definitively established due to some controversial findings, the possible reasons of which demand further research with prospective and uniform protocols and analysis, great number of pts and adequate follow-up period.

**EP-1233**

Carbon ion radiotherapy for stage I non-small cell lung cancer: A Meta-analysis of 369 patients

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**Purpose or Objective:** To synthesize and compare available evidence considering the effectiveness of carbon-ion radiotherapy for stage I non-small cell lung cancer.

**Material and Methods:** To synthesize and compare available evidence considering the effectiveness of carbon-ion radiotherapy for stage I non-small cell lung cancer. Methods: A comprehensive search was conducted in the Cochran Library, PubMed, EMBASE, Web of Science and Chinese Biomedical Literature Database (from inception to Feb 2015). Selection of studies, and extracting data were performed by two reviewers independently. Outcomes were analyzed by random-effects model meta-analysis and reported as odds ratio (OR) with 95% confidence intervals (CI). The meta-analysis was conducted with STATA 12.0 software.

**Results:** Eight trials (369 patients) were included, the meta analysis showed that the one year local control rate (LCR) was OR=0.89 (95% CI: 0.81, 0.90), two years LCR was OR=0.81 (95% CI: 0.72, 0.89), three years LCR was OR=0.64 (95% CI: 0.55, 0.73), four years LCR was OR=0.23 (95% CI: 0.13, 0.33) and five years LCR was OR=0.70 (95% CI: 0.67, 0.73). The one year overall survival (OS) was OR=0.94 (95% CI: 0.88, 0.99), two years OS was OR=0.85 (95% CI: 0.70, 1.00), three years OS was OR=0.64 (95% CI: 0.50, 0.78), four years OS was OR=0.29 (95% CI: 0.18, 0.40) and five years OS was OR=0.34 (95% CI: 0.19, 0.49). The one year progression-free survival (PFS) was OR=0.79 (95% CI: 0.69, 0.89), two years PFS was OR=0.63 (95% CI: 0.52, 0.75), three years PFS was OR=0.39 (95% CI: 0.28, 0.51), four years PFS was OR=0.20 (95% CI: 0.10, 0.29) and five years PFS was OR=0.08 (95% CI: 0.02, 0.15). The recurrence was OR=0.46 (95% CI: 0.39, 0.53) and distant metastasis was OR=0.20 (95% CI: 0.14, 0.26).

**Conclusion:** Carbon beam radiotherapy, which is an excellent new modality in terms of a high local control and survival, may be a valid alternative to surgery for Stage I cancer, especially for elderly and inoperable patients.

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VMAT based lung ablative radiotherapy: primary lesions and metastases

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**Purpose or Objective:** Receiving Radio(chemo)therapy [R(C)T] for pulmonary tumors some patients have or develop necrosis or fistulae (N/F) within the area of the treated tumor. Partially such N/F result in fatal complications like mediastinitis or pneumonia whereas other affected patients achieve good local control rates with long term survival. But R(C)T. By retrospectively analyzing such cases we are aiming at identifying factors that might have an impact on the course of disease and should pre-therapeutically be considered in future.

**Material and Methods:** Retrospective analysis of patients coming up with N/F in temporal association with chest RT applied at the University Medical Center Freiburg from 2006 to 2013. Clinical and radiation parameters have been evaluated, acute and late toxicity, complications, clinical and imaging follow up have been assessed and will be analyzed with respect to local control and overall survival.

**Results:** We identified 40 patients irradiated for pulmonary malignancies (mainly centrally located NSCLC, UICC III/IV; 16 female, 24 male; median age 64 years; 15 squamous cell-, 15 adenocarcinoma, 10 other) who developed N/F in temporal association with chest RT. Intention of treatment was curative in 31 and palliative in 9 patients. 25 patients received R(C)T, 15 received RT alone with a median total dose of 54 Gy (14-72Gy). 26 patients revealed a necrotic primary tumor, 6 additionally necrotic lymph node metastases (LNM), 8 necrotic LNM, exclusively. In 34 lesions necrosis was found previous to RT, in 3 cases it occurred during, in 3 cases after RT.14 patients showed fistulae, all fistulae with esophageal or mediastinal involvement emerged after RT. For 6 patients G3, for 6 G4 toxicities have been reported, one patient died in consequence of an esophago-tracheal fistula. All patients with N/F-connection to the esophagus revealed toxicities G3, whereas some patients with centrally necrotic tumor and fistula without esophageal involvement revealed excellent long term follow ups. Median survival was 12.6 months (median FU 6.9 months). All patients with esophago-tracheal fistula died before reaching the median. Histology and location of the necrotic lesions didn’t show any significant impact on survival.

**Conclusion:** R(C)T of pulmonary malignancies for patients with N/F can be associated with high toxicity. One essential factor with impact on the clinical course seems to be the...