

Correlation of Angiogenic Factors in Neuroendocrine Tumors and Their Prognostic Implications



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Background

- Neuroendocrine tumors (NETs) are rare and commonly considered indolent neoplasms.
- Two factors, CD31 and Factor VIII, describe the angiogenic potential of a tumor and can correlate with tumor growth and metastasis.
- We hypothesized that these two angiogenic parameters are highly correlated, and higher angiogenic parameters would also have a higher proliferative index (Ki-67), and therefore would have poorer prognoses.

Methods

- Pathology reports from all NET patients who had surgery performed at our institution from April 2003 to October 2014 were queried for Factor VIII, CD31 and Ki-67 immunohistochemical values.
- Patient demographics, tumor characteristics and pathology reports were analyzed.
- For subjects with multiple values, the highest value was used in statistical calculations. Survival was calculated via Kaplan-Meier method and statistical significance was defined as $p < 0.05$.

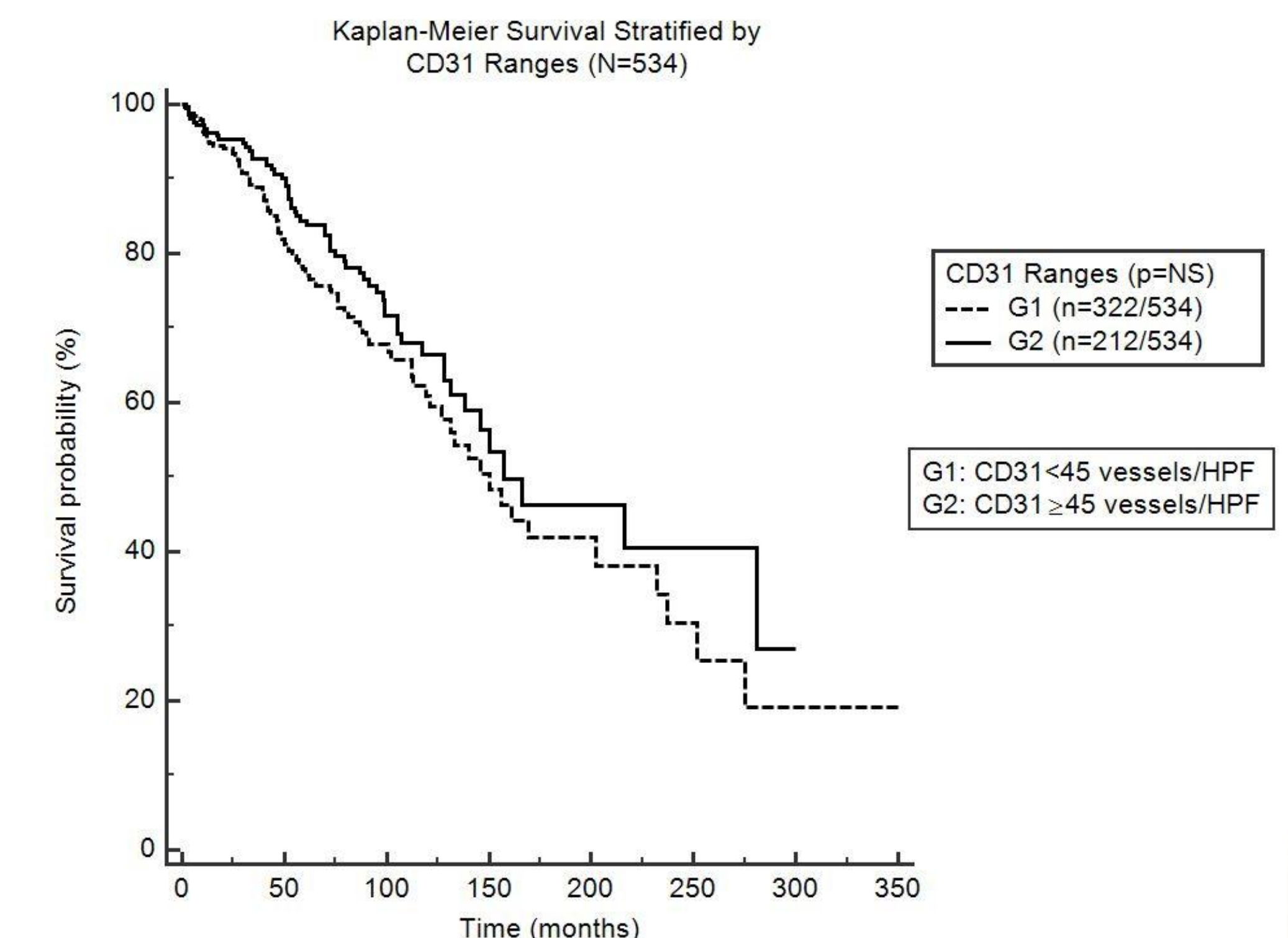
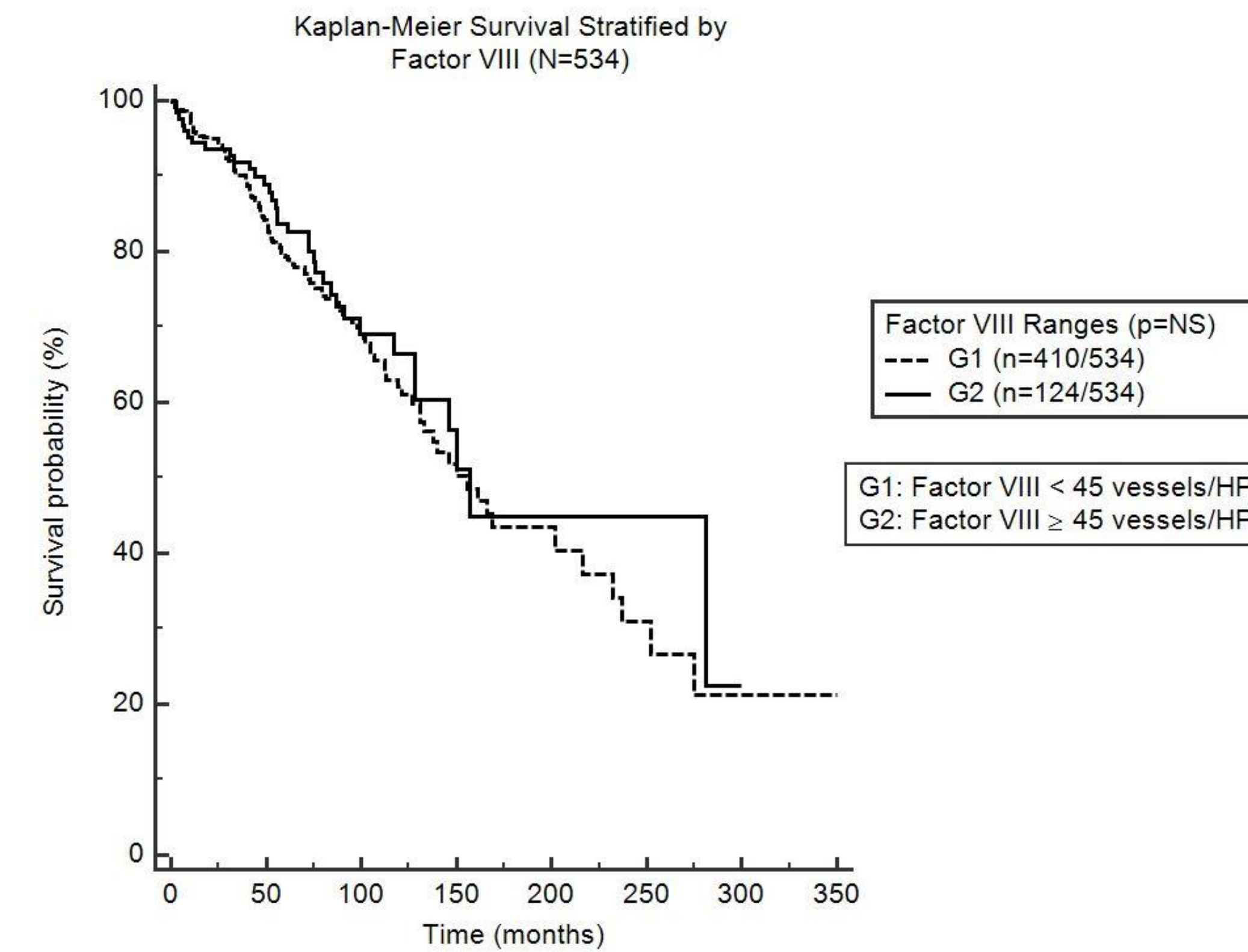
Results

- One-thousand and seventy-two specimens from 534 NET patients were analyzed.

