



# Does Plasma Neurokinin A Predict Survival in Well-differentiated Neuroendocrine Tumors (NETs) of the Small Bowel?

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## Background

Small bowel neuroendocrine tumors (NETs) are rare and often indolent neoplasms. Chromogranin A is the most commonly used biomarker for NETs but has a high false positive rate due to the use of proton pump inhibitors (PPIs). Our group, the New Orleans Louisiana Neuroendocrine Tumor Specialists (NOLANETS), currently uses serial monitoring of Neurokinin A (NKA) as part of our tumor management protocol. We have previously shown that Neurokinin A levels predict survival in patients with Stage IV well-differentiated small bowel NETs.

## Hypothesis

We hypothesized that patients who underwent surgical cytoreduction and whose NKA levels remain elevated despite therapeutic intervention have a poor prognosis.

## Methods

Data were analyzed from patients with NETs of the small bowel, ileum, or jejunum who underwent surgical cytoreduction and who had serial plasma NKA values (Normal <40 pg/ml, InterScience Institute, Inglewood, CA).

Survival was measured from date of the patient's first NKA level to either the date of death or end of study (June 1, 2017).

## Results

### Descriptive Stats

<b>All patients</b>	267
<b>Gender</b>	
Female	141
Male	126
<b>Age at Diagnosis</b>	
0-40	22
41-50	55
51-60	102
61-70	70
Over 71	18

Serial plasma NKA values were collected in 267 patients. All patients underwent surgical cytoreduction and received other therapies as part of standard of care.

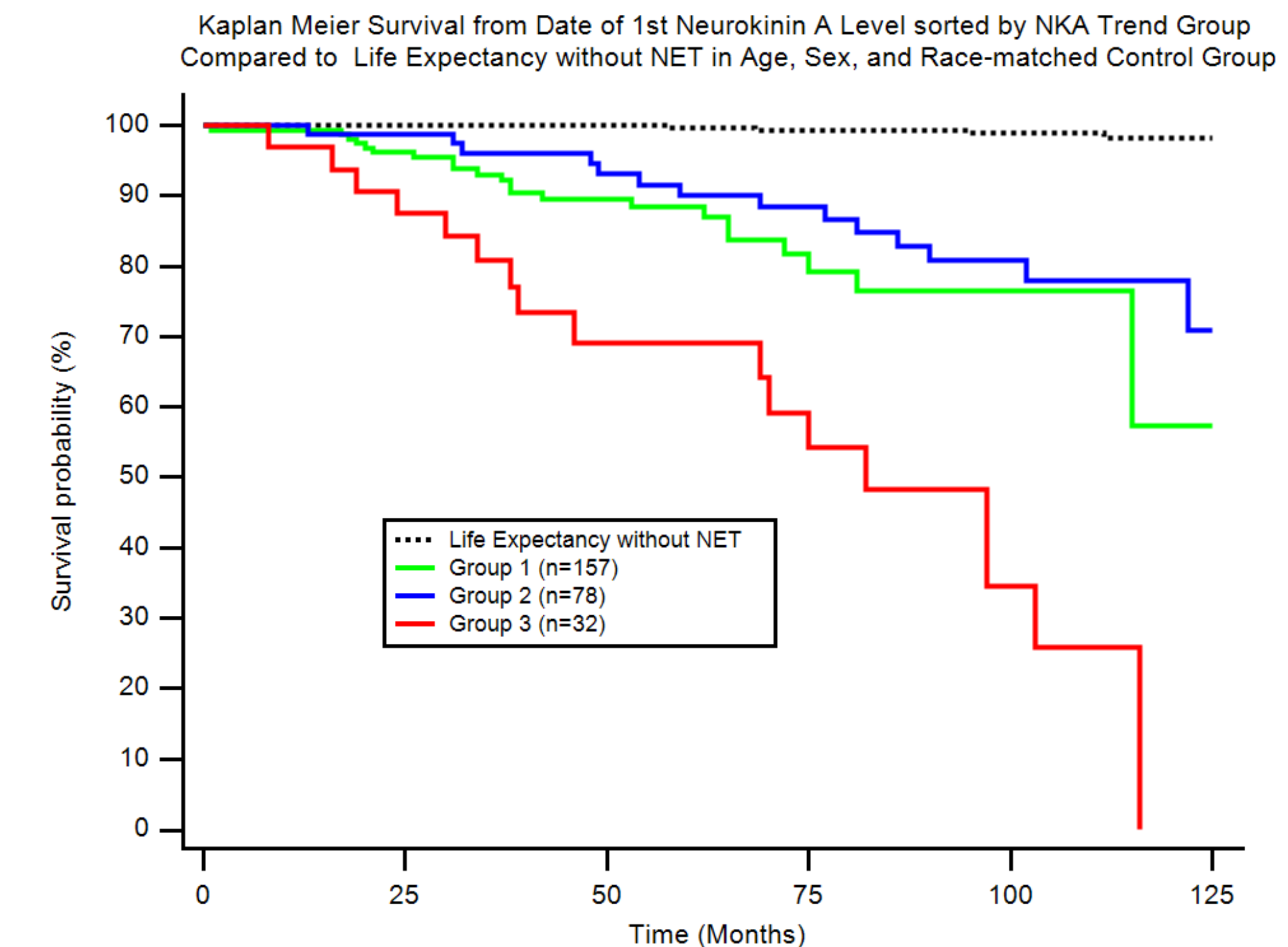
Patients were sorted into 3 groups to evaluate survival based on their NKA level.

- **Group 1 (157/267, 59%)** had NKA levels that were continuously  $\leq 40$  pg/ml.
- **Group 2 (78/267, 29%)** had NKA values that increased transiently to  $>40$  pg/ml but returned to  $\leq 40$  pg/ml prior to their most recent visit or date of death in response to treatment.
- **Group 3 (32/157, 20%)** had elevated NKA levels that remained  $>40$  pg/ml until their most recent visit or date of death despite therapeutic intervention.

### Kaplan-Meier Survival from Date of 1st Neurokinin A Level Sorted by Group (n=267)

Group	n	Mean $\pm$ SD (months)	Median (months)	2-year	5-year	10-year
<b>Group 1</b> – Normal NKA	157	110.93 $\pm$ 4.85	Not Reached	96%	88%	57%
<b>Group 2</b> – Elevated NKA that returned to normal	78	121.14 $\pm$ 6.18	Not reached	99%	90%	78%
<b>Group 3</b> – Elevated NKA	32	76.81 $\pm$ 7.10	82	88%	69%	0%

## Results



## Conclusions

Patients with small bowel NETs who have undergone surgical cytoreduction have high 2-year, 5-year, and 10-year survival rates.

Serial monitoring of plasma NKA is useful in identifying patients who have a worse prognosis and can indicate to physicians that immediate therapeutic intervention is warranted.