item EORTC QLQ-C30, its corresponding 13-item lung cancer supplement, and the EuroQol disease-generic questionnaire. Indirect costs of productivity loss were evaluated using the short form health and labor questionnaire, which includes work absences, reduced efficiency at work, and substitution for unpaid work. Time to deterioration (TTD) in HRQOL was calculated from time to randomization to first appearance of clinically significant change. TTD was analyzed using Cox proportional hazard models. The Embase and MEDLINE databases were systematically reviewed to obtain English language articles investigating patient-reported HRQOL after SABR for ES-NSCLC up to August 1, 2015. Review articles, meta-analyses and decision analyses were excluded. Relevant data regarding patient characteristics and study outcomes were abstracted and analyzed.

Results: In the ROSEL study, only TTD of global health status was significantly worse on univariable modeling for surgical patients compared to SABR (HR 0.19, p = 0.038). Indirect costing analysis revealed lower total productivity costs to society for SABR compared to surgery ($95 versus and $3,513, p = 0.044). Patients reported a lower total degree of hindrance in paid and unpaid work for SABR compared to surgery (mean hindrance scores: for SABR 6.0, for surgery 9.1, p = 0.019). In the systematic review, nine out of 204 potential studies met all inclusion criteria and were analyzed. All studies were prospective in design. Overall SABR appeared to be well-tolerated, in a mostly medically inoperable patient population. Clinically and statistically significant deteriorations in fatigue and dyspnea were individually reported in two studies. An isolated report found clinically and statistically significant improvements in emotional functioning over time. Deterioration in dyspnea and physical functioning were noted in other studies, but were neither statistically nor clinically significant.

Conclusions: SABR is an overall well-tolerated modality in patients with ES-NSCLC who either declined surgery or were unfit. Exploratory results in operable ES-NSCLC suggest that SABR may be better tolerated than surgery and incur indirect costing savings. Future clinical trials comparing SABR and surgery would benefit from the inclusion of HRQOL metrics in study design.

157 A PHASE II TRIAL MEASURING THE INTEGRATION OF STEREOTACTIC ABLATIVE RADIOTHERAPY (SABR) PLUS SURGERY IN OPERABLE PATIENTS WITH EARLY NON-SMALL CELL LUNG CANCER (LSNCLC): INTERIM SAFETY RESULTS

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Purpose: SBRT is an alternative treatment to surgery for Stage I NSCLC. Intriguingly, NSCLC lesions post-SBRT rarely exhibit a complete response locally and yet yield excellent local control of around 95%. The degree of treatment response seems to have little effect on in current practice. This study investigated tumour response post-SBRT as a clinical outcomes predictor in Stage I NSCLC patients.

Methods: Survival outcomes of 233 patients were reviewed retrospectively from Sunnybrook Electronic Patient Record. Tumour sizes were collected from radiologist’s measurements based on CT-Scan pre and post-SBRT within 6, 12, and 18 months intervals. Each patient’s maximum response within 18 months was calculated and grouped using RECIST 1.1 methodology: complete response (CR), partial response (PR), stable disease (SD), and progressive disease (PD).

Results: The median age of study population was 77.5 years. Median follow up duration was 25 months. Local control (LC), overall survival (OS), and non-local control (NLC) for all patients at two years were: 92.5, 74.6, and 68.0% respectively. Of patients with available pre and post-SBRT tumour sizes (n = 188), 11 (5.9%), 92 (48.9%), and 79 (42.0%), and six (3.2%) patients were categorized CR, PR, SD, and PD respectively using RECIST 1.1 methodology. LC were: CR (100%), PR (94.0%), SD (89.7%), and PD (66.7%) respectively after two years. OS were: CR (80.0%), PR (80.8%), SD (72.0%), and PD (44.4%) respectively. NLC were: CR (100%), PR (66.4%), SD (62.5%), and PD (16.7%) respectively. There is a statistically significant difference in NLC between groups (p = 0.0009).

Conclusions: Stage I NSCLC patients with a lesser response post-SBRT are at higher risk of developing non-local recurrences. These patients may benefit from closer follow up and adjuvant treatment post-SBRT.

159 PHASE I STUDY OF NEO-ADJUVANT STEREOTACTIC BODY RADIOTHERAPY (SBRT) IN OPERABLE PATIENTS WITH BORDERLINE RESECTABLE LOCALLY ADVANCED NON-SMALL CELL LUNG CANCER (LA-NSCLC) (LINNEARRE I STUDY: NCT02433574)

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Purpose: In patients undergoing surgery for Stage I NSCLC, the delivery of neoadjuvant SABR has been proposed as a method of improving oncologic outcomes. A Phase II trial was launched to evaluate oncologic outcomes, pCR rates, and toxicity after SABR followed by surgical resection. The protocol mandated an interim safety analysis after completion of combined treatment in the first 10 patients.

Methods and Materials: Operable patients with biopsy-proven T1-2N0M0 NSCLC eligible. SABR was delivered using a risk-adapted fractionation (54 Gy/3 fractions, 55/5 fractions or 60/8 fractions, all with biologically effective dose > 100 Gy10), prescribed to the ~80% isodose line covering the planning target volume. Surgical resection was planned 10 weeks later, either lobectomy or sublobar resection, at a high-volume tertiary centre completing more than 200 lung cancer resections annually. Patients were imaged with dynamic FDG-PET CT and dynamic contrast enhanced CT before SABR and again before surgery. Toxicity was recorded using CTCAE version 4.0.

Results: Twelve patients were enrolled between September 2014 and September 2015. Two did not undergo surgery after SABR due to patient or surgeon preference; neither patient had developed toxicity or recurrence. For the 10 patients completing both treatments, median age was 70 (range 54-76), 60% had T1 disease, and 60% had adenocarcinoma. Median FEV1 was 73% predicted (range 54-87%). Median time to surgery post-SABR was 10.1 weeks (range 9.3-15.6 weeks). Surgery consisted of lobectomy (n = 8) or wedge resection (n = 2). Median follow up post-SABR was 6.3 months. After combined treatment, the rate of Grade 3-4 toxicity was 10% (one patient with pneumonia, atrial fibrillation, and respiratory failure [post-operative re-intubation due to mucus plugging], all resolved). Seven patients developed Grade 2 toxicities. Thirty- and 90-day mortality post-surgery were both 0%.

Conclusions: Toxicity rates after SABR + surgical resection compare very favourably with reported rates in prospective studies of surgical resection alone (~48% Grade 3-5 toxicity after lobectomy [1] and ~30% after wedge resection [2]). Mature data on pCR rates and oncologic outcomes from this combined modality strategy are awaited.