

Trends In Immunotherapy And Survival Outcomes In Patients With Stage IV Cancer For Eight Major Cancers In The United States

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BACKGROUND

- Late-stage cancers have poor survival
- Recent advances in immunotherapy (IO) have transformed the management of certain historically hard-to-treat cancers
- It is unclear how IO and survival have evolved in individual advanced cancers

OBJECTIVES

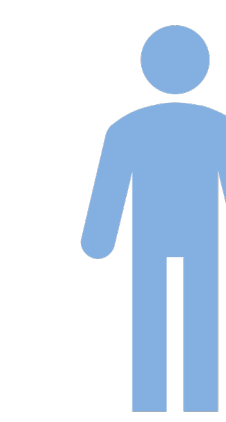
- Report IO use for high-incident stage IV cancers over time
- Evaluate trends in stage IV cancer overall survival (OS) by cancer site

METHODS

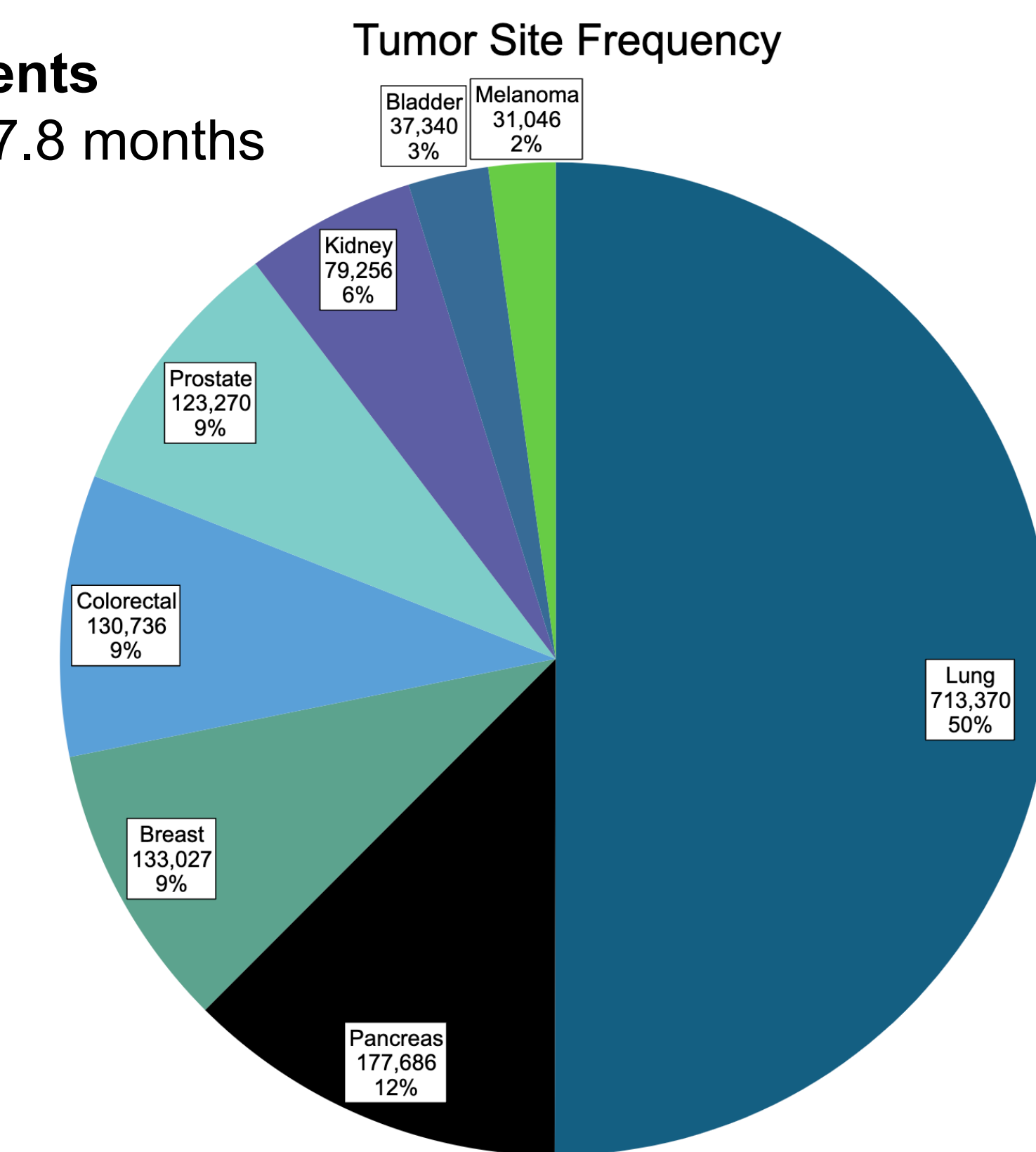
- Patients diagnosed with stage IV prostate, breast, melanoma, colorectal, kidney, bladder, lung, or pancreas cancer (2004-2020) were identified from The National Cancer Database
- Time periods were defined as [1] 2004-2010, [2] 2011-2015, [3] 2016-2019
- Kaplan-Meier methods estimated OS
- Absolute differences in 3-year OS and IO rates from periods 1 to 3 allowed for comparison among cancer sites

