

# Increase in Incidence of Appendix Neuroendocrine Tumours

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## Introduction

Appendix neuroendocrine tumours (ANETs) incidence rates are quoted as approximately 0.15-0.6/100,000/year and have increased internationally (1).

We reviewed incidence rates in Auckland.

## Method

261 resected ANETs histologically diagnosed in the Auckland region between 1995-2012 were identified from the New Zealand NETwork! Registry (Table 1). NETwork! Registry captures all NET diagnosis by searching the New Zealand Cancer Registry using ICD-0 morphology codes, as well as searching public and private pathology records in each DHB.

Table 1. ANETs included and excluded

Total from NETwork!	Exclusion	16
261	Goblet Cell	5
	Local invasion	1
Inclusion	Met to appendix	5
245	Not NET	3
	Autopsy	2
	Total	16

Inclusion criteria was primary ANETs. Exclusion criteria included biopsy only histology (i.e. not excised), goblet cell carcinoma, local invasion or metastasis of other primary site or diagnosis at autopsy.

16 patients did not meet criteria resulting in 245 patients included.

Population figures were estimated from New Zealand census data for and age standardised (2).

## Results

Of the 245 cases of ANETs, 146 (59%) were female (Table 2).

Age of diagnosis ranged from nine years to 89 years (median 29 years).

Incidence rates increased overall over the 18 year period (Figure 1).

Age standardised incidence rate increased 2.9-fold from 1996 (0.281 per 100,000) to 2012 (0.834 per 100,000) (Table 3).

Table 2: Epidemiology

Patient			
Gender		Age at Diagnosis	
Male	99	Median	29
Female	146	Range	9-89
ANET			
Size		Location	
<1cm	178	Tip	137
1-2cm	41	Body	38
>2cm	8	Base	14
Unknown	18	Unknown	56

All patients had local disease with only one having a single positive local node. There were no recurrences, development of distal metastasis or deaths related to ANETs in this population group, with follow up completed on 1 December 2020 and a median follow up period of 49 months.

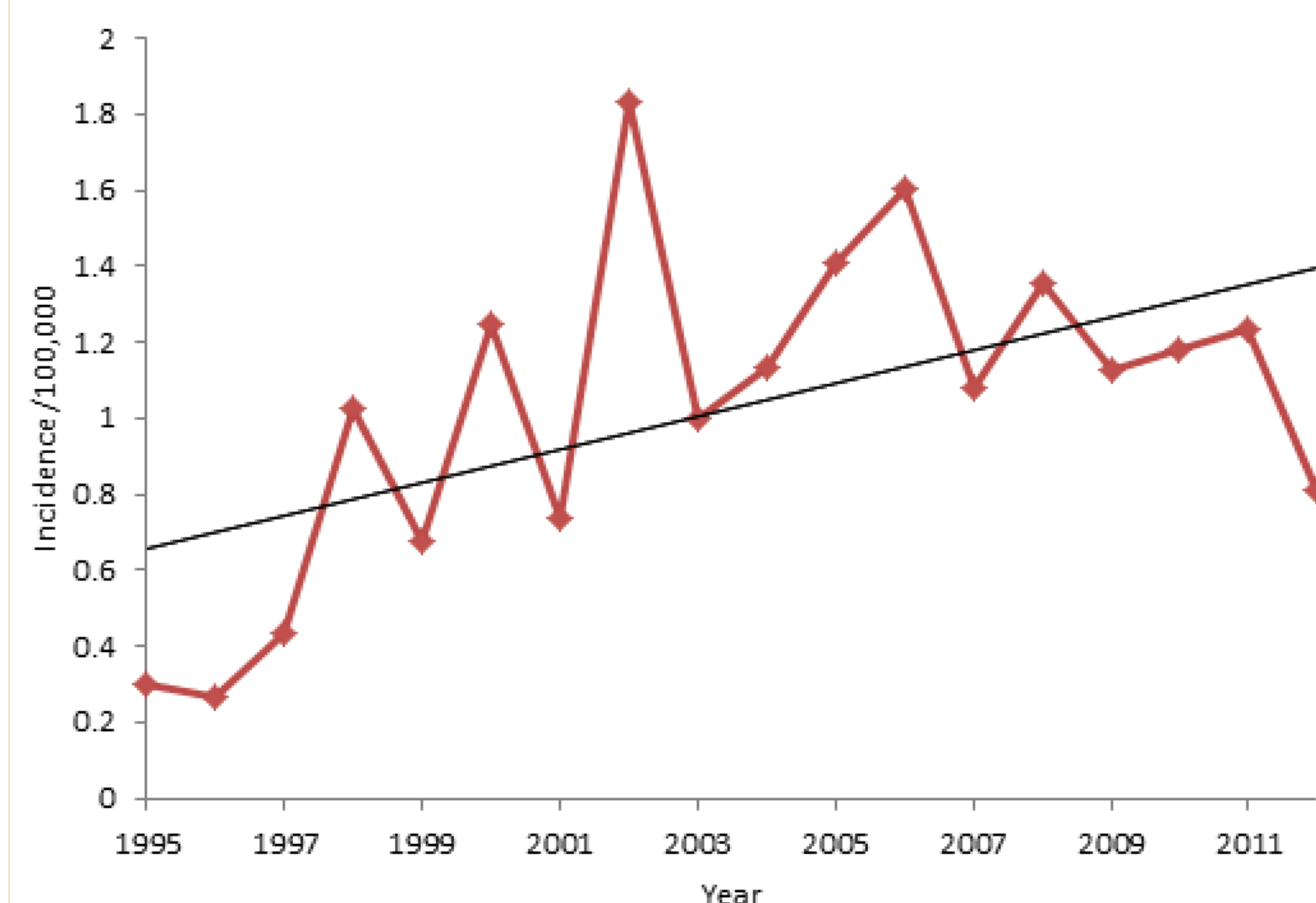


Figure 1: Incidence rates (crude) of ANETs, with trend line

Table 3. Population standardised Incidence/100,000

Year	ANETs	Incidence
1996	3	0.281
2001	9	0.777
2006	22	1.663
2012	12	0.834

## Conclusion

- Over this 18- year period we found an increase in incidence of ANETs
- Incidence of ANETs in Auckland is 28% higher than international documented incidence rates
- No relapse or mortality was attributed to ANETs in the follow up interval

## References

- (1)Pape U, Niederle B, Costa F, et al. ENETS Consensus Guidelines for Neuroendocrine Neoplasms of the Appendix (Excluding Goblet Cell Carcinomas). Neuroendocrinology 2016; 103:144-152
- (2) NZ census 1996-2013, Statistics New Zealand:Location, Ethnicity, Ethnic groups by region Retrieved from <https://catalogue.data.govt.nz/dataset/2013-census> on 12/12/2020

## QUICK FACTS

### > Internationally

- > Incidence rates 0.15-0.6/100,000/year
- > Incidence rates are increasing

### > Our Data

- > NZ National NET Registry (245 patients)
- > Incidence

- > 0.281/100,000 in 1996
- > 0.834 /100,000 in 2012

### > 18 year follow up period

- > Follow up completed on 1 Dec 2020
- > Median follow up 49 months

- > No recurrences or development of metastasis or deaths related to ANETs

- > 28% higher incidence rates than international documented