early stage NSCLC

COMPARISON OF CLINICAL OUTCOME OF STAGE I NON-SMALL CELL LUNG CANCER TREATED SURGICALLY OR WITH STEREOTACTIC RADIOTHERAPY: RESULTS FROM PROPENSITY SCORE ANALYSIS

S. Mokhles1, N.E. Verstegen2, A.P. Maat1, O. Birim1, A.J. Bogers1, M.M. Mokhles1, F.J. Lagerwaard2, S. Senan2, J.J. Takkenberg1

1Dept of Cardio-Thoracic Surgery, Erasmus University Medical Center, Rotterdam, Netherlands
2Dept of Radiation Oncology, Vrije University Medical Centre (VUMC), Amsterdam, Netherlands

Aim: Guideline-specified curative therapies for a clinical stage I non-small cell lung cancer (NSCLC) are either lobectomy or Stereotactic Ablative Radiotherapy (SABR). As outcomes of prospective randomized clinical trials comparing these modalities are unavailable, we performed a propensity-score matched analysis to create two similar groups in order to compare clinical outcomes. The outcome of this analysis will provide more information on treatment options for stage I NSCLC patients.

Methods: We selected 577 patients, 96 VATS or open lobectomy were treated at Erasmus University Medical Center Rotterdam and 481 SABR patients were treated at VU University Medical Center Amsterdam with clinical stage I NSCLC. Toxicity and complications were scored according to Common Terminology Criteria for Adverse Events version 4.0.

Results: Matching of patients according to propensity score resulted in a cohort that consisted of 73 patients in the surgery group and of 73 patients in the SABR group. Median follow-up in the surgery and SABR group was 49 months and 28 months, respectively. In SABR patients no treatment-related deaths were observed and late side effect grade-3 was observed in one patient. In the surgical group one patient died due to renal failure and pseudomonas infection and 5 patients needed additional intervention. Overall survival of patients who underwent surgery was 95% and 80% at 12 and 60 months, respectively. For the SABR group this was 94% at 12 months and 53% at 60 months. After 3 years there seems to be a trend toward improved survival in patients who were treated surgically. No statistical significant difference (p = 0.089) in survival was found between these groups.

Conclusions: In this study we found no significant differences in overall survival in propensity matched patients diagnosed with stage I NSCLC treated either surgically or with SABR. The observation that overall survival diverged after 3 years requires further research to elucidate the determinants of prognosis in relation to treatment options for patients with stage I NSCLC, in order to facilitate patient-tailored treatment selection and optimize clinical decision making.

Disclosure: S. Senan: S.Senan received speakers honoraria from Varian Medical Systems. All other authors have declared no conflicts of interest.