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Introduction

- Accurate grading of neuroendocrine neoplasms can have significant implications for treatment and surveillance. Common problems include quality / quantity of tissue and experience with estimation of Ki-67 as well as familiarity with the 2017 WHO grading system. Optimally resected PanNEN patients enjoy prolonged survival but recurrences are not uncommon and it is not known how the new WHO grading system applies to this category.

Methods

- We retrospectively queried the surgical PanNEN database for patients who had undergone pancreatic enucleation, distal, central, total pancreatectomies, and Whipple procedure. We verified the original grading, recorded grade changes and correlated those to relapse free survival and overall survival.

Results

- A total of 95 patients (94 with survival data) treated between 1995 and 2017 with a median of 5 slides per patient (range 2-42) were examined. Grade change was noted in 25 (26%) of cases.

Grade	Frequency	Percent
NET G3/NEC	11	11.58
NET G1/NET G2	84	88.42

Grade_change	Total	Death	Alive	% alive
No	69	7	62	89.86
Yes	25	4	21	84.00
	94	11	83	88.30

Table 1. Baseline characteristics

- Median relapse free survival was 10.83 years when grade did not change and 4.29 years when it did. Kaplan Meier curves are shown in Figure 1.
- A multivariate analysis showed HR for grade change and relapse free survival of 2.97 (95% CI 1.17 to 7.51, p= 0.0216).

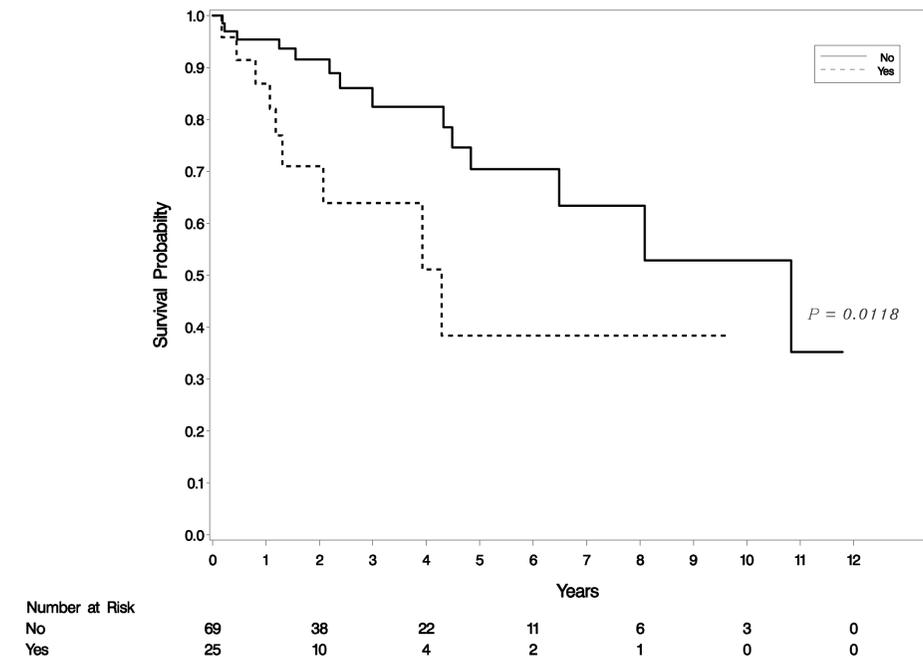


Figure 1. Relapse free survival for grade change versus no change.

- Direction of change (upgrading or downgrading) was not associated with differences in relapse free survival (not shown, p=0.0117).
- Grade change was not associated with differences in overall survival (Figure 2).

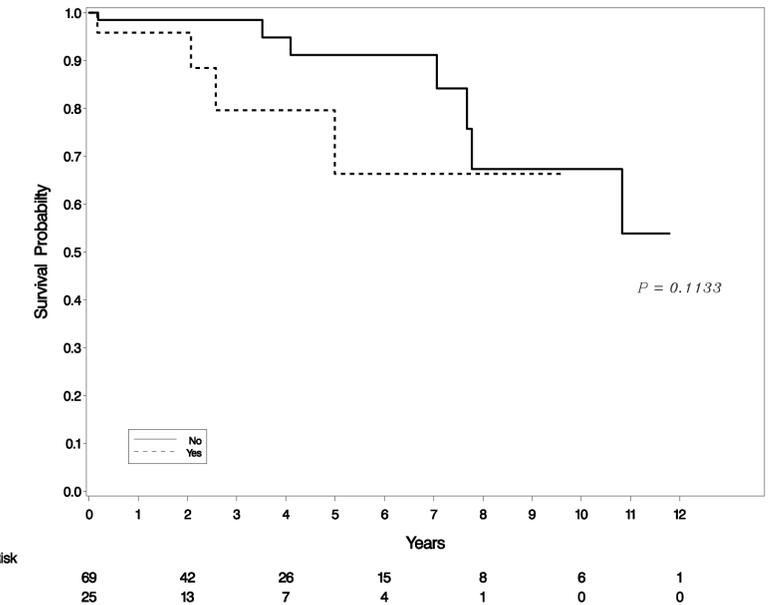


Figure 2. Overall survival for grade change versus no change

Conclusions

- Accurate staging of PanNENs is associated with differences in relapse free survival.
- Possible reasons include under or overtreatment of patients.
- We have been unable to demonstrate differences in overall survival, possibly because of limited patient data and follow up (>80% of patients are alive as of last review).

Further steps

- Database contains 250+ patients and is enriching.
- Longer follow-up needed.
- Stratification by treatments and genetic information.