

“The Impact of Next Generation Sequencing Testing (NGS) on Overall Survival Rate of Advance Stage Endometrial Cancer Patients Diagnosed Between 2018-2023 in Louisiana.”

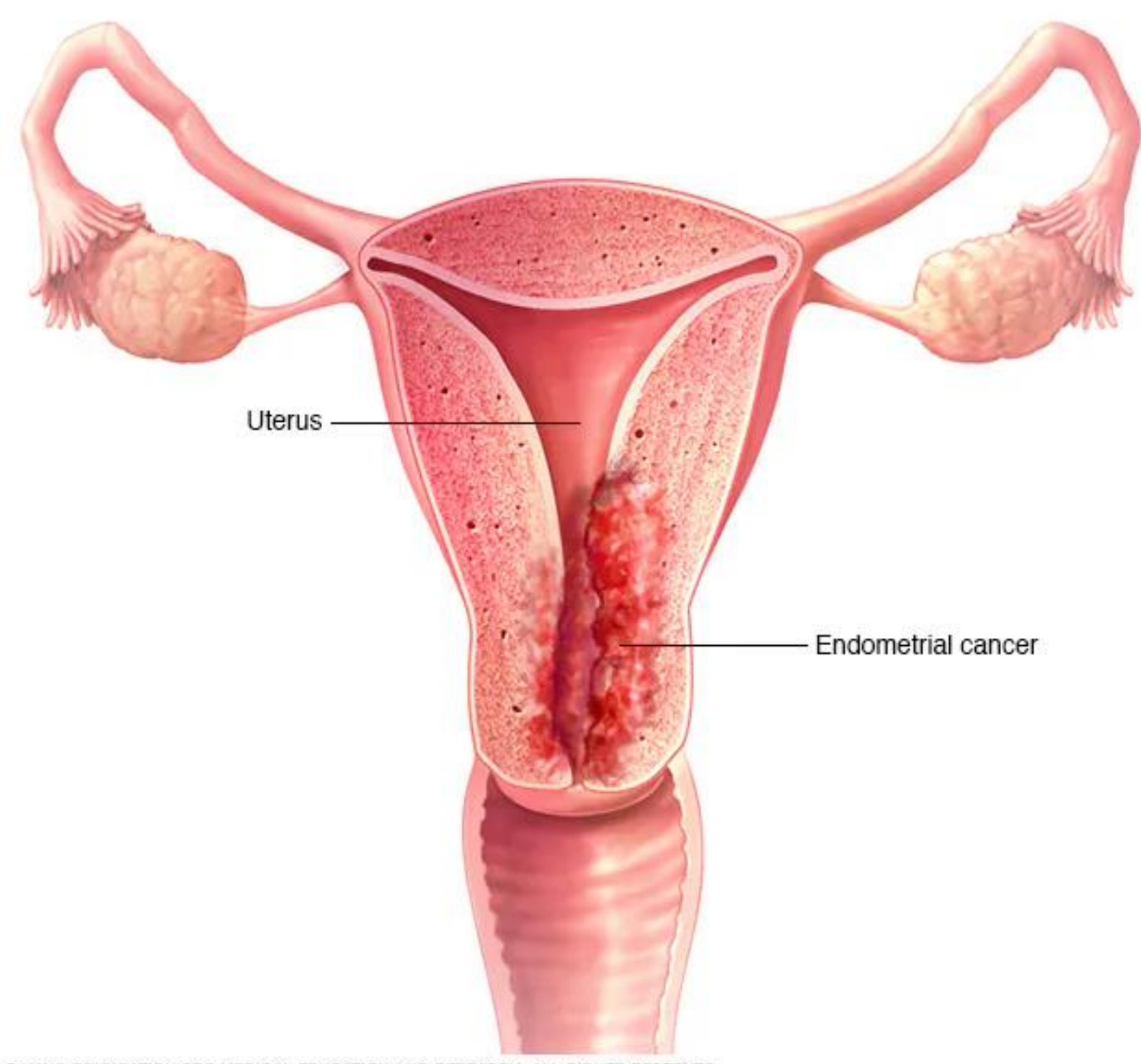
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Introduction

- Endometrial Cancer (EC) is the most common gynecological cancer. EC occurs when cancerous cells begin to grow in the endometrium layer of the uterus.



