Stagnant Survival in Elderly Patients with Peripheral T-Cell Lymphoma: A SEER-Based Analysis (2000–2015)

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Introduction

- **Current state**: Peripheral T-cell lymphoma (PTCL) is a rare, aggressive lymphoma with poor outcomes. Older adults (≥65) carry a disproportionate burden and are frequently excluded from clinical trials.
- **Issue**: Between 2000–2015, multiple single-agent therapies for relapsed PTCL were FDA-approved (pralatrexate 2009, romidepsin 2011, belinostat 2014). However, their real-world impact on elderly survival remains uncertain.
- **Gap**: Survival trends in elderly PTCL at the population level are poorly characterized.
- **Why it matters**: Understanding whether survival improved during this period is essential to evaluate the translation of therapeutic advances into real-world benefit for older adults.
- **Objective**: To determine whether 5-year cause-specific survival in elderly PTCL patients improved between 2000 and 2015 using SEER registry data.

Methods

- **Design & Data**: Retrospective cohort using SEER Research Plus (17 registries; 2000–2020 submission).
- **Population**: Adults ≥65 years with first primary PTCL (ICD-O-3: 9702, 9705, 9714).
- **Window**: Diagnosed 2000–2015 to ensure 5-year follow-up.
- Outcomes: Five-year cause-specific survival (primary); median survival (secondary).
- **Analysis**:
  - Annual survival estimates (2000–2015).
  - Grouped eras: 2000–2005, 2006–2010, 2011–2015.
  - Linear regression for survival trends (slope, R^2, p-value).
- **Note**: Estimates are aggregate from SEER survival tables, not individual-level KM curves.

Results

- **Cohort**: 2,525 elderly PTCL patients (≈825 per era).
- **Year-by-year survival**:
  - As shown in **Figure 1**, 5-year cause-specific survival fluctuated from 28%–40% across 2000–2015, with wide 95% CIs and no consistent upward trajectory.
  - Linear regression confirmed a flat trend **(slope ≈ +0.07% per year; R^2 ≈ 0.008; p = 0.742).**
- **Era-grouped survival**:
  - In Figure 2, inverse-variance–weighted 5-year survival was 32.8% (2000–2005), 33.2% (2006–2010), and 35.0% (2011–2015) with overlapping 95% CIs, indicating no meaningful difference between eras.

Results Cont'd

Figure 1: Year-by-year survival + CI + trendline + stats

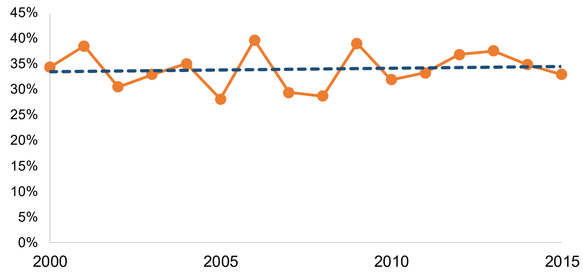
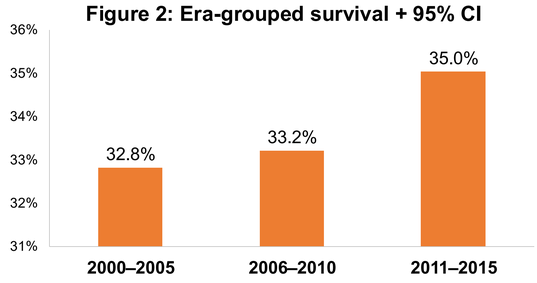


Figure 2: Era-grouped survival + 95% CI



Discussion

- Figures 1 and 2 together demonstrate that elderly PTCL survival did not improve from 2000–2015.
- The broad confidence intervals in Figure 1 reflect small annual strata, while the era averages in Figure 2 smooth year-to-year noise yet still show no signal of improvement.
- This pattern suggests that relapsed single-agent approvals in this era did not translate into population-level benefit for older adults—patients who often have comorbidities, lower treatment tolerance, and limited trial access.
- These findings provide a pre-2016 benchmark against which post-2016 frontline strategies can be evaluated.

Conclusion

- **Conclusion**: Elderly PTCL 5-year survival remained ~30% with no improvement from 2000–2015 (Figures 1–2).
- **Clinical implications**: Reliance on relapsed single-agent therapies was insufficient in this population. Frontline regimens must be tolerable and elderly-tailored; trial designs should systematically include older adults; and real-world monitoring should verify that new strategies produce survival gains.
- **Limitations**: SEER lacks treatment detail; histologies pooled; modest annual N; analysis uses aggregate survival tables (not patient-level KM).
- **Future directions**: Reassess survival in the post-2016 era; link treatment exposure to outcomes (SEER-Medicare/claims); perform histology-specific, elderly-focused real-world studies.

References

1. Vose J, et al. J Clin Oncol. 2008;26:4124-30.
2. O'Connor OA, et al. J Clin Oncol. 2011;29:1182-9.
3. Coiffier B, et al. J Clin Oncol. 2012;30:631-6.
4. O'Connor OA, et al. J Clin Oncol. 2015;33:2492-9.
5. Horwitz S, et al. N Engl J Med. 2019;380:2103-14.

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