Lung Cancer in Immunosuppressed Patients

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Background

- Lung cancer is the #1 cause of cancer-related mortality in U.S. adults
- Immune evasion is a key mechanism in tumor cell proliferation
  - Immunosuppressed patients have higher lung cancer incidences and worse lung cancer outcomes
- Success of immunotherapies supports the role of host immune function in host tumor response
  - Studies have shown immunotherapy to be safe and effective in a variety of immunosuppressed populations
  - Immunosuppressed patients are often excluded from immunotherapy trials and under-treated with immunotherapy compared to immunocompetent cohorts
- This study aimed to assess the disease course, PD-L1 expression, and utilized treatment modalities across patients with different immunocompromising conditions with lung cancer
  - **Human Immunodeficiency Virus (HIV)**
  - **Multiple Sclerosis (MS)**
  - **Solid Organ Transplant Recipients**

Methods

- Retrospective study reviewing records for 363 patients with immunocompromising conditions (HIV, MS, Solid Organ Transplant) diagnosed with lung cancer between January 2016 to July 2023
  - Patients diagnosed with immunocompromising condition after lung cancer were excluded
- Stage, Histology, Targetable Mutations, PD-L1 %, cancer therapy, date of death, and demographic information were assessed

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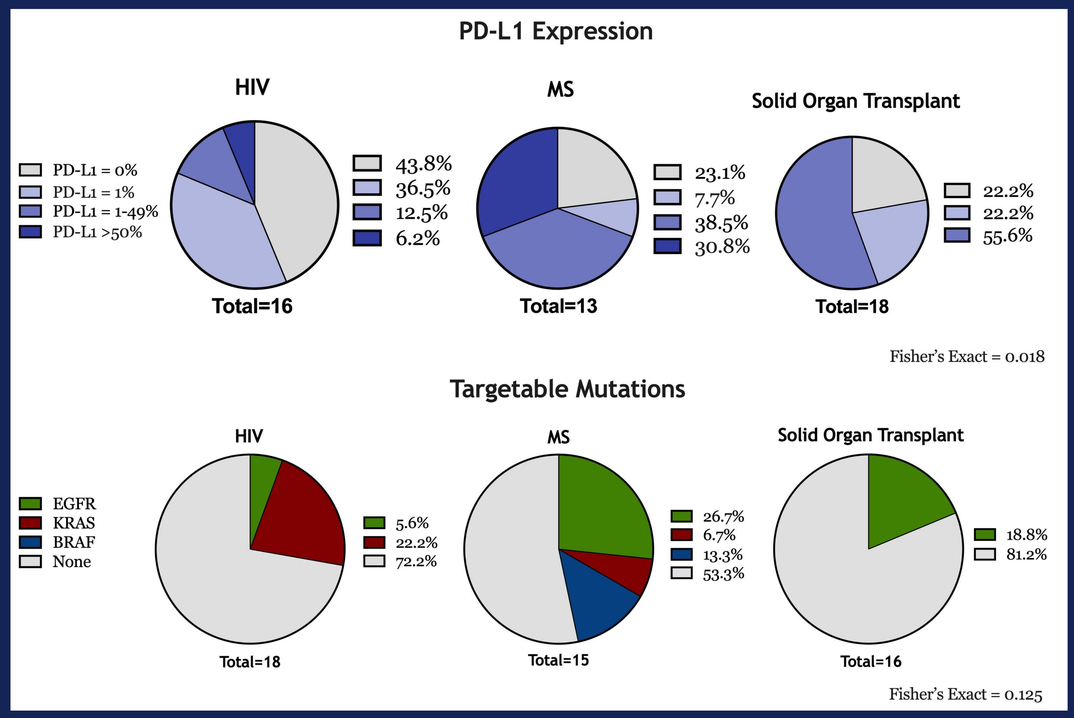
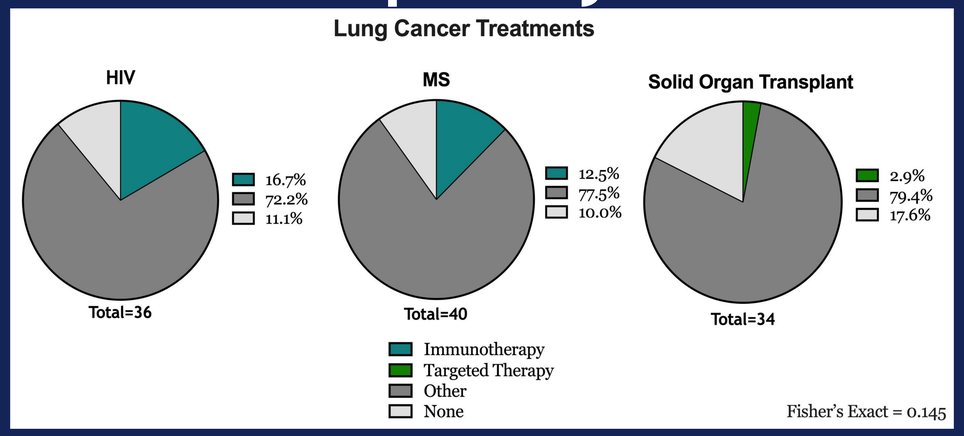
Therapeutic Targets are Present in Immunosuppressed Patients with Lung Cancer



… But Targeted Therapies are Infrequently Utilized



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Results

HIV (n=36)

- Mean age at diagnosis = 61.6 (+/- 8.7)
- 24 (66.7%) patients with HIV had undetectable viral load at diagnosis
  - 35 (99.7%) receiving HAART

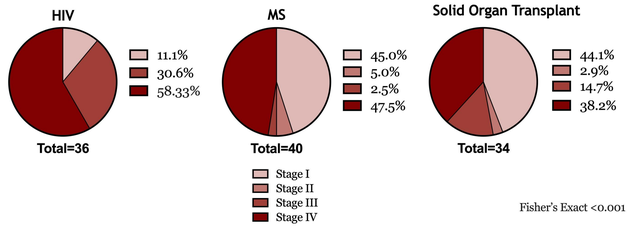
MS (n=40)

- Mean age at diagnosis = 62.8 (+/- 10.9)
- 1 patient with ALK-fusion (14 received fusion testing, 7.1%)

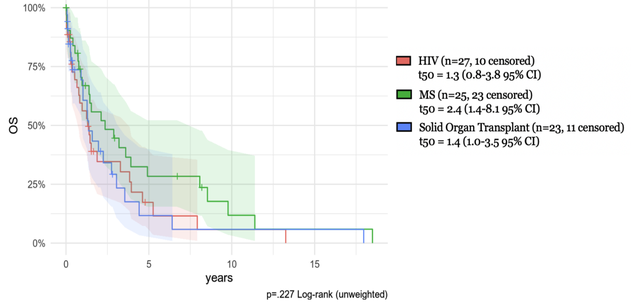
Solid Organ Transplant (n=34)

- Mean age at diagnosis = 70.1 (+/- 7.7)

Stage at Diagnosis by Condition



Overall Survival By Condition



Conclusions

- Lung cancer has late presentation and poor overall survival in patients with pre-existing immunocompromise
- Targetable mutations are present but not often utilized

Connection to Healthcare Disparities

- Lung Cancer and Immunocompromise disproportionately effect marginalized communities
  - HIV: 55.2% Black
  - MS: 70% female
  - Solid Organ Transplant: 32.4% Black
- Knowledge of interplay of immunocompromise and lung cancer can guide future guidelines and alleviate disparities in outcomes