- In 2023, the National Cancer Institute estimates that 66,200 people will be diagnosed with EC, and 13,030 people will die from EC.
- The 2023 national average death rate from disease is predicted to be 19.6%.
- This rising rate has prompted public health efforts for early-stage diagnosis testing to help improve survival outcomes.
- Next Generation Sequencing (NGS) offers prognostic value by identifying genomic alterations within a DNA sequence.
- Physicians can prescribe targeted therapies that improve outcomes and limit toxicity for those tumors that test positive for certain mutations.

Objectives

- We aim to describe NGS utilization according to cancer histology and stage, and the impact of overall survival of endometrial cancer.

Methods

- A retrospective cohort study was conducted of n=127 patients with endometrial cancer, n=36 of which received NGS testing between 2018-2023.
- Chart review was conducted for n=36 patients to analyze demographic, clinicopathologic, molecular, and survival data.
- Participants for this study were recruited based upon their advance cancer stage: n=6 (16.7%) stage IVB, n=5 (13.9%) stage IIIc, n=4 (11.1%) stage IA grade I, n=4 (11.1%) stage IB, n=2 (5.6%) stage IVA, n=2 (5.6%) stage II, n=2 (5.6%) stage IIIc, n=1 (2.8%) stage IA, n=1 (2.8%) stage IA high grade, n=1 (2.8%) stage IIIc2, n=1 (2.8%) stage IV, n=1 (2.8%) stage IB high grade, n=1 (2.8%) stage IIB, n=1 (2.8%) stage IA grade 2.

