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## Stereotactic Ablative Radiotherapy for the Management of Neuroendocrine Liver Metastases

*J. Hudson[1], H. Chung[1], W. Chu[1], A. Taggar[1], L. Davis[2], J. Hallet[3], C. Law[3], S. Singh[4], S. Myrehaug[1]; [1]Radiation Oncology, Odette Cancer Centre, Sunnybrook Health Sciences Centre, University of Toronto, ON/Canada, [2]Epidemiology, Biostatistics and Occupational health, McGill University, QC/Canada, [3]Surgical Oncology, Odette Cancer Centre, Sunnybrook Health Sciences Centre, University of Toronto, ON/Canada, [4]Medical Oncology, Odette Cancer Centre, Sunnybrook Health Sciences Centre, University of Toronto, ON/Canada*

**BACKGROUND:** The role of stereotactic ablative radiotherapy (SABR) is not well understood in well-differentiated neuroendocrine liver metastases (WD-NELM). We evaluated the safety and efficacy of SABR in treating this unique patient population.

**METHODS:** Retrospective review of patients with WD-NELM treated with SABR spanning January 2015 to July 2019. RECIST 1.0 criteria were applied to each individual target to evaluate the overall response rate (ORR). Local control (LC) and progression free survival (PFS) were determined using Kaplan-Meier methodology. Toxicity was reported using CTCAE v 5.0 criteria.

**RESULTS:** Twenty-five patients with 53 liver metastases treated with SABR were identified. Median number of metastases treated per patient was 2 (range: 1-4); median size 2.5 cm (range 0.7-9.7 cm). Median radiation dose delivered was 50Gy/5 fractions (range 25Gy/5 - 60 Gy/3); median biologically effective dose ($BED_{10}$) was 100 (range 39-180). Median follow-up was 14 months (range 2-54 months). Most patients (68%) had midgut tumors (small bowel, pancreas), were Grade II (80%) and had high volume intrahepatic and/or extrahepatic disease (76%). Almost all patients (96%) remained on systemic somatostatin analogues despite radiographic disease progression. Six targets underwent pseudoprogression. Best treatment response according to changes in axial diameter was -100% (median: -16%, range: -100% to 47%). ORR was 32%, with initial disease improvement or stability in 96% of all lesions treated. Median time to best response was 9 months (range: 3-16 mos). The 1-year LC and PFS were 92% (CI 85-99.9%) and 44% (CI 28-70.1%) respectively. No Grade III/IV acute or late toxicity was identified.

**CONCLUSION:** Liver SABR is a safe and effective means of providing LC for WD-NELM. This treatment modality should be considered in select patients in concert with systemic treatment.

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