

Conclusions: EPIC-CP was highly endorsed from healthcare practitioners and prostate patients across participating cancer centres. The EPIC-CP tool captures prostate-specific symptom information that assists in enhancing clinical care and symptom management. Provincial roll-out of EPIC-CP as a standard of care for PROs in clinical practice is recommended.

36

INCREASING USE OF ACTIVE SURVEILLANCE AMONGST RADIATION ONCOLOGISTS IN CANADA

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Purpose: To determine the preferences of radiation oncologists in Canada for treatment of low-risk and intermediate-risk prostate cancer in an era when no "gold standard" has been defined.

Methods and Materials: A 20-item email questionnaire was sent to all practising radiation oncologist in Canada. Responses were collected over a four-week interval and are reported anonymously as aggregate.

Results: Thirty-three responses were collected from 10 provinces. All but two respondents treated prostate cancer routinely and saw between six and 30 new patients per month. Seventeen out of 31 (55%) prostate cancer treating respondents indicated they recommended active surveillance (AS) more frequently now compared to five years ago, whereas eight (26%) have not made a change in practice. Twenty-two (68%) respondents cited the Klotz criteria (PSA \leq 10ng/mL, Gleason score of \leq 6 or age \geq 70 years and PSA \leq 15 and Gleason score of \leq 3 + 4) or patient preference as reasons for offering AS. Twenty-five (81%) would first recommend AS for low-risk prostate cancer. Almost all respondents would take the patient off AS for disease progression of any type (pathologic, clinical, or biochemical) or if the patient decided for treatment with no progression of disease. Twenty-two (69%) felt radical prostatectomy (RP) and brachytherapy (BT) were equivalent. Two (6%) felt cure rates were better with RP and eight (25%) felt BT cure rates were better. Eighteen (56%) of respondents would only recommend BT to patients with intermediate-risk prostate cancer; nine (28%) would outline options of BT, RP and external beam radiotherapy (EBRT). If BT was not a treatment option, then 18 (56%) respondents would support RP over EBRT.

Conclusions: This survey confirmed that AS is more strongly favoured across Canada by radiation oncologists who treat low and select intermediate-risk prostate cancer. BT and RP continue to be the preferred recommendations. There was a bias towards belief that BT cure rates are better despite the lack of randomized evidence. EBRT is felt by most to be less curative than either RP or BT.

37

RESULTS OF A PHASE I/II TRIAL OF 5 FRACTION STEREOTACTIC RADIOSURGERY WITH CONCURRENT AND ADJUVANT TEMOZOLOMIDE IN NEWLY DIAGNOSED SUPRATENTORIAL GLIOBLASTOMA MULTIFORME

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Purpose: To determine the maximum tolerated dose (MTD) of 5 fraction stereotactic radiosurgery (SRS) delivered with concurrent and adjuvant temozolomide (TMZ) in newly diagnosed glioblastoma multiforme (GBM).

Methods and Materials: Adult patients with newly diagnosed GBM were treated with escalating doses of SRS in a 3+3 design on 4 dose levels: 25 Gy, 30 Gy, 35 Gy, and 40 Gy targeting the cavity/residual tumour with a 5 mm CTV margin and 0 mm PTV. There were 2 arms per PTV size: < 60 cm³ (Arm 1) and 60-150 cm³

(Arm 2). A dose limiting toxicity (DLT) was defined as CTCAE Grade 3-5 CNS toxicity within 30 days of SRS, with life-long assessment for late SRS-related adverse radiation effect (ARE). The maximum tolerated dose (MTD) was the highest dose where 0-1 out of six had an acute or late CNS Grade 3-5 toxicity. Secondary endpoints included progression free survival (PFS) and overall survival (OS). Given the difficulty in interpreting post-SRS imaging, any new enhancement was scored as: 1) tumour progression, if ultimately determined to be recurrent tumour (PD); 2) transient ARE if occurred within five months and resolved (i.e., pseudoprogression, PP); 3) persistent ARE (i.e., radionecrosis, RN). All AREs were scored per CTCAE.

Results: From 2010 to 2015, 30 total patients were enrolled. The median age was 66 with median KPS of 80. The median GTV was 26.8 cc (range 3.8-81.0 cc) with a PTV of 60.2 cc (range 14.7-137.3). Protocol defined DLTs occurred in 2 patients: one admitted for PD at 3 weeks (Grade 4, Arm 2, Dose 40 Gy); another patient died 1.5 weeks post-SRS from suspected post-operative complications (Grade 5, Arm 1, Dose 40 Gy). AREs occurred in 11 patients: five cases of PP occurring at a median time of 2.8 months from SRS (range 0.8-3.4); 6 cases of RN (Grade 1 n = 2, Grade 2 n = 4) at 6.9 months (range 3.2-12.6). All patients with PP and all but one with RN had MGMT methylated tumours. Extent of resection (HR 0.19) and MGMT methylation (HR 0.36) were associated with improved OS on multivariate analysis. RN was not associated with increase in dose, GTV or PTV volume. Ultimately, 25 (83%) of patients were treated with bevacizumab, started in 17% for symptomatic transient ARE, 6% for persistent ARE, and 60% for PD. With a median follow up of 12.9 months, the median OS for all patients was 15.0 months, with a median PFS of 6.37 months. Median OS was 20.0 months for patients with MGMT methylated tumours, versus 11.3 months for MGMT unmethylated (p = 0.046). Presence of RN was associated with improved median OS (33.2 versus 11.3 months; p = 0.024). Amongst MGMT methylated patients who developed RN, median OS was 33.5 versus 16.9 months for those without RN (p = 0.10). **Conclusions:** The primary endpoint of dose escalation to 40 Gy was achieved without severe treatment-related toxicity. However, a dose recommendation based on tumour size cannot be made. These results suggest that SRS with concurrent TMZ constitutes a safe and feasible treatment for GBM with OS comparable to conventional fractionation.

38

IS FOLEY CATHETER AN ADEQUATE SURROGATE FOR URETHRA WHEN PLANNING HIGH-DOSE RATE PROSTATE BRACHY THERAPY?

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Purpose: To assess adequacy of a Foley catheter for urethral delineation for evaluation of urethral dose in high-dose rate prostate brachytherapy (HDR-PB).

Methods and Materials: Twenty-one sets of prostate ultrasound images were recorded with and without a Foley catheter in place. The first images were obtained during HDR-PB for intraoperative planning with a Foley catheter in-situ. A standard 6mm-diameter circle was used to delineate the catheter on transverse images, assuming that it represented the urethra. Dosimetric optimization parameters were Prostate V100% \geq 98%, V125%: 55-62% and D90% \geq 100% and urethral V115% = 0 cc. After treatment, another set of images was recorded after removing the catheter and instilling aerated gel into the urethra without removing the brachytherapy needles or changing the patient's position. The images were fused using either Vitesse3.0 or BrachyVision11.0. Urethral dosimetric parameters, position and volume of the urethra were compared. Paired Student's t-tests were performed for statistical analysis.

Results: Images were recorded on 16 intermediate to high-risk prostate cancer patients who received HDR-PB boost combined with 46 Gy/23 fractions external beam radiotherapy. Eight had two fractions of 10 Gy in separate implants and the remaining eight received 15 Gy in one fraction. Twenty-one paired sets of