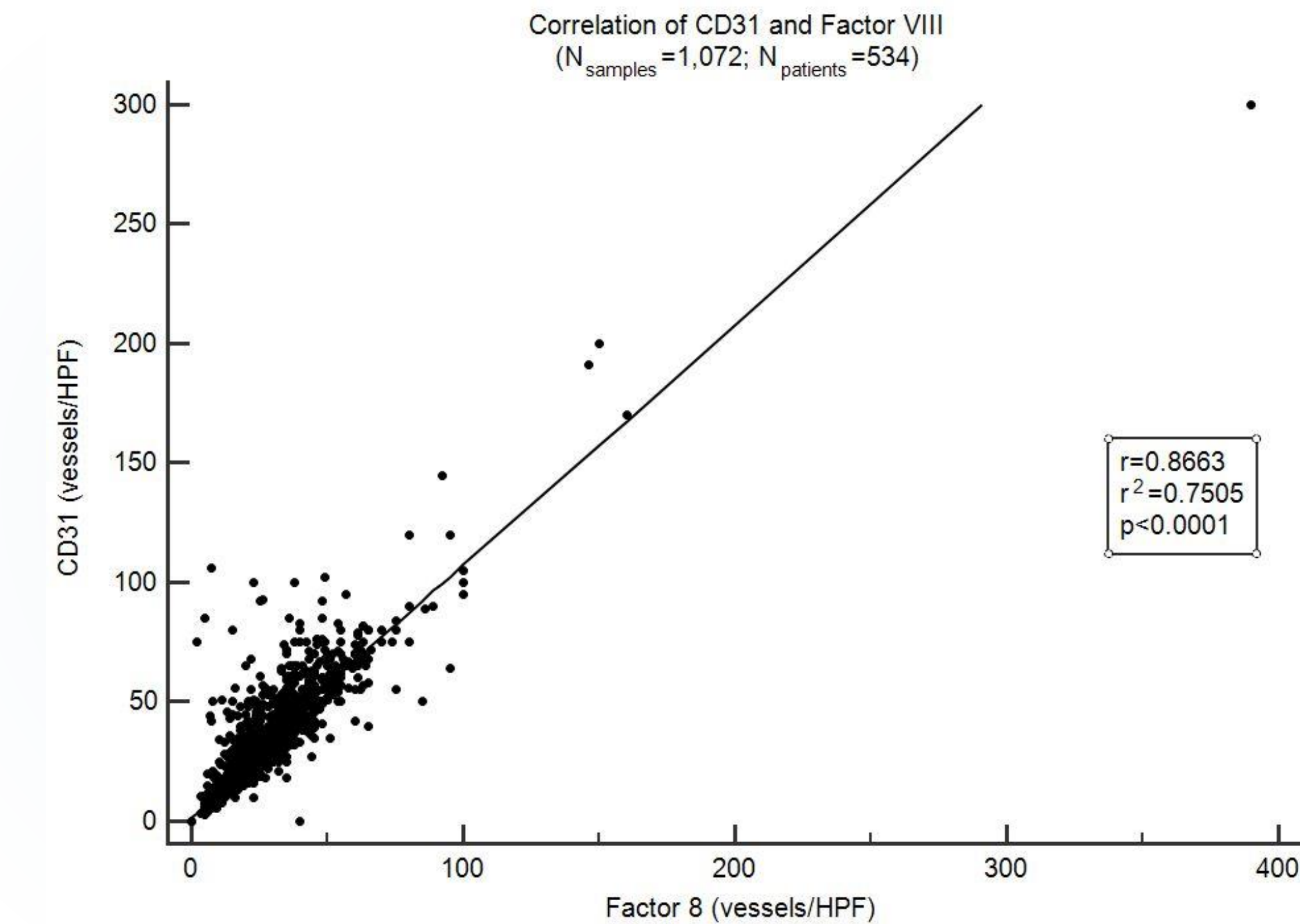
Patient Characteristics (n=534)			N (%)
Sex	Male		238 (45%)
	Female		296 (55%)
Primary Site	Small Bowel		321 (60%)
	Pancreas		60 (11%)
	Duodenum		38 (7%)
	Rectum		26 (5%)
	Lung		14 (3%)
	Other Sites		75 (14%)

- CD31 and Factor VIII were statistically significantly correlated ($p < 0.0001$; $r = 0.8663$).
- When individually compared to Ki-67, CD31 and Factor VIII showed no statistical correlation ($p > 0.05$).
- Survival sorted by Ki-67 ranges (WHO 2010) was statistically significant, as expected ($p < 0.05$).
- Survival stratified by CD31 and Factor VIII was not statistically significant ($p > 0.05$).

Results



Results



Conclusion

- Factor VIII and CD31 in NETs are significantly correlated regardless of primary tumor site, and a high value does not necessarily predict a poor prognosis.
- Further studies are warranted to determine the role of angiogenic markers in the diagnosis and management of NETs.