

Outcomes and adverse events in cancer patients after diagnosis of immunotherapy-associated diabetes mellitus: a retrospective cohort study

Eva Duvalyan, PharmD¹, Mark Anderson, MD, PhD², Robert J Rushakoff, MD, MS² and Zoe Quandt, MD, MS²

¹University of California, San Francisco School of Medicine, San Francisco, CA, ²Department of Medicine, Division of Endocrinology and Metabolism, University of California, San Francisco, San Francisco, CA

BACKGROUND

- Immune checkpoint inhibitor (CPI)-induced diabetes mellitus (CPI-DM) is a rare immune-related adverse event (irAE), occurring in approximately 0.2-1.9% of patients receiving CPIs [1]
- In nearly all cases, discontinuing CPIs does not reverse CPI-DM after pancreatic beta cells have been injured [1–3]
- Fear of additional irAEs may lead to CPI discontinuation by providers [4]
- This study aims to understand if discontinuing CPIs after diagnosis of CPI-DM impacts development of future irAEs and cancer outcomes

METHODS

- Included patients who developed CPI-DM during cancer treatment at UCSF from 7/1/2015 to 3/1/2023 and required chronic insulin for DM treatment
- Compared rates of irAE development and cancer outcomes in patients that resumed CPIs to those who discontinued them after CPI-DM development
- Used Fisher's exact tests, student t tests, Kaplan-Meier methods, and Cox regression as appropriate

CONCLUSION

Remains unclear if patients who have developed CPI-DM are at higher risk of future irAEs

Resumption of CPIs resulted in the expected rate of future irAE development

Discontinuation of CPIs did not eliminate risk for future irAEs

Risk of death and cancer progression may not increase by holding or discontinuing CPI

Limitations include a small sample size which may be masking a clinically meaningful result