Figure 1

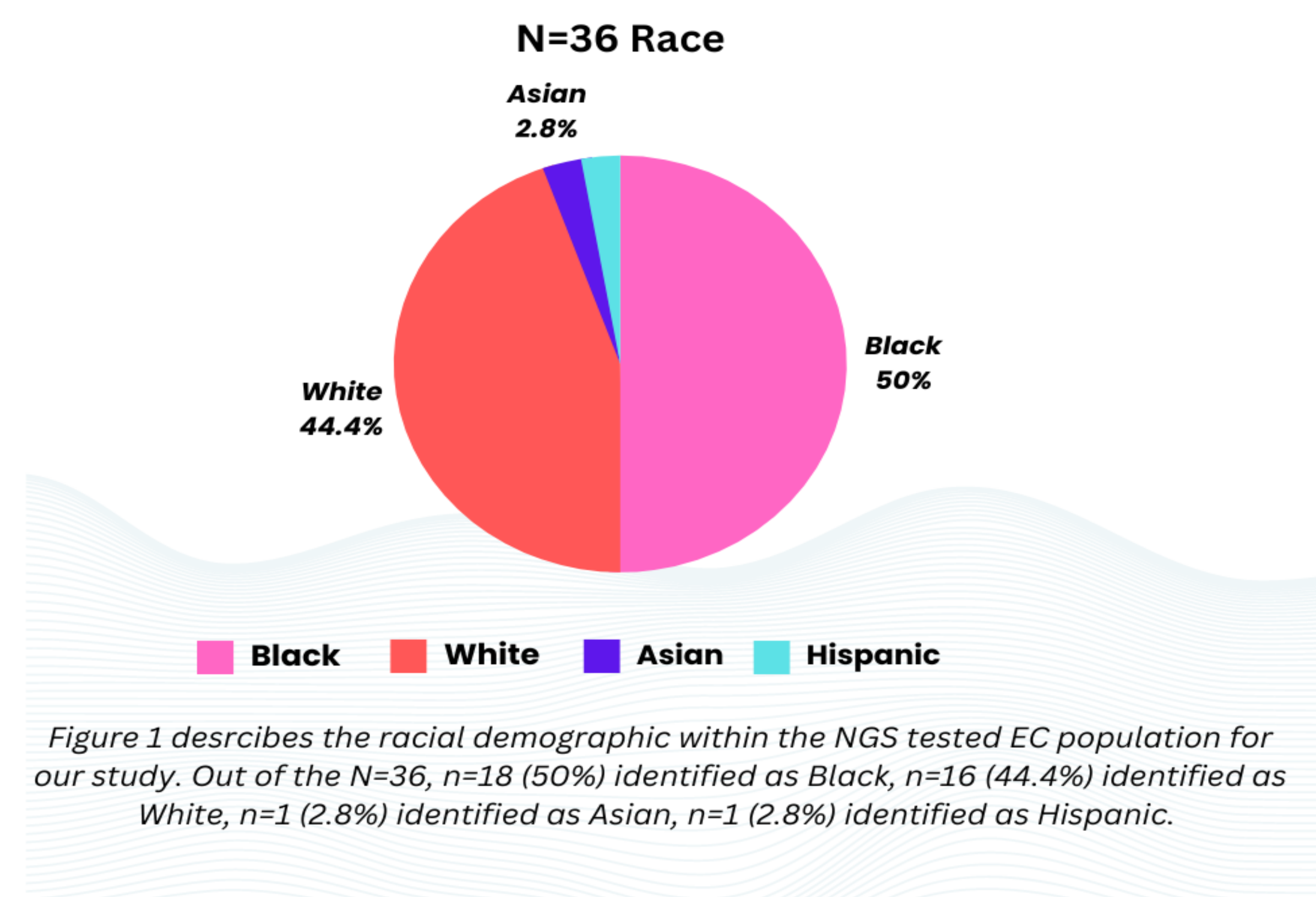


Figure 1 describes the racial demographic within the NGS tested EC population for our study. Out of the N=36, n=18 (50%) identified as Black, n=16 (44.4%) identified as White, n=1 (2.8%) identified as Asian, n=1 (2.8%) identified as Hispanic.

