Gefitinib (4), Crizotinib (3), Ceritinib (1), Alectinib (1), Afatinib (1), Lorlatinib (1), Nintedanib (1), Rociletinib (1). IT or TT was started after the completion of RS in 18 patients; in the remaining cases (n=12), IT or TT was begun before RS (IT or TT was interrupted for a median period of seven days from RS in the majority of patients). Median follow-up was 12 months. One patient developed G1 radionecrosis after 18 months from RS. No G3 toxicity was observed. Median L-PFS and D-PFS were 10.6 and 7 months, respectively.

Conclusion

RS for BM may be safely associated with IT or TT in patients with NSCLC. Prospective studies are needed to confirm our results.

OC-0277 Interim safety analysis of RAPPORT trial - SABR with pembrolizumab in oligometastatic RCC

S. Siva[1], M. Bressel[2], S. Sandhu[3], B. Tran[3], J. Mooi[3], J. Lewin[3], S. Loi[3], G. Toner[3], D. Moon[4], J. Goad[4], M. Shaw[1], S. Chander[1], T. Eade[5], A. Guminski[5], D. Jayamanne[5], D. Pryor[6], K. Cuff[6], S. Wood[6], N. Lawrentschuk[4], D. Murphy[4]
[1]Peter MacCallum Cancer Centre, Department of Radiation Oncology, Melbourne, Australia ; [2]Peter MacCallum Cancer Centre, Biostatistics and Clinical Trials, Melbourne, Australia ; [3]Peter MacCallum Cancer Centre, Department of Medical Oncology, Melbourne, Australia ; [4]Peter MacCallum Cancer Centre, Department of Surgical Oncology, Melbourne, Australia ; [5]Northern Sydney Cancer Centre, Oncology, Sydney, Australia ; [6]Princess Alexandra Hospital, Oncology, Brisbane, Australia

Purpose or Objective

SABR is a locally effective modality for metastatic renal cell carcinoma (RCC) (1, 2). Preclinical data in RCC has demonstrated improved disease control in both irradiated and unirradiated sites with single fraction SABR and anti-PD1 checkpoint blockade (3), although prospective clinical trials with this combination have not yet been reported.

Material and Methods

RAPPORT is a multi-institutional, single arm, phase 1b/II clinical trial (NCT02855203). Patients with 1-5 oligometastases from clear cell RCC were eligible. They received a single fraction SABR of 18-20Gy to all metastases (or 30Gy in 10 fractions of conventional radiotherapy if SABR was not feasible) followed by 8 x 3 weekly cycles of 200mg intravenous pembrolizumab. This is a preplanned interim safety analysis of the first 12 patients who completed SABR and 12 weeks of pembrolizumab. Adverse events were graded using CTCAE v4.0.

Results

At the date of reporting 25 patients with 76 metastases have been enrolled. The mean age is 62 years, with 18 males and 7 females enrolled. The commonest site of metastasis is lung (n=38, 50%). Most patients have ECOG performance status 0 (64%), with a minority ECOG 1 (36%). For the pre-specified interim safety analysis, 12 patients with a total 37 metastases were irradiated, with 32 (86%) receiving SABR and 5 (14%) receiving conventional radiotherapy. The number of lesions per patient was 1 in 3 patients (25%), 3 in 4 patients (33%), 4 in 3 patients (25%) and 5 in 2 patients (17%). The predominant site of metastases was the lung (n=24, 65%). No treatment courses were abandoned due toxicity (radiotherapy + 8 cycles of pembrolizumab), although one patient ceased treatment early due to progressive disease. Grade 1 and graded 2 treatment related adverse events were recorded in 6 patients (50%, mixed events) and 1 patient (hypothyroidism, 8%), respectively. No grade 3 or greater treatment related adverse events were recorded.

Conclusion

The combination of SABR + pembrolizumab in a small cohort of patients to date is well tolerated. Based on this interim safety analysis the independent safety monitoring committee have recommended continuation of planned recruitment (*n*=30).

References 1. Siva S, Kothari G, Muacevic A, Louie AV, Slotman BJ, Teh BS, et al. Radiotherapy for renal cell carcinoma: renaissance of an overlooked approach. Nat Rev Urol. 2017;14(9):549-63. 2. Kothari G, Foroudi F, Gill S, Corcoran NM, Siva S. Outcomes of stereotactic radiotherapy for cranial and extracranial metastatic renal cell carcinoma: a systematic review. Acta oncologica. 2015;54(2):148-57. 3. Park SS, Dong H, Liu X, Harrington SM, Krco CJ, Grams MP, et al. PD-1 Restrains Radiotherapy-Induced Abscopal Effect. Cancer immunology research. 2015;3(6):610-9.

OC-0278 Radiation-induced lymphopenia: Fractionation effect and association with infections and mortality.

C. Terrones Campos[1], B. Ledergerber[1], I. Vogelius[2], M. Helleberg[1], L. Specht[2], J. Lundgren[1]
[1]Rigshospitalet, Department of Infectious Diseases- Centre of Excellence for Health- Immunity and Infections CHIP, Copenhagen, Denmark; [2]Rigshospitalet, Department of Oncology- Radiation Oncology Section, Copenhagen, Denmark

Purpose or Objective

Radiotherapy may cause lymphocyte depletion in cancer patients. We designed this study to identify whether the radiation dose and duration of radiation exposure, among other factors, are associated with the end of radiotherapy (EoRT) lymphocyte count; and to determine the association of radiotherapy-induced lymphopenia with the risk of acquiring subsequent infections and mortality.

Material and Methods

Consecutive patients with a non-hematological cancer diagnosis were included in the study if they had received their first course of external beam radiotherapy (EBRT) with curative intent at Rigshospitalet, University of Copenhagen, from 01 January 2005 to 31 December 2016; and had a pre-treatment lymphocyte count collected within one year of radiotherapy start and an EoRT lymphocyte count collected within six months after radiotherapy ended. The EQD2 for every radiation scheme was calculated assuming an α/β of 10. Factors associated with square-root transformed EoRT lymphocyte counts were identified using linear regression analysis, adjusting for cancer diagnosis and pre-treatment lymphocyte count, modelled as restricted cubic splines (tri-variable); and additionally, adjusting for age, gender and Charlson score (multivariable). Using negative binomial regression, the risk of acquiring a subsequent infection and mortality, according to the EoRT lymphocyte count, was determined after adjustment for age, gender, cancer diagnosis, and Charlson score.

Results

A total of 4,343 patients were studied. Compared to patients who received radiation schemes with EQD2 = 50-63 Gy delivered in 25-45 days, patients receiving a regimen with an EQD2 >63 Gy in <25 days (mostly NSCLC receiving stereotactic radiotherapy [77%]) had the highest predicted EoRT lymphocyte count (1,351 cells/μL 95% CI [1,210-1,492] vs. 804 cells/μL [774-834]; p<0.001), Figure 1. Radiation to multiple sites vs. single site (721 cells/μL [680-764] vs. 835 cells/μL [817-852]; p<0.001) and concomitant chemotherapy, particularly the use of platinum compounds vs. none (594 cells/μL [548-640] vs. 929 cells/μL [903-954]; p<0.001), also affected the EoRT lymphocyte count. An EoRT lymphocyte count <500 cells/μL was associated with both a higher risk for a new infection in the first year after EBRT (IRR=3.48 [2.54-4.77]; p<0.001) and death (IRR=1.31 [1.14-1.52]; p<0.001), compared to patients with an EoRT lymphocyte count >1,000 cells/μL, Figure 2.

Conclusion