Factors Associated with Time to Treatment Initiation for Newly-Diagnosed Multiple Myeloma Patients in an Academic Medical System

RWD160

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Introduction

- Multiple myeloma is a hematologic cancer. About 36,000 new cases will be diagnosed and 10,800 death will occur annually in the United States.
- Clinical guidelines recommend immediate treatment initiation once symptomatic multiple myeloma is confirmed. Delays in TTI can adversely impact prognostic outcome.
- Real-world evidence on time to treatment initiation (TTI) for multiple myeloma (MM) therapy remains limited

Objectives

- To characterize real-world treatment patterns, identify sociodemographic and clinical determinants of TTI in newly diagnosed MM patients across a statewide academic medical system.

Methods

Data Source

- Registry data from six cancer centers in University of Maryland Medical System were used to conduct a retrospective cohort study of MM patients diagnosed from 2018 through 2024.

Population

- Patients with diagnosis and first treatment at different facilities, diagnosis of smoldering myeloma, without documented treatment, or treatment initiation over 90 days were excluded.

Statistical Analysis & Outcomes

- Kaplan-Meier was used to estimate TTI, defined as the date of diagnosis to frontline treatment initiation.
- Univariate and multivariable Cox regression were used to evaluate factors associated with TTI, with hazard ratio (HR) and 95% confidence interval (CI) reported. Sociodemographic factors included age, sex, race, marital status, and insurance status. Clinical factors included cytogenetics risk level, serum albumin (Albumin Baseline), and lactate dehydrogenase (LDH Baseline) levels. To address the violation of the proportional hazards (PH) assumption, baseline β2-macroglobulin was stratified.

Results (1)

- Among 601 patients, median TTI was 27 days (95% CI: 25-30), and 12% (95% CI: 9.6%-14.9%) remained untreated by day 60. Significant univariate associations included age and all clinical factors.

Figure 1. Cohort inclusion of multiple myeloma patients from six University of Maryland medical centers (2018–2024)

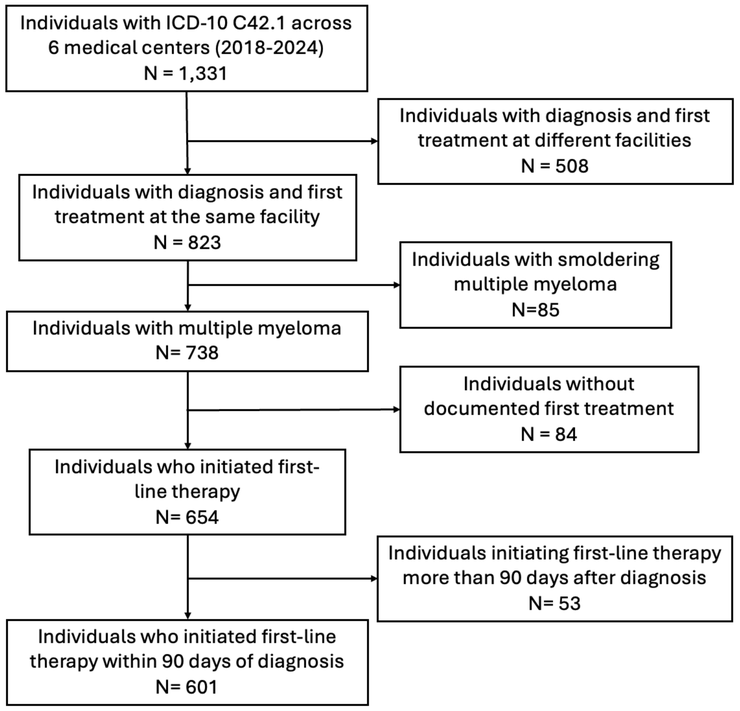


Figure 2. Kaplan-Meier curve of time to treatment initiation in individuals with newly diagnosed multiple myeloma