RESULTS

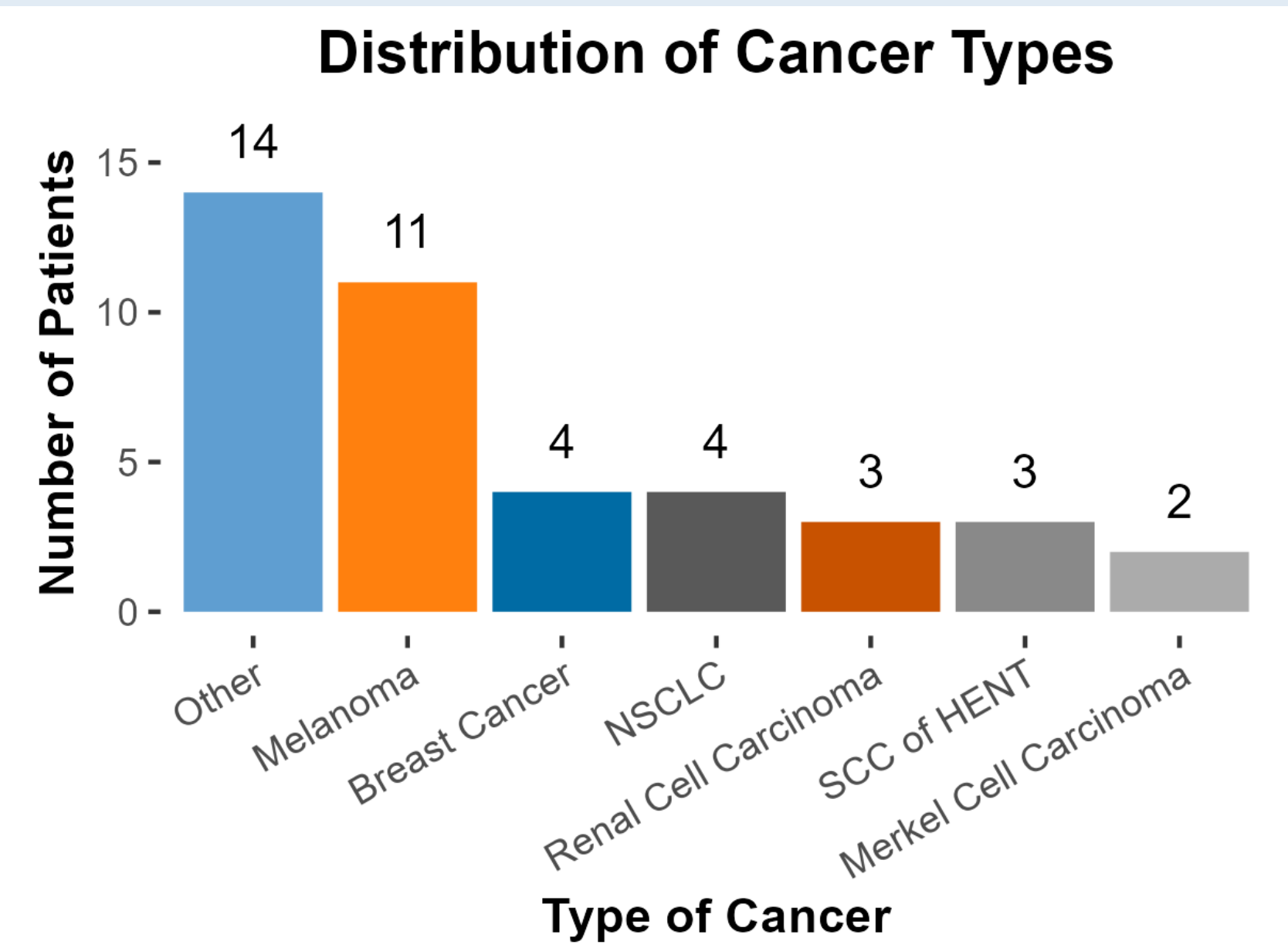


Figure 1: Distribution of types of cancer within the study patient population. "Other" encompasses a broad range of malignancies that had only one occurrence each in this study.