Figure 2

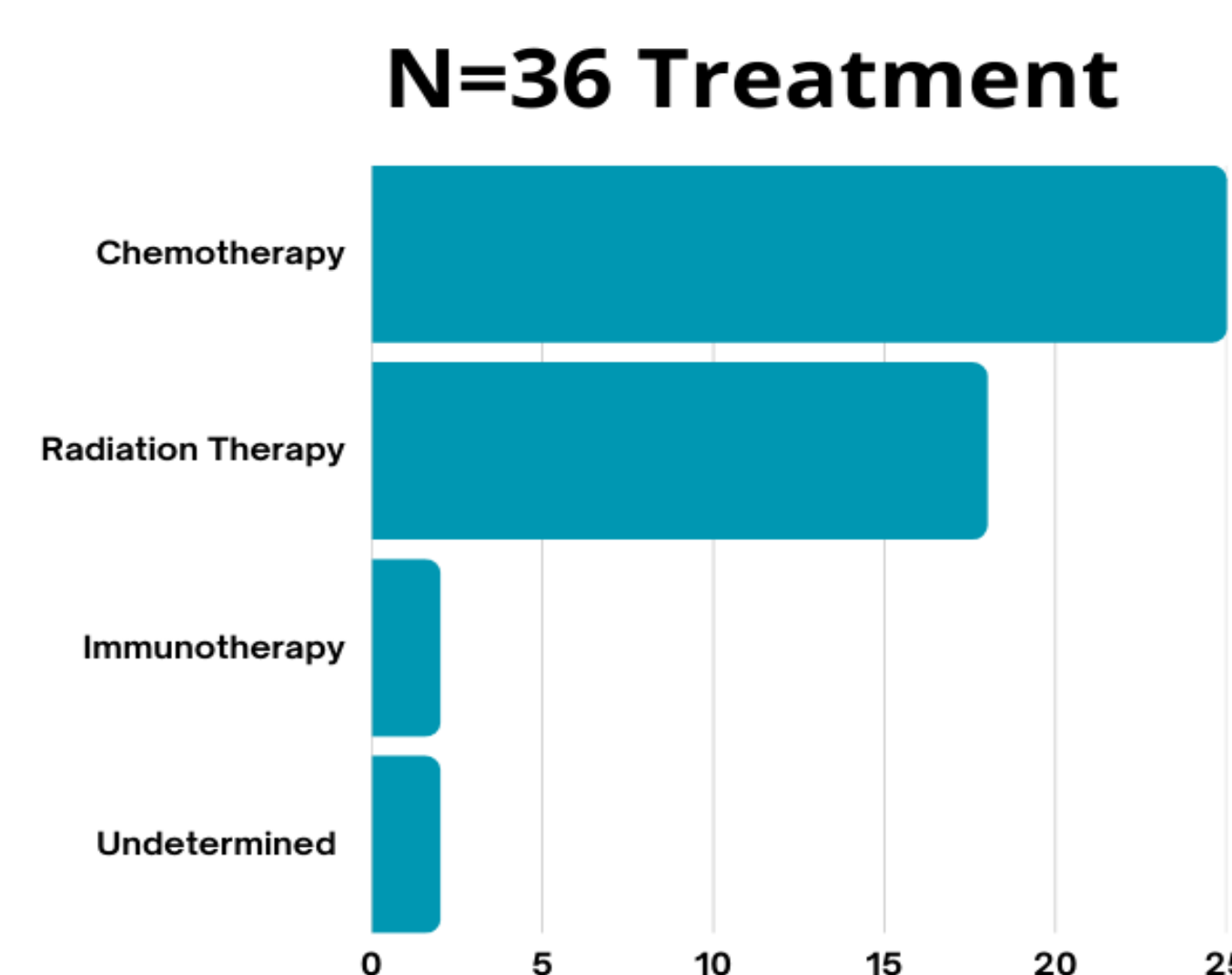


Figure 3 showcases specific treatment given to n=36 after received NGS testing results. N= 25 (69.4%) received chemotherapy, n= 18 (50%) received radiation therapy, n=2 (5.6%) received Immunotherapy, and n=2 (5.6%) had no treatment recorded on file.

