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Evaluation of long-term hepatic adverse events in patients receiving Peptide Receptor Radionuclide Therapy (PRRT) following BLAND embolization

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BACKGROUND

Clinicians are concerned about increased hepatotoxicity in patients who received hepatic artery bland embolizations (TAE) and subsequent Peptide Receptor Radionuclide Therapy (PRRT). The body of literature describing the safety of PRRT following prior TAE is very limited. The purpose of this study is to evaluate the degree of long-term liver toxicity in patients who received PRRT in addition to previous hepatic embolizations for liver dominant disease.

METHODS

Retrospective review was conducted for mNET patients who received at least 1 cycle of PRRT with 177Lu-DOTATATE between 4/2018 and 02/2022 with and without prior hepatic bland embolization (TAE). Patients were followed for at least 6 months after their last PRRT cycle. Most recent clinical, imaging and laboratory findings including hepatic CTCAE v5.0 were compared to pre-PRRT.

RESULTS

238 patients (126 M, 112 F, mean age=64) with mNET (G1:78, G2:137, G3:19, unknown: 27) of different primary sites (12 foregut, 137 midgut, 11 hindgut, 60 pancreas, 1 lung, 17 unknown) underwent at least 1 cycle of PRRT. 171 patients had at least 6 months of follow-up, 110 of whom were embolization naïve and 61 who had prior TAE. Median follow up was 22 months (range: 6-43). Patients with prior TAE had higher liver tumor burden on average (<25%: 40, 25-50%: 16, 50%+: 5) than patients without prior TAE (<25%: 90, 25-50%: 15, 50%+: 5) (p=0.058156). 7 patients in TAE naïve group exhibited long-term G3 hepatotoxicity (bilirubin, AST, ALT, ALP) compared to 6 patients who had prior TAE (bilirubin, AST, ALP) (p=0.4118). Similarly, there was no significant difference in grade 4 hepatotoxicity between cohorts; 2 patients in the TAE naïve group had G4 hepatotoxicity (bilirubin, AST) while 1 in the prior TAE group had transient G4 toxicity (bilirubin) (p=0.9319).

CONCLUSIONS

Even though mNET patients who undergo TAE prior to PRRT often have a higher liver tumor burden than their embolization naïve counterparts, these patients have low risk of long-term high-grade hepatotoxicity. Patients with liver dominant metastatic mNET can safely receive PRRT after bland TAE.

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