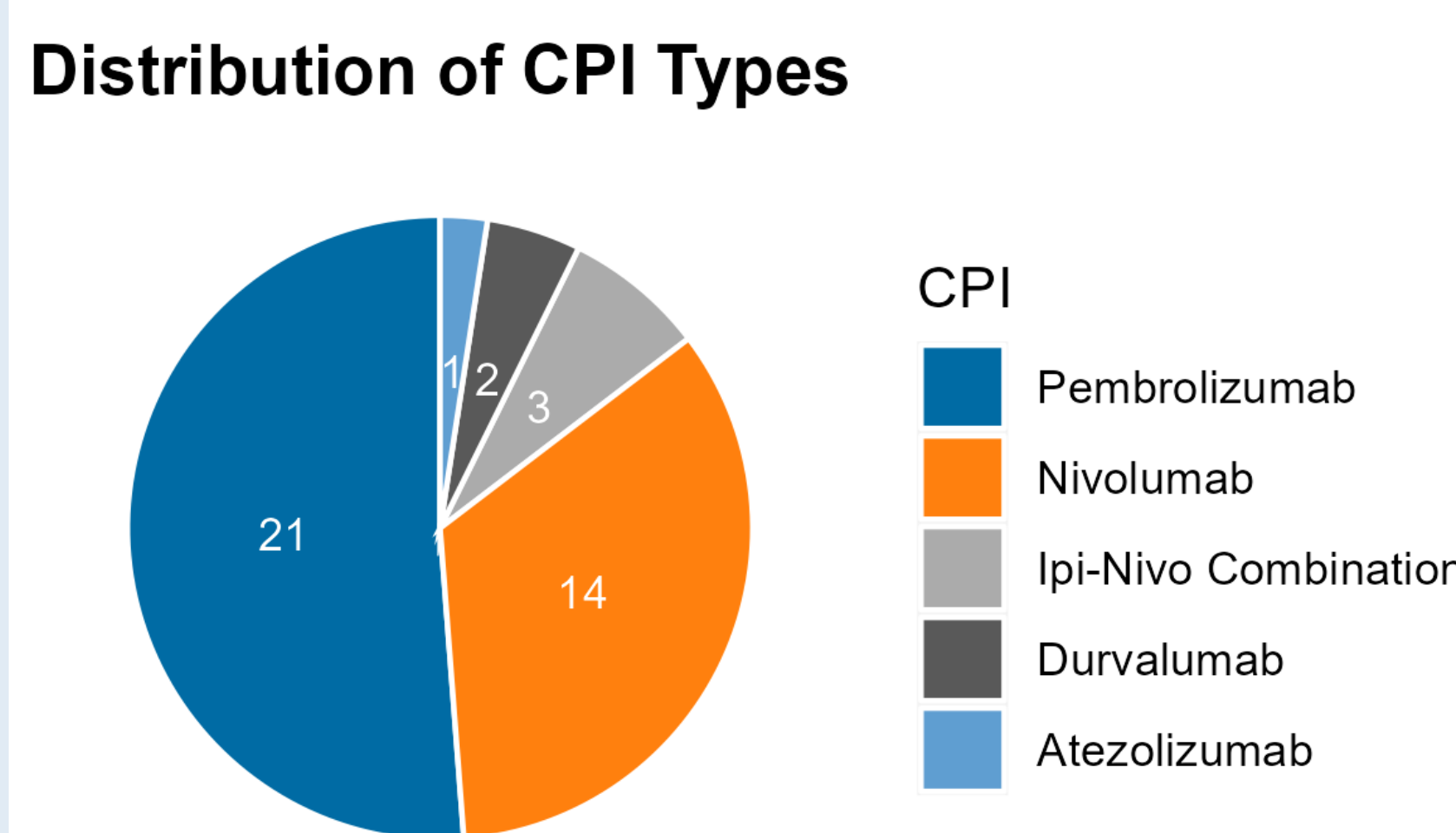


Figure 2: Distribution of the types of CPI that the patient was last using prior to development of CPI-DM.

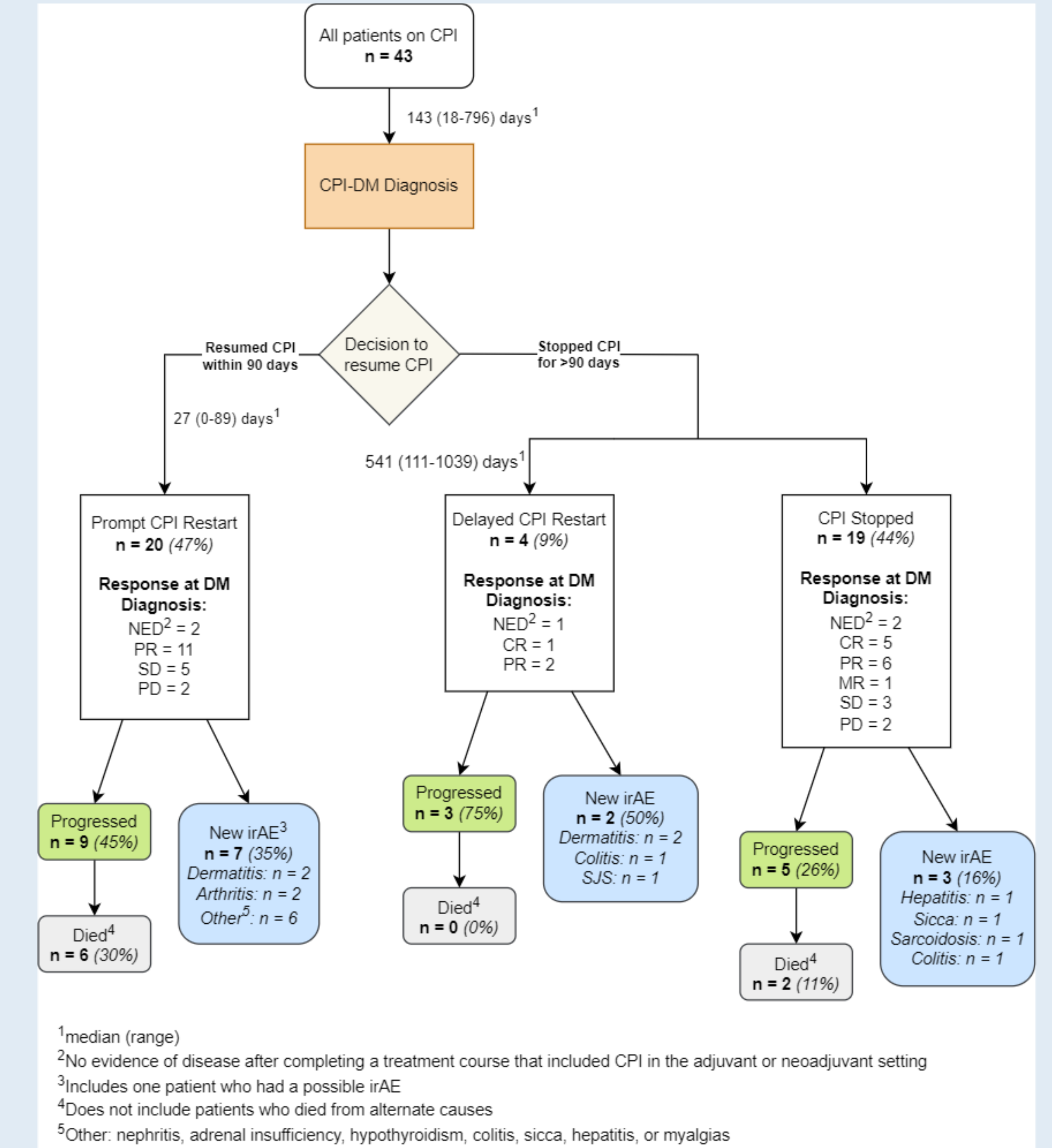


Figure 3: Progression, death and development of new irAEs after discontinuing CPIs or resuming them, either promptly or after a prolonged pause.