Figure 3

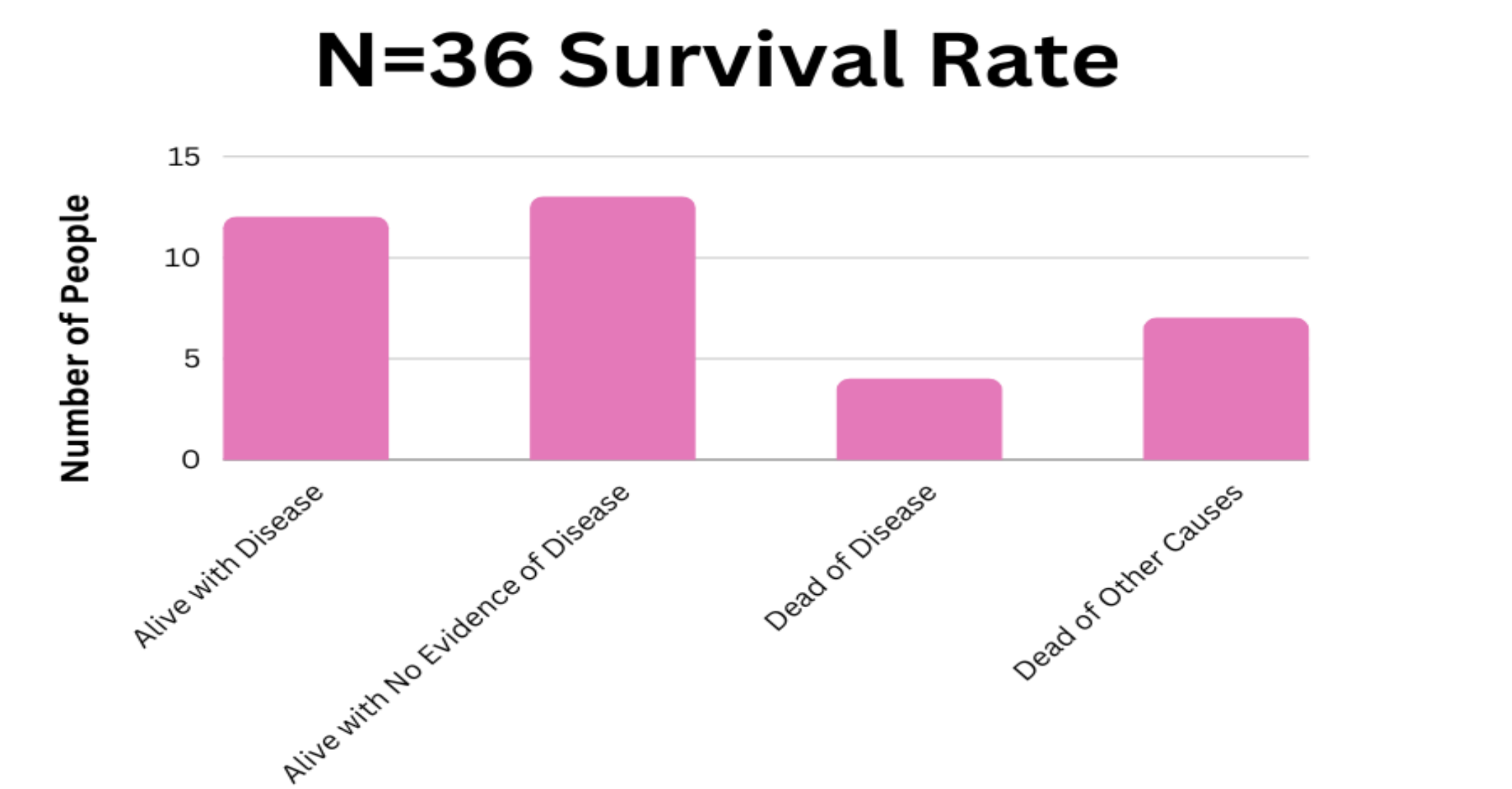


Figure 2 closely examines the overall survival rate for n=36 patients diagnosed with advance stage of EC. N= 12 (33.3%) were alive with disease, n 13 (36.1%) alive with no evidence of disease, n=4 (11.1%) dead of disease, and n=7 (19.4%) were dead of other causes.

Results

- Preliminary data of NGS testing found n=2 MMRd (14.3%), n=3 MLH1 deficient (21.4%), n=1 MSH6 deficient (7.1%), n=2 PMS2 deficient (14.3%), n=4 HER2/3 2+ or 3+ (28.6%), n=1 HER2 1+ (7.1%), n=8 ER+ (57.1%), n=6 PR+ (42.9%), n=6 PTEN (42.9%), and n=1 PIK3CA (7.1%).
- With this information providers were able to create target therapies with the use of adjuvant chemotherapy, radiation, and immunotherapy (See Figure 2) to help sustain overall survival rate (See Figure 3).
- Preliminary data shows n=4(11.1%) patients who received NGS testing died of disease.

Conclusion

- Based on our study on NGS in EC patients of South Louisiana, thus far, we describe a molecularly, racially, and ethnically heterogeneous population.
- This diversity emphasizes the need for a robust approach to the treatment of high-risk or advanced EC, for which NGS can play a central role.
- Our survival date rate by disease was lower than national average predicted for 2023.
- Higher prevalence of Black individuals to die of EC even with NGS testing. Further surveillance is needed.

References

Cancer of the Endometrium - Cancer Stat Facts. SEER. Published 2018.
<https://seer.cancer.gov/statfacts/html/corp.html>