varied from 0 to 46.8% (median 4.2%) in the primary tumour. The Tmax/Mean ranged from 1.37 to 4.23 (median 1.98). There was no correlation between lesion size and SUVmax or between lesion size and HF, which suggests that larger tumours are not necessarily more hypoxic than smaller tumours. A significant correlation between Tmax/Mean and HF was observed (rho = 0.83, p < 0.001), and between SUVmax and HF (rho = 0.74, p = 0.004). This may suggest that tumours with a higher SUVmax (ie. higher intensity of hypoxia) also have a larger proportional volume of hypoxia.

Conclusions: 18F-FAZA PET scans provide a feasible non-invasive method to assess NSCLC tumour hypoxia. A hypoxic volume, as detected by 18F-FAZA PET, was present in the majority of NSCLC patients in our study. Ongoing trial accrual and follow up of our patient cohort will provide more information with regards to the imaging and clinical value of 18F-FAZA PET, and we hope to correlate these imaging metrics with clinical outcomes.

DEVELOPMENT OF PROVINCIAL PALLIATIVE RADIOTHERAPY GUIDELINES

Derek Tilley1, Marc Kerba2, Xanthoula Kostaras3, Alysa Fairchild4
1Alberta Health Services, Calgary, AB
2University of Calgary, Calgary, AB
3University of Alberta, Edmonton, AB
4University of Alberta, Edmonton, AB

Purpose: Radiotherapy (RT) practice variability in the palliative setting is well-documented. Clinical practice guidelines inform standardized, evidence-based, beneficial practice, while simultaneously discouraging unnecessary or potentially harmful practices. The process of creating provincial palliative RT clinical practice guidelines is associated with multiple challenges. We describe the unique approach required in aligning multidisciplinary goals as compared to traditional tumour site-specific guidelines.

Methods and Materials: Radiation oncologists from the provincial Palliative Care Tumour Team, along with guideline specialists from the Guideline Resource Unit, formed the primary guideline working group tasked with updating the Palliative RT guidelines. Tumour site specific representatives (ex. Central Nervous System Tumour Team) were incorporated as needed, as well as experts in supportive care, on a guideline by guideline basis. For each guideline, a systematic literature review was conducted to identify relevant evidence. Recommendations were initially developed within the primary working group, then revised in collaboration with experts from other disciplines. Once working group consensus was reached, guideline recommendations were circulated to all radiation oncologists and Palliative Tumour Team members for input. After several rounds of feedback and modifications, provincial consensus was reached.

Results: Initially, one RT guideline had been created for all provincial palliative RT recommendations. These guidelines have since been split into smaller, more functional palliative RT guidelines: 1) Brain Metastases; 2) Bone Metastases and Spinal Cord Compression; 3) Bleeding and Gastrointestinal Obstruction; and 4) Superior Vena Cava Obstruction, Dyspnea, and Hemoptyisis. The majority of recommendations were either modified or new due to advancements in research or changes in consensus based approaches. In total, 70 recommendations were approved. Recommendations were supported by a range of evidence from high (level one evidence) to low quality (consensus opinion).

Conclusions: By combining the newly updated palliative RT guidelines with an educational intervention, variations in practice may be mitigated. Using our model, similar efforts can be undertaken in other jurisdictions.

SYSTEMATIC REVIEW OF PATIENT REPORTED QUALITY OF LIFE FOLLOWING STEREOTACTIC ABLATIVE BODY RADIOTHERAPY FOR PRIMARY AND METASTATIC LIVER CANCER

Adam Mutsaers, Jeffrey Greenspoon, Cindy Walker-Dilks, Anand Swaminath
McMaster University, Hamilton, ON

Purpose: Stereotactic ablative body radiotherapy (SABR) is an emerging modality in patients with liver cancer who are ineligible for other local therapies. It has been shown to be effective with respect to long-term tumour control with minimal toxicity. However SABR for liver cancer is not current standard of practice despite its potential promise. In order to validate increased offering of this promising therapy, objective systematic data regarding impact on quality of life (QOL) is required. No systematic reviews to date have been performed to analyze QOL for primary or metastatic liver cancers. QOL metrics are a critical part of therapy evaluation, particularly in disease states with short life expectancy. The purpose of this study was to conduct a systematic review of evidence surrounding QOL for liver SABR.

Methods and Materials: MEDLINE and EMBASE databases from 1996 to October 2015 were queried to obtain English language studies analysing QOL following SABR for liver cancers. Included studies involved patient-reported QOL as either a primary or secondary endpoint, along with analysis of QOL change over time. Studies were screened by three reviewers, while relevant data were abstracted and analyzed by a single reviewer. Results: Of 2181 initially screened studies, five met all inclusion criteria and were analyzed. Extracted study dates ranged from 2008 to 2015, included a total of 388 eligible patients, and 4/5 studies were prospective in design. All were published studies, with the exception of one conference abstract. Studies included patients with hepatocellular carcinoma, liver metastases and intrahepatic cholangiocarcinoma. Extracted studies were heterogeneous in dose prescription used (11-70 Gy in 3-30 fractions), as well as in QOL metrics (EORTC QLQ C-15 PAL,/C-30/LM-21, Euroqol 5D, FACT-Hep, FLIC) and final endpoints (range: six weeks to 12 months). Despite this there were few clinically or statistically significant declines in QOL scores following SABR. Four studies demonstrated increased fatigue transiently in the first 1-4 weeks, while two studies showed transient worsening of appetite at one month; both metrics returned to insignificant difference from baseline by the final endpoints. All studies showed no significant decline in QOL at their respective endpoints. In studies with overlapping QOL tools, estimates of three-month post-SABR global QOL were similar.

