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Antitumor Efficacy of Concurrent Everolimus with Hepatic Transarterial Bland Embolization (Evero-Embo) in Patients with Metastatic Well Differentiated Neuroendocrine Tumor (NET)

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BACKGROUND: Hepatic transarterial embolization (TAE) is effective loco-regional therapy for neuroendocrine tumor (NET). Systemic targeted therapies, such as everolimus & sunitinib, are typically held 2-4 weeks prior to and after procedures. The safety of evero-embo has been previously reported (GI-ASCO). TAE induces anoxic injury while everolimus effects cell growth, proliferation and survival. Combining these two modalities may result in clinical synthetic lethality effectively debulking significant hepatic disease and/or delaying progression. Historically bland TAE has a median hepatic progression-free survival of ~nine months. In this study, the clinical efficacy of evero-embo is examined.

METHODS: Clinical and radiographic data were reviewed for all sequential patients who underwent evero-embo between 9/2016 and 4/2018 at the University of Kentucky Markey Cancer Center. An independent radiologist performed response evaluation criteria in solid tumors (RECIST) measurements. To be included in this study, patients were required to have had systemic everolimus for ≥ one month prior to embolization and to be on everolimus immediately post procedure. Patients with at least 12 months post procedure follow-up were included for efficacy review.

RESULTS: Fifty-one TAEs with concurrent systemic everolimus were performed in 34 NET patients. Twenty-one of 24 patients were noted to have a partial response; the remainder had stable disease. Hepatic progression was not observed. Twenty-one of the 34 patients had 12 or more months of follow-up post procedure (median of 17 months). None of these 21 patients had hepatic progression.

CONCLUSION: Evero-embo results in a partial response rate of 62% and may have significant antitumor activity when compared to bland TAE in NET patients. With a median follow-up of 17 months, hepatic progression has not occurred in any patient. Additional follow-up is necessary to compare the median hepatic progression free survival (PFS) of evero-embo to the historical drug-eluting bead TAE PFS.