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A Prospective Study of Carcinoid Crisis with No Perioperative Octreotide

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BACKGROUND: Octreotide has been used prophylactically to reduce crisis rates as well as therapeutically to treat crises that still occur. However, multiple retrospective studies using prophylactic octreotide still report crisis rates of 24-30%. Average crisis duration with octreotide use range from 8.9-19 minutes and 8-24% last > 10 minutes. A recent prospective study showed there is no massive release of hormones during crisis, greatly weakening the argument for octreotide. Before recommending cessation of octreotide use, the incidence, duration and complications from crisis need to be studied when it is not used.

METHODS: Patients with NETs undergoing operations between 2017-2020 with no perioperative prophylactic or therapeutic octreotide were prospectively studied. Crisis was declared by agreement of surgeon and anesthesiologist if sudden hemodynamic instability was observed with no plausible alternative explanation. Clinicopathologic data were compared by chi-squared test for discrete and Mann-Whitney U test for continuous variables.

RESULTS: 171 patients underwent 195 operations. Crisis was documented in 49 operations (25%). Median crisis duration was 3 minutes and none lasted >10 minutes (0%). Crises correlated with small bowel primary ($p=0.012$), grade 2 tumor ($p=0.015$), older age ($p=0.021$), and carcinoid syndrome ($p<0.0001$), but there was no significant difference in outpatient long acting somatostatin analog use. Patients with crisis were more likely to receive vasopressors ($p=0.04$), intraoperative transfusions ($p=0.006$), and have major postoperative complications ($p=0.003$). Complication rates were not higher than previous reports using octreotide.

CONCLUSION: Completely eliminating perioperative octreotide did not result in increase rate or duration of crisis, or major complication rates compared to

previous studies using it. We conclude that perioperative octreotide use may be safely stopped due to inefficacy and lack of scientific grounds. Because crisis of even short duration is associated with increased risk of major complications, the search for an effective prophylactic agent should continue.

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