RESULTS

- N = 1,425,731 patients
- Median follow-up 7.8 months



55%
Mean Age
66.9 years



IMMUNOTHERAPY USE
Increased from 1.0% to 24.6%

**FROM PERIODS 1 TO 3
IN ALL SITES COMBINED...**

OVERALL SURVIVAL
3- and 5-yr OS increased (Figure 1)
3-yr: 13.3% to 26.1%
5-yr: 7.9% to 17.7%

MEDIAN SURVIVAL
Increased from 6.6 to 10.8 months

**FROM PERIODS 1 TO 3
BY CANCER SITE ...**

IMMUNOTHERAPY USE
Melanoma had the highest increase in IO from 9.5% to 58.5% (Figure 2)
Pancreas had the lowest uptake of IO from 0.3% to 1.1%

OVERALL SURVIVAL
Absolute increases in 3-year OS rates ranged from 3.4% in pancreas (1.7% to 5.1%) to 21.4% in melanoma (15.7% to 37.1%) (Figure 3)

MEDIAN SURVIVAL
Doubled in melanoma from 7.1 to 14.9 months

CONCLUSION

- The 3- and 5-yr survival of stage IV cancers has improved over time, though there is diverse progress among cancer sites
- IO use for stage IV cancers has increased over time, though less so in pancreas, prostate, and bladder cancer
- Melanoma's notable improvement in survival is likely due to immunotherapy advancements

