constraints were violated we re-checked correspondence of the structures to the delineation standards of the Lungtech protocol. Association of violations and the prospectively recorded toxicity was evaluated.

Results: According to DVHs 111 SBRT plans did not violate any of the dose constraints requested in the Lungtech trial. For 7/100 patients SBRT plans exceeded the Lungtech dose constraint for the proximal bronchial tree of EqD2=74.8Gy to > 0.5cc, one of them additionally for the esophagus of EqD2=64 Gy. 6/7 patients showed an increase in dyspnea, 2 of them died 3 and 9 months after SBRT, one after hemoptysis and subsequent pneumonia, the other after being hospitalized for unclear progressive dyspnea; in both cases association of G2 toxicity to SBRT cannot be excluded. 26.3% (5/19) experienced grade 2-3, no grade 4 or 5 reactions. Data on late toxicity was available for 19 patients: observed in 18% of cases (11/61), G2 pulmonary toxicity was 25.8 Gy (<32), dose to 0.01 cc of CW was 59.1 Gy (>30/32) with no recorded episodes of ≥ grade 2 CW pain in these patients. 71.4% of plans exceeded dose constraint to 0.01cc CW (>37/39) only 5% (1/20) complained of CW pain, Dosimetric analysis for this patient revealed dose to 30cc of CW was 25.8 Gy (>32), dose to 0.01 cc of CW was 59.1 Gy (>39), volume of PTV and CW overlapping was 0.03 cc and % of PTV-CW overlapping was 0.21%.

Conclusion: While achieving low rates of moderate or severe toxicity. Despite achieving dose constraints, a small cohort of patients developed toxicity grade 2-3. We hypothesize that these patients could develop radiotherapy toxicity due to other idiosyncratic factors (genetic polymorphisms, microenvironment). Further studies are currently running to investigate other causative factors.

EP-1242
Stereotactic body radiation therapy for early stage NSCLC: clinical outcomes
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Purpose or Objective: The aim of this study is to evaluate efficacy and toxicity of stereotactic body radiation therapy in early stage medically inoperable non-small lung cancer.

Material and Methods: Data from patients affected by medically inoperable stage I NSCLC treated with stereotactic body radiation therapy (SBRT) were prospectively recorded. Treatments were planned employing 4D-CT . The prescribed dose was modulated according to location of the lesion and tolerance of the surrounding organs at risk: 54 Gy in 3 fractions for peripheral lesions, 60 Gy in 4 fractions for lesions adjacent to the chest wall, 60 Gy in 8 fractions for central lesions. The primary endpoints were local control and toxicity, secondary endpoint was survival. The follow-up examinations were performed with CT and/or PET-CT at 1, 3, 6, 9 and 12 months after treatment and every 6 months subsequently. Acute and late side effects were recorded according to RTOG morbidity Scoring Scale.

Results: From 2009 to 2014, 65 patients were treated. Mean patients’ age was 74 years (range 62-86). The lesions had a mean maximum diameter of 20 mm (range 10-36). All but seven patients were staged by PET-CT. 83% of cases lung cancer was histologically proven: 34 cases were adenocarcinoma, 15 squamous cell carcinomas, 5 undifferentiated carcinomas. In the last 11 patients biopsy was not performed because of high risk features for complications and/or patient’s refusal. In this last group 81% had a positive PET-CT and lesion growth documented at subsequent CT and just two patients had only lesion growth. Lesion’s location were as follow: RUL 25/65 (38%), RML 2/65 (3%), RIL 7/65 (11%), LUL 22/65 (34%) and LIL 9/65 (14%). Median follow-up in 61 evaluable patients was 40 months. Five local failure (8%) were recorded at a mean of 11.5 months from the end of treatment (range 5.3-22). PET-CT SUV was the only parameter predictive for local failure, with a mean value of 14,2 in the recurrence group versus 6,1 in the recurrence-free group, respectively; p=0.03. Local control at 1 and 2 years were 89.6% and 86%. Median DFS was 22.2 months and 1y-, 2y- and 3y- DFS were 66%, 68% and 47%, respectively. Lesions’ location according to treatment group was related to distant progression, which was significantly higher in peripheral location (p<0.004). Overall survival at 1y-, 2y- and 3y were 97%, 77% and 66%, respectively. Treatment was well tolerated. G1 asymptomatic pulmonary toxicity was observed in 18% of cases (11/61), G2 pulmonary toxicity was recorded in 3% of patients. There were no pulmonary toxicity grade 3-4. No other toxicities were reported.

Conclusion: SBRT is an effective and safe treatment for patients with medically inoperable stage I NSCLC. Local recurrence predictive value of PET-CT SUV could be investigated in bigger series.

EP-1243
A multicentre clinical trial using 3DCRT to reduce toxicity of palliative radiation for lung cancer
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Purpose or Objective: Radiation therapy in the palliation of intra-thoracic symptoms from locally advanced non-small cell lung cancer (NSCLC) is a significant component of workload in most radiotherapy departments. While most trials have