Survival Trends and Prevalence Disparities in Refractory Anemia with Ringed Sideroblasts

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INTRODUCTION

Ringed sideroblasts (RS) are erythroid precursors with abnormal perinuclear mitochondrial iron accumulation. Refractory anemia with ringed sideroblasts (RARS) is a lower risk myelodysplastic syndrome characterized by <5% bone marrow blasts, <1% peripheral blood blasts, and ≥ 15% bone marrow RS (≥ 5% in presence of SF3B1 mutation).

AIM

To determine the epidemiology and survival trends for refractory anemia with ringed sideroblasts.

METHOD

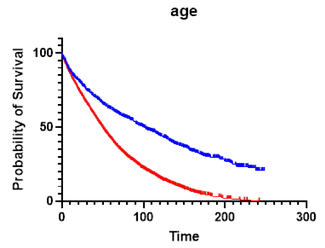
RARS cases were collected from Surveillance, Epidemiology and End Result database Research Plus Data, 17 Registries, Nov 2023 Sub (2000-2021), using the ICD Code 9982/3. The analysis was stratified based on age, sex, race, year of diagnosis, income and treatment with chemotherapy. Survival curves were compared using the Log-Rank test (GraphPad Prism).

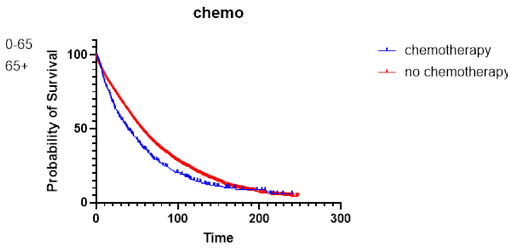
RESULTS

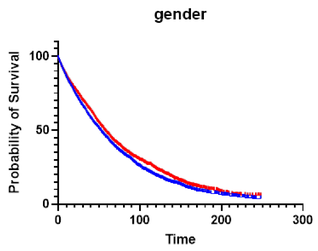
- Total 5569 cases of RARS were identified, of which 56% were males.
- The malignancy was most seen in Caucasian (81.1%) followed by Black (6.5%), Hispanics (6.03%), Asians/Pacific Islanders (5.2%), and Alaskans/American Indians and unknown race <1% each.
- Median age of diagnosis was 76 years.
- Overall median of survival (MoS) was 54 months, with a 1-year OS of 83.65(CI 95%, 82.64-84.61), 3-year OS of 62.85%(CI 95%, 61.5-64.16), and 5-year OS of 45.78%(CI 95%, 44.36-47.18).
- MoS were significant for
  1. Age: 0-65 years (101), 65+ years (50)(p <0.0001)
  2. Gender: males (51) and females (57)(p 0.0003)
  3. Race: White (54), Black (50), Hispanics (53), Asian/Pacific Islanders (60), Alaskan/Native Americans (60), and unknown race (undefined)(p <0.0001)
  4. Income: <70,000$ (50), 70K-100K (55), and >100K (62)(p 0.0002).
  5. Treatment based survival analysis showed: chemotherapy (39) vs no chemotherapy (56)(p <0.0001).

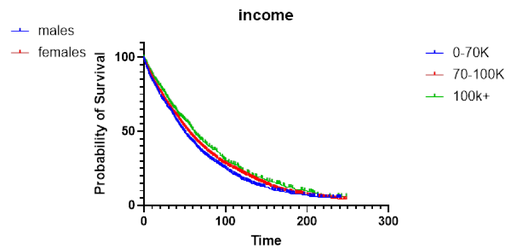
  Survival analysis for the year of diagnosis was insignificant.

Undefined MoS were observed due to lack of significant numbers of death in those categories to calculate 50% survival probability.









CONCLUSION

- Refractory anemia with ringed sideroblasts favors male gender, and Caucasian race.
- Superior survival outcomes were observed with younger age, female gender, and Asian/PI or Alaskan/AI origin.
- **This is the first study to our knowledge to establish association of higher survival in RARS with increasing income bracket.**
- Lower survival with the use of chemotherapy could be attributed to its utilization for more aggressive disease, rendering overall lower survival in that cohort anyways.

CONTACT INFORMATION

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