anti-PD1/L1) treatment. SABR was performed by volumetric-modulated arc therapy and each fraction was delivered in a separate interval of 48 hours. Objective overall response (OR) including complete response (CR), partial response (PR) and stable disease (S), acute toxicity (CTCAE v.4.3), and abscopal response (AR) were measured. One to three metastases were selected on each patient for SABR treatment. All patients had received at least 1 cycle of ICI prior to SABR. In order to evaluate the AR, 2 non-irradiated lesions were selected. AR was defined as 25% reduction in any non-radiated predefined measurable lesions. These lesions were assessed according to RECIST (v1.1) by CT, MRI or PET at 8-week intervals.
Results
From September 2017 to October 2018, 60 patients who had received anti-PD-1/L-1 immunotherapy [nivolumab (n=31), pembrolizumab (n = 22) or atezolizumab (n = 7)] were included. Twenty patients were excluded from analysis due to the lack of at least 8-weeks follow-up after SABR. All lesions received SABR doses > 6 Gy/fraction, with a median dose of 35 Gy/5 fractions (BED_{10} = 59.5 Gy). After a 7-month median follow-up (2-14 months), the acute ICI toxicity profile was similar before and after SABR. Median overall survival (OS) was 9 months (SD 0.5, IC95% 8.0-10.4). Local response was reported in 29 patients (73%). AR was observed in 13 patients (33%), 4 of whom had CR, 6 PR and 2 stable. Median time from SABR to AR was 2 months. All patients with AR are alive to date. Overall, 21 patients (53%) presented OR and 5 patients (13%) achieved a sustained systemic CR. OS sub-analysis was significantly higher in the AR group versus the Non-AR group (100% vs 60%, p=0.01). OR rate was also higher in the AR group versus the Non-AR group (88% vs. 28%, p=0.002). Patients continued to receive the same ICI for a mean of 6 months post-SABR (range: 2-14 months) before subsequent disease progression. Only 9 patients (23%) have required a new systemic treatment. Lastly, an analysis regarding SABR dose was performed. Patients were divided into two groups based on the biologically equivalent dose (BED_{10}) received. Patients who received doses > 50 Gy (BED_{10}) achieved a superior median OS compared to <50 Gy (BED_{10}) (9 vs 4 months, p=0.01).
Conclusion
Our results show that in patients unresponsive to ICI, I-SABR could rechallenge the immune system resulting in high local and abscopal effect improving survival with maintenance ICI treatment.

OC-0061 EORTC 22113-8113 Lungtech trial on SBRT of central lung tumors

S. Adebahr[1,2,3], Y. Liu[4], S. Colette[4], C. Faivre-Finn[5], S. Ahmad[6], M. Ahmed[7], J. Belderbos[8], N. Andratschke[9], K. Franks[10], X. Geets[11], M. Guckenberger[9], K. Konopa[12], M. Lambrecht[13], V. Lewitzki[14], Y. Lievens[15], N. Pourel[16], D. De Ruysscher[17,18,19], R. Dziadziuszko[12], C. Fortpied[4], F. McDonald[7], H. Peulen[8,20], A. Grosu[1,2,3], C. Hurkmans[20], C. Le Pechoux[21], U. Nestle[1,22]
[1]Medical Center- Faculty of Medicine- University of Freiburg, Department of Radiation Oncology, Freiburg im Breisgau, Germany ; [2]German Cancer Consortium DKTK, Partner Site Freiburg, Freiburg, Germany; [3]German Cancer Research Center, dkfz, Heidelberg, Germany; [4]EORTC, Headquarters, Brussels, Belgium; [5]Division of Cancer Sciences- University of Manchester, The Christie NHS Foundation Trust, Manchester, United Kingdom; [6]NHS Foundation Trust, Guy's & St Thomas', London, United Kingdom; [7]Royal Marsden NHS Foundation Trust/Institute of Cancer Research, Department of Radiotherapy, Sutton, United Kingdom ; [8]The Netherlands Cancer Institute, Department of Radiation Oncology, Amsterdam, The Netherlands; [9]University of Zurich, Department of Radiation Oncology, Zurich, Switzerland ; [10]St. James's University Hospital, Department of Clinical Oncology, Leeds, United Kingdom; [11]Cliniques universitaires Saint-Luc- MIRO - IREC Lab, Department of Radiation Oncology, UCL-Bruxelles, Belgium ; [12]Medical University of Gda´nsk, Department of Oncology and Radiotherapy, Gda´nsk, Poland; [13]UZ Gasthuisberg Leuven and Department of

