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Role of Chromogranin A in the Diagnosis and Follow up of Neuroendocrine Neoplasms: Real World Review

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BACKGROUND: The clinical utility of chromogranin A (CgA) in management of neuroendocrine tumours (NET) is controversial with high rates of false positives and false negatives. We evaluated CgA use at diagnosis, treatment monitoring and recurrence detection.

METHODS: A retrospective review of medical records was conducted of patients with NET who had CgA measured from January 2015 to April 2021. Diagnosis was confirmed by histological means or Gallium-68 DOTATATE scan. For treatment monitoring, CgA was classified as increased, stable or decreased if there was at least a 25% change in levels. Tumour burden was assessed by CT, MRI or Gallium-68 DOTATATE scan. CgA level and imaging performed for contemporaneous assessment were considered paired. Calculations for sensitivity and specificity were made by conventional formulas.

RESULTS: Sixty-seven patients with NET who had a serum CgA level measured were identified. The commonest primary tumour site was pancreas and 64% had metastatic disease. There were 50 paired assessments during diagnostic work up; 33 with elevated CgA representing true positives and 17 with normal CgA representing false negatives. Therefore, the sensitivity is 66%. Sensitivity is higher in patients with symptoms and metastatic disease. There were 320 CgA measurements in follow up; 295 (92%) resulted in no further action, 8 (3%) in further investigation and 14 (4%) had a change in therapy, though 8 were most likely informed by progressive disease seen on imaging. Of 93 paired assessments for treatment monitoring, sensitivity for progressive disease was only 16%. Of 36 paired assessments for watch and wait patients, sensitivity for progressive disease was 64%.

CONCLUSION: Our findings do not support the use of CgA in clinical

decision making. The development of new biomarkers are needed to aid the management of NET.

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