Predicting Survival of Small Intestine Neuroendocrine Tumors (NETs): Experiences from a Major Referral Center

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BACKGROUND

- Small intestine NETs (SI-NETs) account for 41.8% of all gastrointestinal malignancies
- There is lack of formal prognostic tools for guiding management decisions and for counseling patients
- The NET nomogram, developed by Modlin et al, has prognostic significance but has not been validated in the US
- This is the first external validation of this nomogram in US patients from an urban tertiary referral center

METHODS

- Retrospective chart review of SI-NET patients at Mount Sinai's Center for Carcinoid and NETs
- Inclusion: diagnosis 2005-2017, biopsy confirmation, surgical resection
- Variables were selected and categorized according to the methods outlined by Modlin et al
- Wilcoxon test and Cox regression was used to validate the nomogram

RESULTS

- Our analysis of 121 patients showed that the NET nomogram significantly predicted survival (p=0.01)
- Wilcoxon test demonstrated statistically significant differences in nomogram scores between alive and deceased patients (p=0.0096)
- The nomogram was also useful for stratifying patients into low risk (<83 points) vs high risk (>83 points) groups (p=0.01)
- Clinical utility of the nomogram was limited by biomarker availability and inconsistencies in grading and staging classifications.

CONCLUSIONS

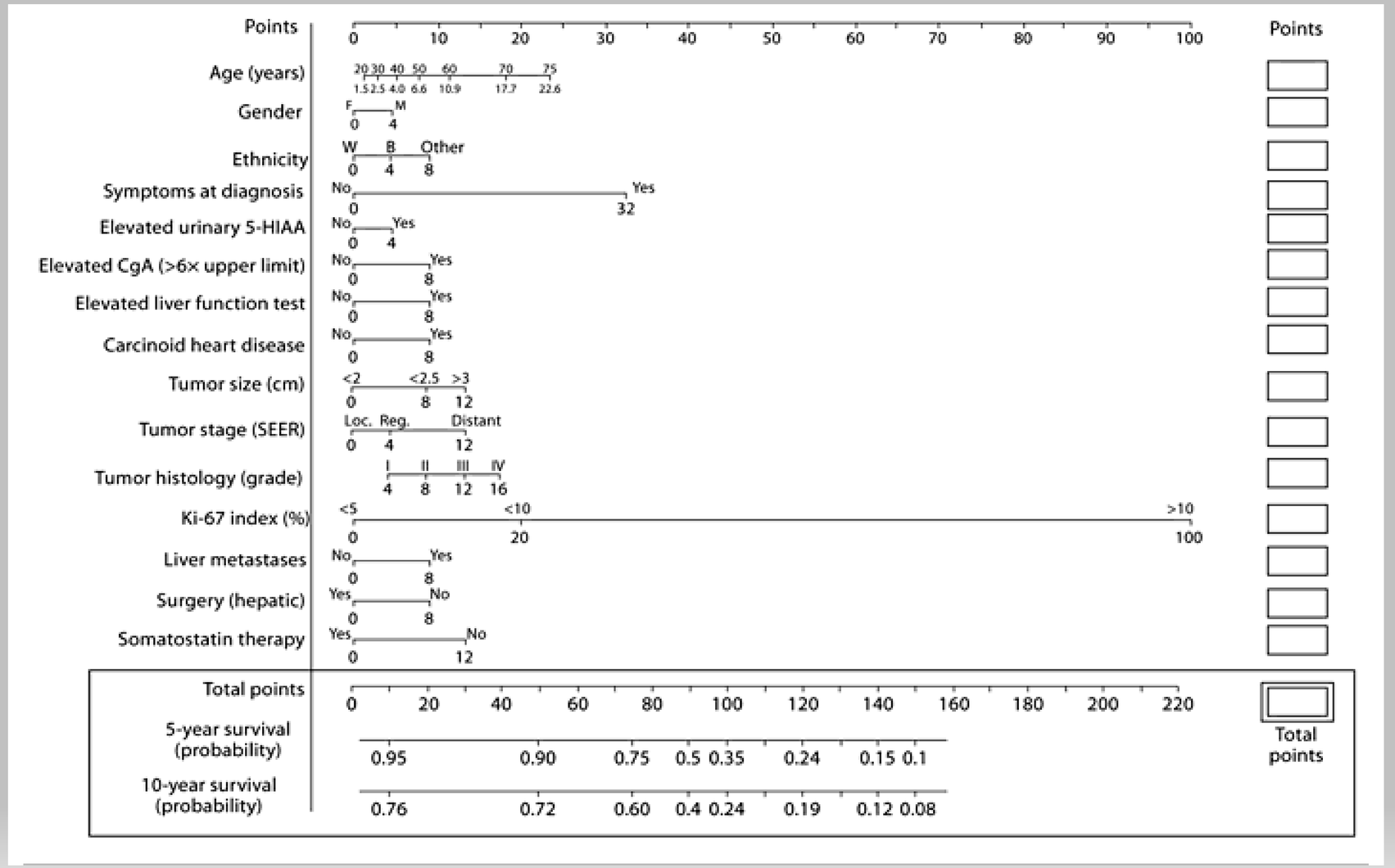
- The NET nomogram was a reliable tool for prognostication and for risk stratification
- However, refinement of grading and staging classification, and the addition of further clinicopathological parameters could improve its prognostic accuracy and clinical utility

RESULTS

Demographic	N	%
Age at diagnosis (median, range)	56	21-89
Female	68	56
White	74	61
Black	8	7
Other	39	32
Clinical Variables		
Symptoms at diagnosis	90	74
Elevated CgA >6x ULN	16	13
Elevated LFT	53	44
Liver metastasis	59	49
Carcinoid heart disease	12	10
Pathological Variables		
Primary tumor size		
< 2.0 cm	59	49
2.0-2.5 cm	18	15
> 3.0 cm	44	36
Tumor Stage		
local	15	12
regional	36	30
distant	70	58
Grade		
G1	90	74
G2	30	25
G3	1	0.8
G4	0	0
Ki67 Index		
<5%	105	87
5-10%	10	8
>10%	6	5

Treatment	N	%
Hepatic Surgery	59	49
Somatostatin Therapy	74	61
Outcomes		
Survival	110	90.9
Follow-up (years) Median, range	3.1	0.5-12
Nomogram score Median, range	40.6	206

The NET Nomogram



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