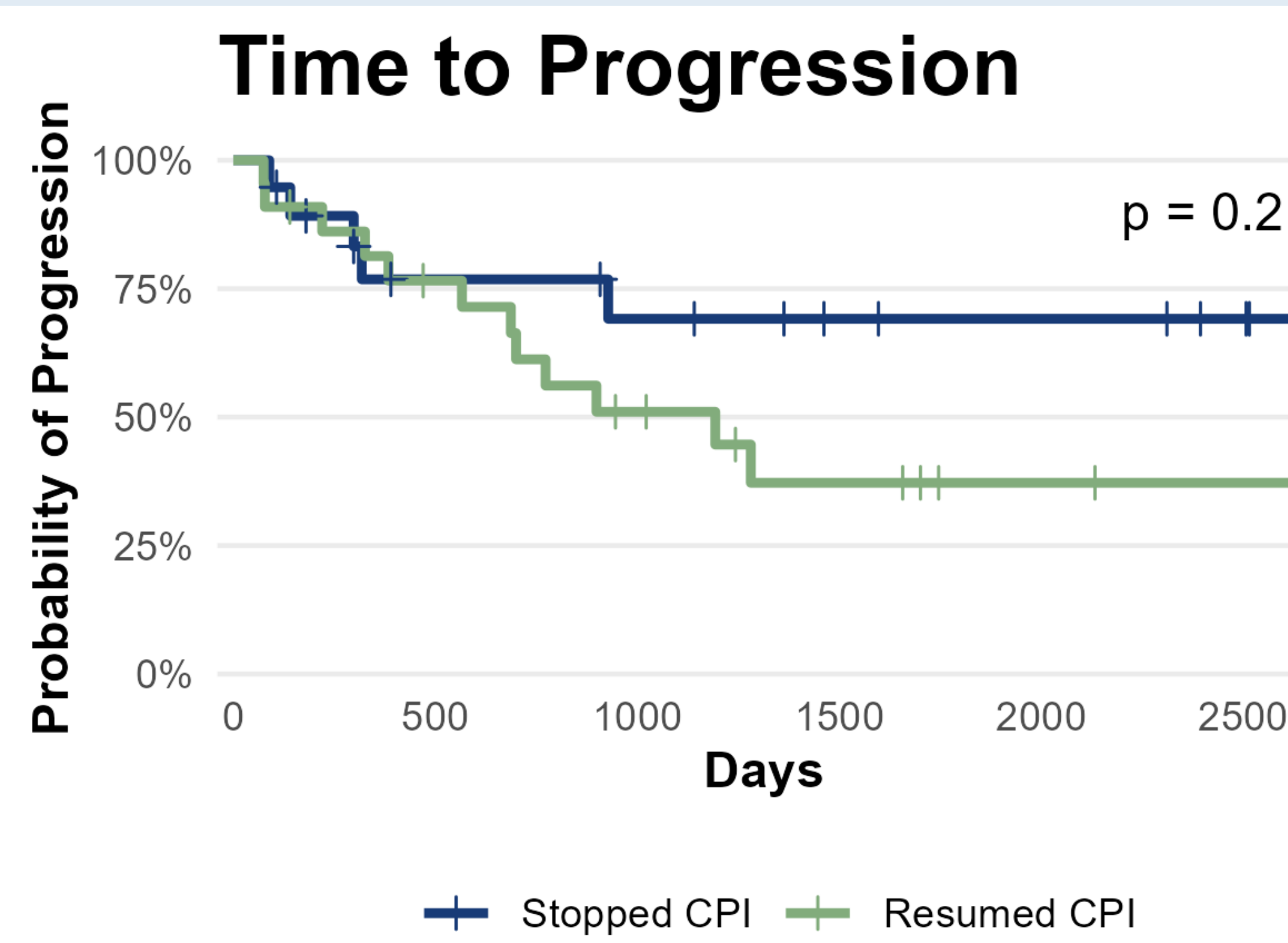


Figure 4: Kaplan-Meier curve showing the probability of progression of cancer among patients who stopped and resumed CPIs.

