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Introduction. In 2008 a prospective Phase II trial for Stage I NSCLC using SBRT technique started in our institution. We present our results in term of local control and toxicity after 2 years of follow up.
Objectives. Main aim of this phase II trial was to evaluate the technique in terms of local control and toxicity after 2 years .
Materials and methods. Forty-three patients were enrolled. Thirty eight patients were analysed and five patients were excluded of the analysis (three because histology showed non primary lesions of the lung, and 2 because conformality index were higher than 1.4) All the patients were evaluated in a tumor board. Patients signed informed consent after check inclusion criteria. Patients receive 4DCT scan to plan the treatment. Vacuum mattress and thermoplastic masks were used to immobilize patients. Mean age 74 (52–89), Gender distribution: Men 36p (94.74%), women 2 (5.26%), Histology: NSCLC 10p (26.3%), Adenocarcinoma 15p (39.5%), Squamous Carcinoma 12p (31.6%), Indifferentiated carcinoma 1p (2.6). Stage: T1 No Mo 24p (63.2%), T2 N0 M0 13p (34.2%), T3 NO MO 1p (2.6%). Dose prescribed to the PTV was 54 Gy in three fractions. Normalization was D95 = 100%. Clinical and dosimetric data were collected prospectively. Criteria of reponse Local failure was defined as a progression inside of PTV, regional failure as a progression in the area included between PTV and 1 cm from it, and distant failure as a progression from more than 1 cm of the PTV.
Results. After 2 years of follow up (r4–45 m), we found 3 cases of dyspnea GIII (7.9%), 2 (5.2%) cases of rib fracture GI, 1 case (2.6%) of dyspnea GIV who also presented dermatitis GIII. Local control of 96.4% (89–100), peripheral control of 89.7% (74–98%) and distant control of 87.7% (65.6–93%). Overall survival of 79.10% (IC 64–94.2).

http://dx.doi.org/10.1016/j.rpor.2013.03.317

SBRT in the treatment of NSCLC stages I–II

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Introduction. The SBRT has proven efficacy in the control of NSCLC patients with early stages (cT1-2N0MO) medically inoperable and not feasible to treatment with EBRT a standard dose.
Material and methods. From July 2010 to December 2012, 30 p. were treated at a dose of 54 Gy in 3 fractions for peripherical lung tumors and 45–50 Gy for centrals tumors in 5 fractions. Because CT planning is done in 3D, SBRT was limited to upper lung tumors.
Results. Lung location was 15 rights and 15 left of which 18 peripheral and 12 central. Sex distribution: 23 men, 7 women. Stage I in 21 p. and 9 p. with Stage II, 1 patient with a isolated pulmonary metastases from rectal cancer. The most common histology was squamous (10), then the adenocarcinoma (6) and indifferentiated tumor (5). Note that 8 p. treated without histology (2 CT's with tumor growth and abnormal uptake PET). The dosimetry was made to the planning system (CMS, XIO v 4.0). Overall survival was: mean 22,6 months(CI: 18.8–26.4), median 24.0 months (CI: 17.5–30.4), 86% at 12 months and 53% at 24 months. Disease-free survival: mean 22.3 months (CI: 17.7–26.9), median not reach, 72% at 12 months and 59% at 24 months, with local control of 86%. There were no severe acute toxicities, only some minor toxicities such as flu-like syndrome, asthenia, and 1 case of asymptomatic rib fracture.
Conclusions. In our experience, SBRT is a good therapeutic alternative with a low toxicity profile, for those patients with early-stage lung neoplasms not feasible surgical treatment.

http://dx.doi.org/10.1016/j.rpor.2013.03.318