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International expert consensus on perioperative management of carcinoid crisis.

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BACKGROUND

Carcinoid crisis is a critical concern for patients with neuroendocrine tumors (NETs) undergoing invasive procedures. Guidance is needed to standardize and optimize perioperative care for patients at risk of carcinoid crisis. We aimed to develop consensus based expert recommendations for the perioperative management of carcinoid crisis.

METHODS

We used a modified Delphi approach with 4 rounds of voting to reach expert consensus on statements about perioperative management of carcinoid crisis. A multidisciplinary international panel of 44 experts was formed, and 3 patient partners were engaged. An initial survey round identified items to cover in the statements. Statements addressing preoperative, intraoperative, and post-operative considerations were created. Panelists rated statements on a Likert scale (1 to 7). Three additional rounds of iterative rating and feedback were completed anonymously. Consensus was defined with median score between 5-7 and <13 panelists rating outside the score category containing the median. Dissent analyses (bipolarity and stakeholder-group comparison) were conducted to understand the robustness of the consensus results. The level of evidence and grade of recommendation was based on the Oxford Centre for Evidence-Based Medicine. Open community feedback was obtained over 2 weeks via an online survey.

RESULTS

Final consensus was reached on 41 statements. Of these, 12 focused on preoperative work-up and optimization, 27 on intraoperative management including monitoring, prophylaxis and treatment of crisis, and 2 on postoperative management. Statements stated that somatostatin analogs are not necessary for prophylaxis prior to operation or on the day of operation, and treatment in case of carcinoid crisis should start with vasopressors with short-acting somatostatin analogs used as an adjunct. No dissent was identified. Open feedback was provided by 43 participants and 80% agreed with the statements presented.

CONCLUSIONS

Using modified Delphi methodology, we developed recommendations to guide the perioperative management of carcinoid crisis. Considering the importance of carcinoid crisis on the management and outcomes of patients undergoing surgical resection for NETs, this guidance can help standardize

care and optimize outcomes. Future work should focus on implementation in clinical practice, monitoring of outcomes, and furthering understanding of carcinoid crisis to update recommendations.

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