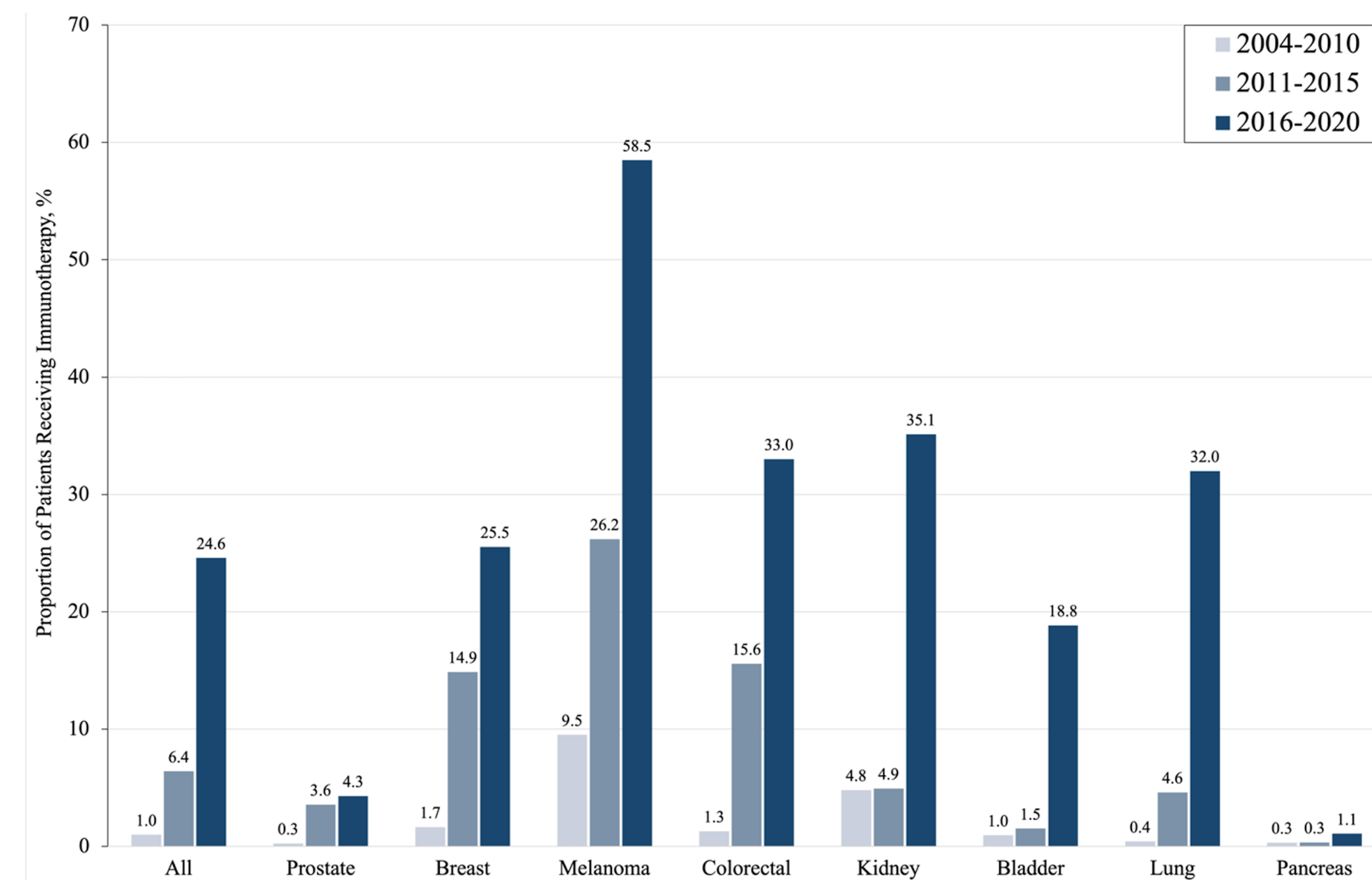
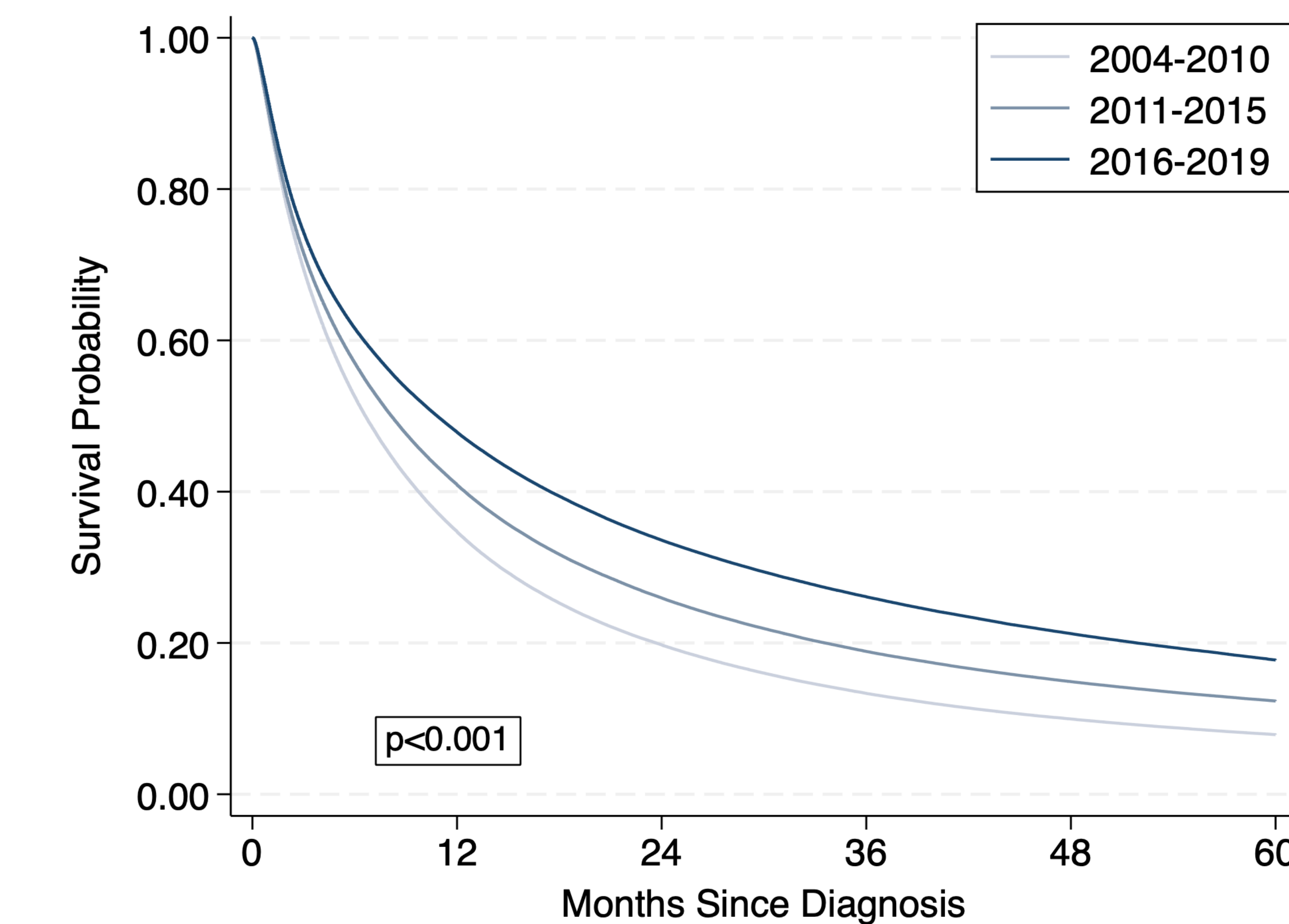