experimental Radiotherapy KULeuven, Department of Radiotherapy-Oncology, Leuven, Belgium; [14]University Hospital Würzburg, Department of Radiation Oncology, Würzburg, Germany; [15]Ghent University Hospital and Ghent University, Department of Radiation Oncology, Ghent, Belgium ; [16]Institut Sainte-Catherine- 250-chemin de Baigne-Pieds, Service de radiothérapie, Avignon, France ; [17]KU Leuven-University of Leuven, Department of Oncology- Experimental Radiation Oncology, Leuven, Belgium ; [18]GROW School for Developmental Biology and Oncology, Department of Radiation Oncology Maastro Clinic, Maastricht, The Netherlands; [19]Maastricht University Medical, Center, Maastricht, The Netherlands; [20]Catharina Hospital, Department of Radiation Oncology, Eindhoven, The Netherlands ; [21]Gustave Roussy- Paris Sud University, Department of Radiation Oncology, Villejuif, France; [22]Kliniken Maria Hilf GmbH Mönchengladbach, Department of Radiation Oncology, Mönchengladbach, Germany

Purpose or Objective
The European Organization for Research and Treatment of Cancer (EORTC) phase II prospective multicentre Lungtech trial 22113-08113 assesses safety and efficacy of stereotactic body radiotherapy (SBRT) in inoperable patients with centrally located non-small cell lung cancer (NSCLC). The trial was closed early due to poor accrual. Here we report on two lethal complications.
Material and Methods
Patients with centrally located ("tumor within 2 cm or touching the zone of the proximal bronchial tree (PBT) or tumor that is immediately adjacent to the mediastinal or pericardial pleura, with a planning target volume expected to touch or include the pleura") non-metastatic NSCLC (T1-T3, ≤7cm) were included. After prospective imaging review and radiation quality assurance (RTQA) patients were treated with SBRT (8x7.5Gy, ICRU 83). Follow-up is performed 6 weeks after treatment, then 3-monthly for 3 years, 6-monthly in year 4 and 5, including history, clinical examination, toxicity assessment and CT, FDG-PET and biopsy in case of suspected progression. The protocol included recruitment stop in case of potentially SBRT-related death triggering safety review.
Results
Between 08/15 and 12/17, 39 patients from 13 sites and 6 European countries were included in the trial, 33 passed imaging and RTQA review (58% male, age 57-89 years, tumor size 1.4 - 5.5cm) and were treated per protocol. So far, 2 potentially treatment related deaths were observed.
An 88 year old patient died 3 months after SBRT and death was attributed to radiation pneumonitis. Safety review could not decide on the definite cause of death, also potentially related to pre-existing cardiac disease (CD) or amiodarone lung disease. As a consequence, patients with severe pre-existing CD, interstitial lung disease or concomitant amiodarone intake were excluded from recruitment and a formal policy to treat pneumonitis was added in the protocol. As this patient had a relatively high contralateral mean lung dose (CMLD), the amended recommendation restricted CMLD to < 3.6Gy.
An 83 year old patient with a tumor broadly abutting the right lower lobe bronchus died 15 months after SBRT, scored as SBRT-related hemoptysis. The PBT received 46.5Gy to 0.54cc, considered as acceptable protocol variation. Safety review revealed that in this patient taking anticoagulants, bronchoscopy, including a biopsy of a necrotic patch at the right lower lobe was performed 4 days before death. The event was categorized as expected toxicity and recommendations for a more careful management of procedures after SBRT were made available to investigators. Although it was not recommended to stop the study for safety reasons, the repeated safety-related halt in recruitment contributed to the early closure of the trial.
Conclusion
Safety of SBRT in centrally located lung tumors remains unclear. For the prospective investigation of radiotherapy related toxicities, alternative trial designs to those typically used to investigate medicinal products might be needed.