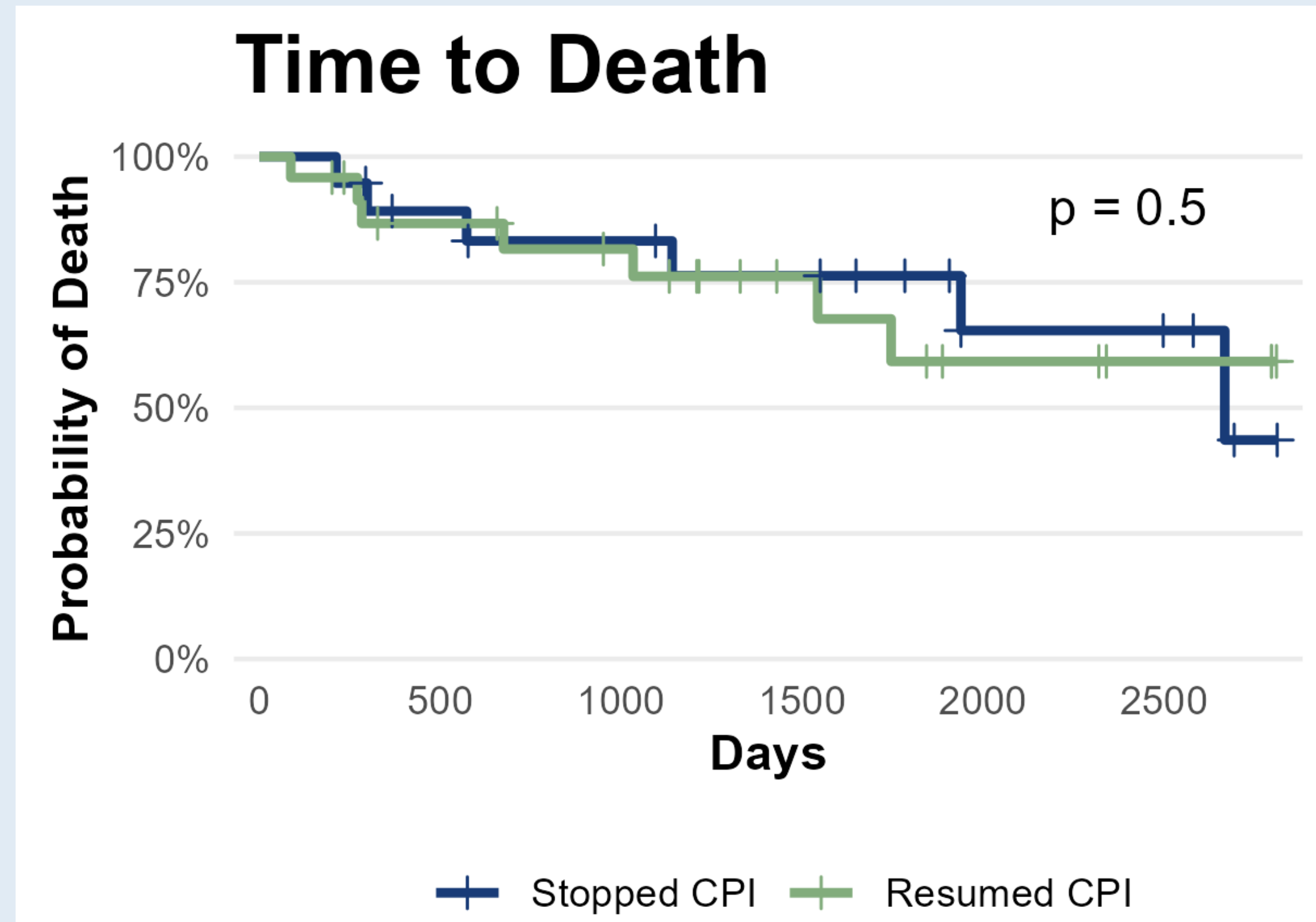


Figure 5: Kaplan-Meier curve showing the probability of death among patients who stopped and resumed CPIs.

