Stage distribution of Midgut Neuroendocrine Tumors (NETs) using Updated American Joint Committee on Cancer Classification

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INTRODUCTION

- Midgut neuroendocrine tumors are a heterogeneous group of tumors with varying clinical presentation and outcomes.
- The AJCC recently released the 8th Edition of Tumor-Node-Metastasis (TNM) staging system.

OBJECTIVE

- To assess the TNM distribution of midgut NETs using the new classification.

METHODS

- Patients with pathologically confirmed midgut NETs diagnosed between 1988 and 2017 were identified using existing institutional pathological and clinical databases from the Mount Sinai Hospital.
- Demographic, clinical, tumor specific and treatment data were collected for all patients. TNM stage was assigned according to the new AJCC 8th edition.
- Tumor grade was assigned according to the World Health Organization and North American NET Society guidelines.

Table 1 – Demographics and Tumor Characteristic.

Characteristic	No of patients (n= 302)
Age at Diagnosis	
Mean	60.2
Standard deviation	12.8
Sex	
Female	158 (52)
Male	144 (48)
Race	
White	184 (61)
Black	23 (8)
Hispanic	15 (5)
Other	80 (26)
Presenting Symptoms	
Carcinoid Syndrome	99 (34)
Obstruction	51 (18)
Incidental	52 (18)
Abdominal Pain	36 (12)
GI Bleeding	29 (10)
Combined (more than one above symptoms except Incidental)	24 (8)
Location of tumor	
Ileum	170 (56)
Jejunum	12 (4)
Small bowel (Unknown)	120 (40)
Tumor Focality	
Single	191 (65)
Multifocal	104 (35)
Primary tumor Differentiation	
Poorly differentiated	7 (3)
Well differentiated	246 (97)

RESULTS

- We identified 302 patients with pathologically confirmed midgut NETs. Mean patient age was 60 years, 52% were female, and 61% were white.
- The most common presenting symptoms was carcinoid syndrome (34%) followed by obstruction (18%) and incidental (18%).
- Two thirds (65%) of the patients had a single primary tumor.
- Overall, 6.3% were T1, 25% T2, 56% T3 and 12.2% were T4.
- There were 169 (56%) patients with N1 and 73 (24%) N2. Of the N2 patients, 22% had mesenteric mass.
- We found 35% patients with hepatic metastases (M1a), 6% had extrahepatic metastases (M1b) and 8% had both hepatic and extrahepatic metastases (M1c).
- Majority (81%) of patients had grade 1 tumors and 98% of our population had undergone surgical resection of primary.
- Slightly more than half of the patients (53%) were recorded as taking somatostatin analogues (octreotide or Lanreotide).

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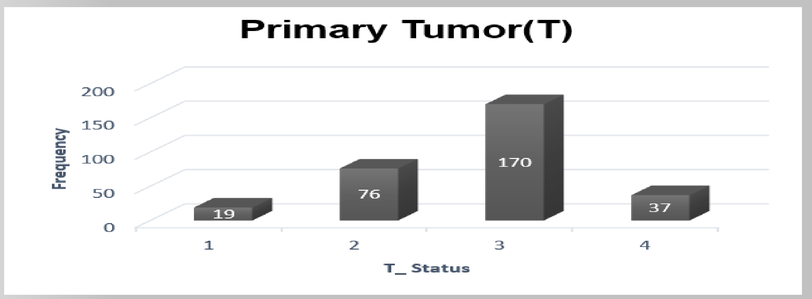

Figure 1. Distribution of Primary Tumor (T)

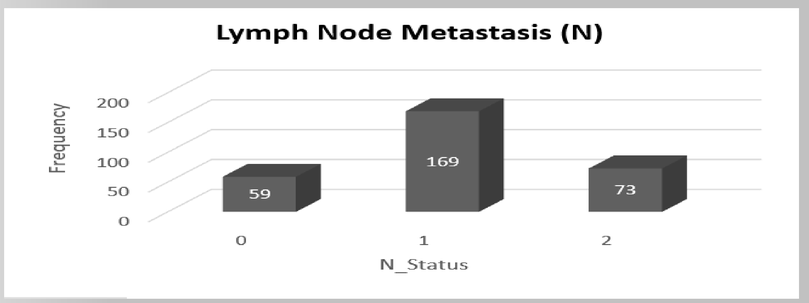

Figure 2. Distribution of Lymph Node Metastasis (N)

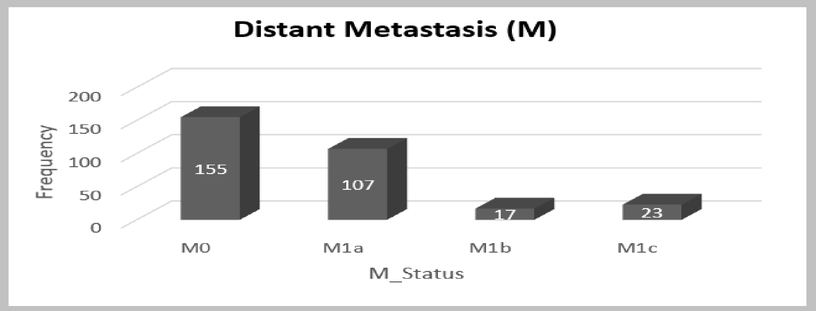

Figure 3 : Distribution of Distant Metastasis (M)

CONCLUSION

- The new AJCC staging classification recategorizes patients with nodal involvement into N1 and N2, with the majority of N2 having a mesenteric mass.
- Similarly, patients with metastatic disease are now subdivided into M1a, M1b and M1c based on the metastatic site.
- Future analyses will assess whether this new staging system improves prediction of outcomes in these patients.

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