C-25

Comparing Periprocedural Hemodynamic Instability in Y-90 Radioembolization and Bland Embolization for Neuroendocrine Tumor Liver Metastases

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BACKGROUND: Transarterial bland embolization (TAE) and transarterial radioembolization (TARE) are two common treatments for neuroendocrine tumor liver metastases (NETLMs). The difference in likelihood of periprocedural hemodynamic instability (PPHDI) between TAE and TARE secondary to hormonal release has not been explored. The purpose of our study was to compare the occurrence of PPHDI in TAE vs. TARE.

METHODS: From January 2009 to December 2019, 409 (217 male, 191 female, median age 64) NETLM patients were treated with TAE and/or TARE. Retrospective review of medical records was performed. Acute PPHDI was defined as systolic blood pressure above 160 mmHg or below 100 mmHg, diastolic blood pressure above 110 mmHg or below 60 mmHg, or a pulse below 60 beats per minute (bpm) and required IV administration octreotide and/or antihypertensive medication. For patients with baseline values outside these parameters, a 30-point systolic and/or 20-point diastolic deviation from baseline or a drop in heart rate by 10 bpm was considered abnormal. Delayed PPHDI was considered to have occurred if the patient required new antihypertensive medication for blood pressure control within 24 hours after the procedure. Chi-squared analysis was used to compare the TAE and TARE data.

RESULTS: 639 total TAEs and 186 total TAREs were performed on 409 patients. 26/409 patients received both TAE and TARE during the given time period. 426 (67%) TAEs and 42 (23%) TAREs were associated with PPHDI (P = .0001). Acute PPHDI occurred during 317 (50%) TAEs and 33 (18%) of TAREs (P = .0001).

Delayed PPHDI occurred following 305 (48%) TAEs and 16 (9%) TAREs (P = .0001).

CONCLUSION: This retrospective analysis suggests that PPHDI is more likely to occur during or following TAE than TARE. Further prospective studies are required to better elucidate the relative occurrence of hemodynamic instability in patients with NETLMs receiving TAE and TARE.

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