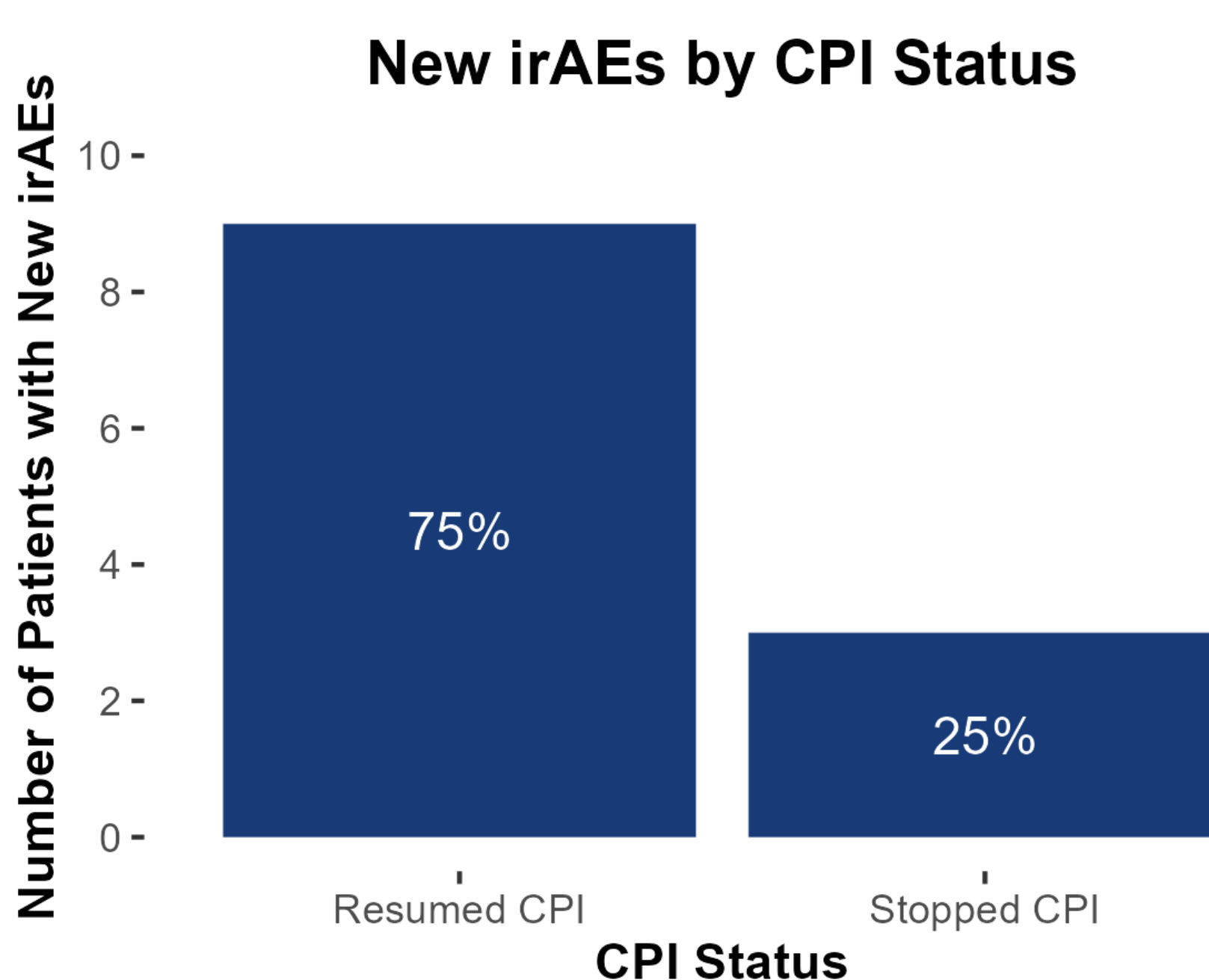


Figure 6: Number and percentage of patients that developed new irAEs among those that had resumed and discontinued CPIs.

- Of 43 CPI-DM patients, 19 (44%) discontinued CPIs, 20 (47%) promptly resumed CPI, and 4 (9%) resumed CPI after 90 days due to disease progression
- Of those that discontinued, 9 (39%) and 7 (30%) had a complete response/no evidence of disease and partial response (PR), respectively
- Among those who resumed CPIs within 90 days, 2 (10%) and 11 (55%) had no evidence of disease and PR, respectively
- Nine of 24 (38%) who resumed CPI had subsequent irAEs, among which dermatitis (n=3), arthritis (n=2), and colitis (n=2) were most common
- Three of 19 (16%) had irAEs after CPI-DM diagnosis despite discontinuing CPI (p=0.1) with development of hepatitis (n=1), sicca and sarcoidosis (n=1) and colitis (n=1)
- There was no significant difference in death (p=0.74 or cancer progression (p=0.55) between those who discontinued CPI at CPI-DM diagnosis and those who did not