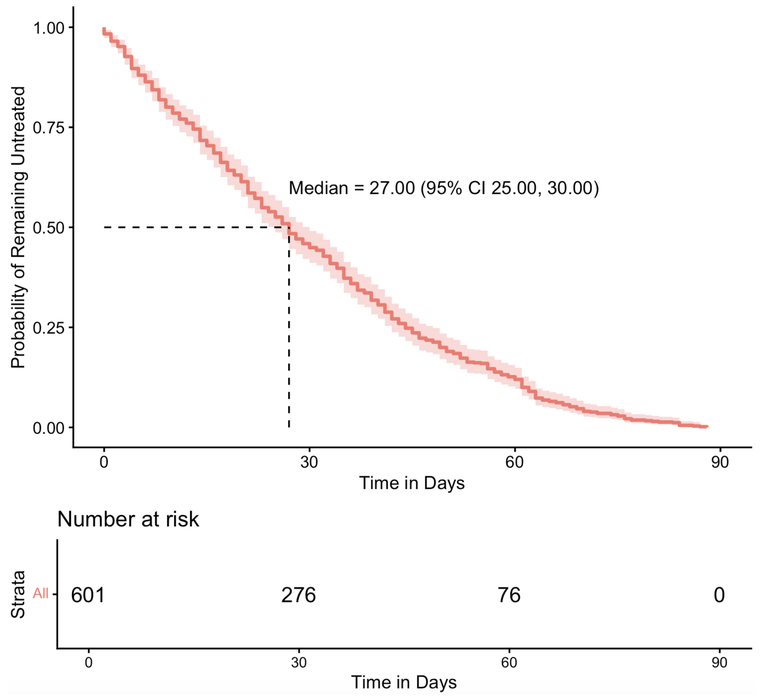
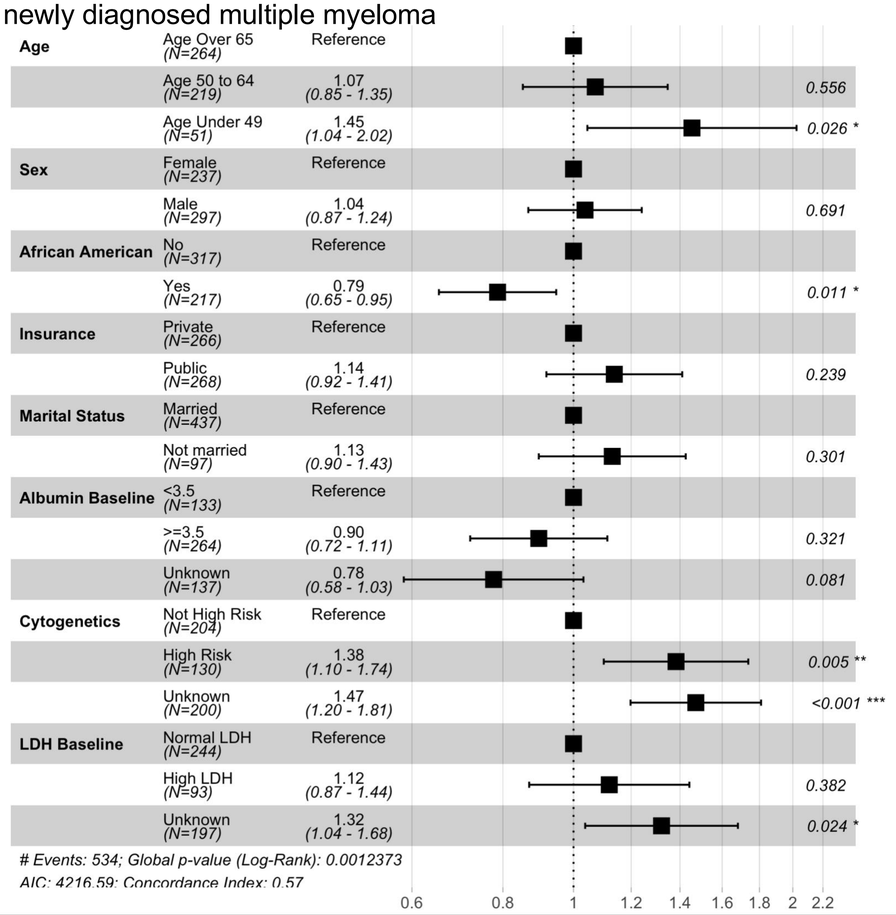


Figure 3. Hazard ratios for time to treatment initiation in individuals with newly diagnosed multiple myeloma



Results (2)

- In the multivariable Cox model, patients younger than 49 years had shorter TTI than those aged 65 years or older (HR = 1.45, 95% CI: 1.04–2.02). American African (AA) patients had longer TTI than non-AA patients (HR = 0.79, 95% CI: 0.65–0.95). High-risk and unknown cytogenetics were associated with shorter TTI versus non-high-risk cytogenetics (HR = 1.38, 95% CI: 1.10–1.74; HR = 1.47, 95% CI: 1.20–1.81, respectively). Unknown LDH status was also associated with shorter TTI compared with normal LDH (HR = 1.32, 95% CI: 1.04–1.68).

Conclusion

- TTI for MM was generally rapid and appeared to be driven more by clinical severity than sociodemographic factors, although differences by age and AA status suggest treatment initiation was not fully uniform across subgroups. Future research should assess generalizability and long-term outcomes.

Sponsorship

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