Figure 2. Immunotherapy Use By Tumor Site Per Time Period. Y axis: percentage of patients diagnosed with cancer site of interest in a particular time period who received immunotherapy out of the total number of patients diagnosed during the same year

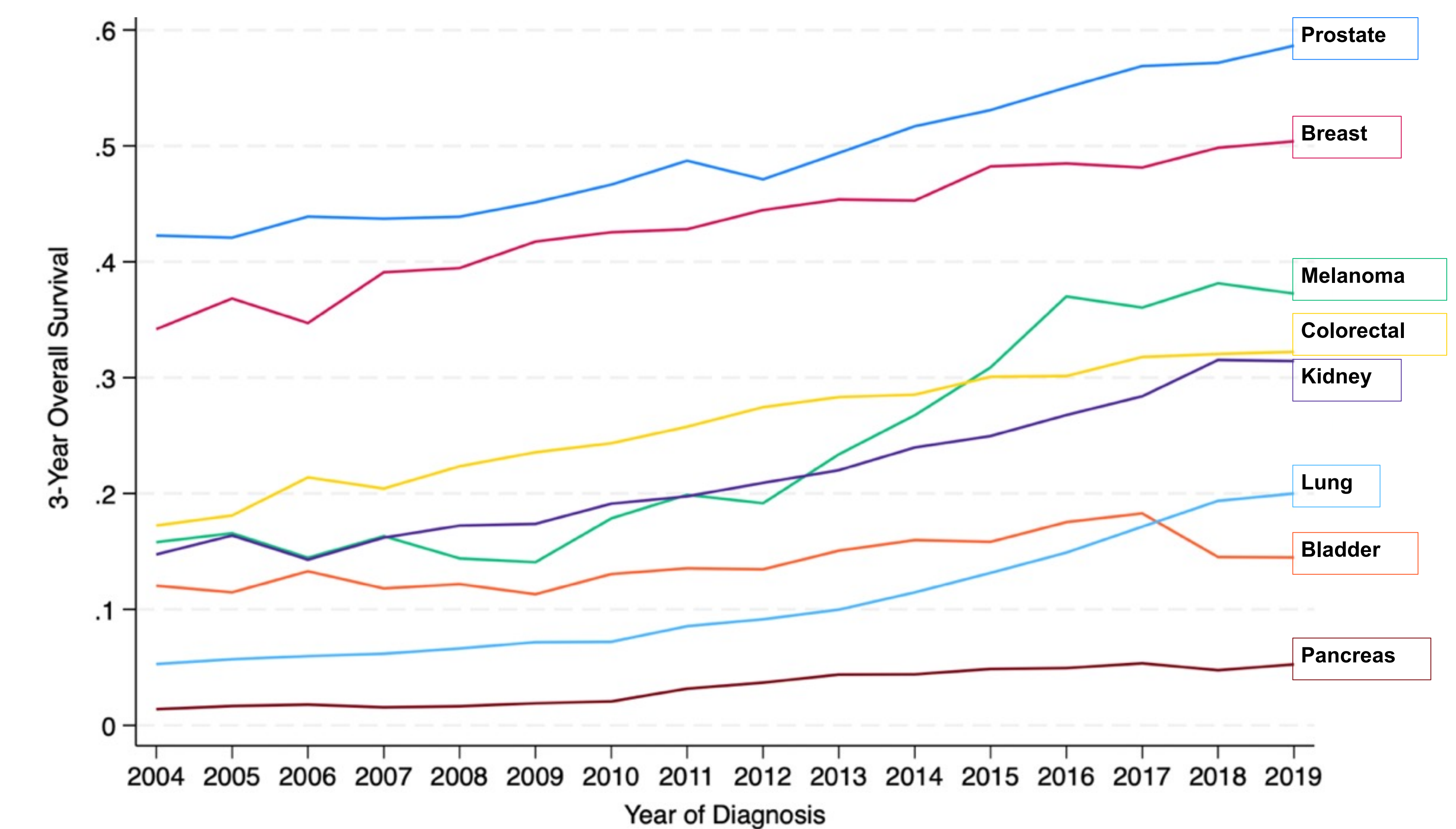


Figure 3. Trends In 3-year Overall Survival Rates In Patients With Stage IV Cancer By Tumor Site

Figure 1. Kaplan-Meier Curves Estimating Overall Survival in Patients with Stage IV Cancers, by Time Period