Conclusions: Results of this systematic review demonstrate well-preserved post SABR QOL in patients with otherwise untreatable liver cancer, despite heterogeneity amongst the individual studies themselves. These findings merit further research to increase data collection, to validate QOL tools specific to SABR for liver cancers, and to support comparative effectiveness trials of SABR with other local modalities in liver cancer including surgery, chemoembolization and radiofrequency ablation, with a focus on QOL outcomes as an important endpoint.

A SYSTEMATIC REVIEW OF METHODOLOGIES, ENDPOINTS AND OUTCOME MEASURES IN PHASE III RANDOMIZED TRIALS OF INTERVENTIONS FOR RADIATION THERAPY-INDUCED NAUSEA AND VOMITING

Kristopher Dennis1, Rehana Jamani2, Leila Makhani3, Henry Lam4, Carlo De Angelis5, Patrick Ciesielski6, Natalie Coburn7, Shun Wong3, Edward Chow4
1University of Ottawa, Ottawa, ON
2Queen's University, Kingston, ON
3University of Toronto, Toronto, ON
4Sunnybrook Health Sciences Centre, Toronto, ON
5Jagiellonian University Medical College, Krakow, Poland
Purpose: Clinical trials in radiation therapy-induced nausea and vomiting (RINV) appear to have varied methodologies, endpoints and outcome measures. This variability hinders implementation of trial results. A comprehensive analysis of RINV trial design elements is lacking.

Methods and Materials: Ovid versions of the Cochrane Central Register of Controlled Trials, the Cochrane Database of Systematic Reviews, EMBASE and MEDLINE to first quarter 2011 were searched for randomized trials of RINV management strategies.

Results: From 599 references in the initial database search we selected 34 trials for analysis that collectively randomized 4529 patients. Twenty-eight trials (82%) were published prior to the year 2000. Twenty-seven trials (79%) involved multiple fraction radiotherapy to abdomen/pelvis and TBI. Future RCTs should investigate the efficacy of newer agents such as aprepitant in addition to 5HT3 RAs in prophylaxis of RINV during both acute and delayed phases.

172 FEASIBILITY AND UTILITY OF PATIENT REPORTED OUTCOME COLLECTION IN A PROVINCIAL PROGRAM

Robert Olson1, Fuchsia Howard2, Vincent Lapointe1, Devin Schellenberg3, Alan Nichol4, Douglas Otier4, Gale Bowering4, Susan Curtis4, Alison Walter5, Steven Brown6, Corrine Thompson4, Jackie Bergin7, Sheri Lomas3, Ross Halperin8, Wayne Beckham9

1British Columbia Cancer Agency, Prince George, BC
2University of British Columbia, Vancouver, BC
3British Columbia Cancer Agency, Vancouver, BC
4University of British Columbia, Surrey, BC
5British Columbia Cancer Agency, Abbotsford, BC
6British Columbia Cancer Agency, Surrey, BC
7British Columbia Cancer Agency, Kelowna, BC
8University of Victoria, Victoria, BC
9British Columbia Cancer Agency, Vancouver, BC

Purpose: The British Columbia Cancer Agency radiotherapy (RT) program started the Prospective Outcomes and Support Initiative (POSI) at all six centres in 2013 to collect and utilize patient reported outcomes (PROs) for immediate clinical care, quality improvement, and research. We sought to explore the feasibility and utility of using PRO two years after the start of POSI.

Methods and Materials: PROs were collected at time of CT simulation via tablet or radiation therapist questions, and 2-4 weeks post-RT over the phone with a registered nurse (RN). Descriptive Statistics were used to present accrual and utility of PRO data. Comparison in accrual rates between categories was performed with chi square tests. Mean differences in time that RNs spent on POSI phone calls were compared with t-tests. Multivariable logistic regression modeling identified factors associated with successful accrual.

Results: From May 2013 to July 2015, 2849 patients were approached by POSI on 5,847 occasions for patients treated with RT for bone metastases (81%), brain metastases (12%), and incurable lung cancer (7%). The accrual rate for all encounters was 76% (n = 4904), ranging from 73% to 87% depending on cancer centre (p < 0.001), and highest amount patients with bone metastases (65%; p < 0.001). Patients were significantly less likely to be successfully accrued at follow up compared to baseline (OR = 0.21; 95% CI = 0.18 - 0.24; p < 0.001). From this database we have demonstrated similar results for bone metastases (OR = 0.30; 0.41 - 0.1; p < 0.001). During the study period RNs made 2042 telephone follow up calls, totaling 250 RN hours, to both collect PRO, and subsequently use these PRO to guide follow up care. The RN-reported mean time to complete the follow up call was highest with brain metastases (13.1 minutes) compared to lung cancer (8.2 minutes) and bone metastases (6.7 minutes), which was highly significant (p < 0.001). The accrual rate for all encounters was 76% (n = 4904), ranging from 73% to 87% depending on cancer centre (p < 0.001), and highest amount patients with bone metastases (65%; p < 0.001). Patients were significantly less likely to be successfully accrued at follow up compared to baseline (OR = 0.21; 95% CI = 0.18 - 0.24; p < 0.001). From this database we have demonstrated similar results for bone metastases (OR = 0.30; 0.41 - 0.1; p < 0.001).