OC-0062 Development & validation of prognostic and predictive models in limited-stage small-cell lung cancer

A. Salem[1], H. Mistry[2], S. Falk[3], G. Price[4], C. Faivre-Finn[1]
[1]University of Manchester/ Christie NHS Foundation Trust, Division of Cancer Sciences/ Radiotherapy Related Research & Department of Clinical Oncology, Manchester, United Kingdom ; [2]University of Manchester/ Christie NHS Foundation Trust, Division of Cancer Sciences & Division of Pharmacy/ Radiotherapy Related Research, Manchester, United Kingdom; [3]Christie NHS Foundation Trust, Radiotherapy Related Research, Manchester, United Kingdom ; [4]University of Manchester/ Christie NHS Foundation Trust, Division of Cancer Sciences/ Radiotherapy Related Research, Manchester, United Kingdom

Purpose or Objective
Assessment of prognosis & selection of limited-stage small-cell lung cancer (LS-SCLC) patients who benefit from chemoradiotherapy (CTRT) could aid clinical decisions. We used the CONVERT trial & validation cohorts to investigate LS-SCLC prognostic & predictive covariates.
Material and Methods
CONVERT is a phase III trial that randomised patients between twice-daily (45Gy in 30 fractions) & once-daily (66Gy in 33 fractions) CTRT, followed by prophylactic cranial irradiation if indicated. The following covariates were investigated for prognostic & predictive significance (benefit from twice-daily radiotherapy & CTRT completion) in CONVERT: clinical (age, performance score (PS), TNM stage, tumour laterality, smoking status, weight loss >10% & lung function), laboratory (alkaline phosphatase, sodium & lactate dehydrogenase) & dosimetric (gross tumour volume (GTV), % heart dose & lung V20). Chemotherapy & radiotherapy completion were defined as delivery of all pre-planned cycles (4 or 6) & all radiotherapy fractions, respectively. Multivariate overall survival (OS) & chemotherapy completion regression analyses were conducted after correcting for multiple comparisons with a final model derived via a backward elimination approach using the likelihood ratio-test. The CONVERT OS model was validated in 2 independent LS-SCLC retrospective patient cohorts, treated in the routine setting at The Christie.
Results
459 CONVERT participants & 2 Christie cohorts treated with CTRT (cohort 1; n=108) and radiotherapy ± chemotherapy (cohort 2; n=228) were included (table 1). In CONVERT, GTV was the strongest OS prognostic covariate (HR 1.3 (95% CI 1.14-1.48); p<0.001). The addition of PS (ECOG 1/2 vs 0) & tumour laterality (bilateral/midline/unknown vs unilateral) modestly improved the models' concordance index (0.59 to 0.61). The HR for OS between high & low risk groups using this model, derived by splitting on the median risk score, was 1.96 (95% CI 1.54-2.49); median OS: 21 m (95% CI 18-25) vs 45 m (95% CI 34-NR), respectively (figure 1A). The models' prognostic significance was validated in the 2 independent Christie cohorts (cohort 1 concordance index=0.62, SE=0.04 & cohort 2 concordance index=0.59, SE=0.02); figure 1B-C. None of the covariates predicted benefit from twice-daily radiotherapy in CONVERT. In CONVERT, increasing patient age (continuous) alone or with hyponatremia & decrease in forced expiratory volume in 1sec (continuous) predicted non-completion of