SURVIVAL AND OUTCOMES OF NEWLY-DIAGNOSED MULTIPLE MYELOMA PATIENTS STRATIFIED BY TRANSPLANT STATUS DIAGNOSED BETWEEN 2007-2018: REAL-WORLD ANALYSIS FROM THE CANADIAN MYELOMA RESEARCH GROUP DATABASE

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Background

Considerable progress has been made in therapeutic options for multiple myeloma (MM). However, data confirming translation of these successes into routine clinical settings, as well as outcomes from large data sets spanning multiple lines of therapy, are limited. Understanding such real-world data can provide key insights into knowledge and clinical gaps which could be targeted for future optimization. The Canadian Myeloma Research Group Database (CMRG-DB) is a prospectively maintained disease-specific database with >7500 patients from 15 academic sites across Canada with legacy data from 2007.

Aims

The aim was to provide high-level outcomes for all patients within the database, stratified by frontline autologous stem cell status (ASCT), in order to: 1) evaluate the rates of early mortality (<6 months and <1 year); 2) understand the trends in overall survival (OS) over time; and 3) evaluate OS by line of treatment.

Methods

All patients in the database diagnosed with MM from 2007-2018 who received therapy for active MM were included in this analysis. Rates of early mortality (<6 months and <1 year) were summarized for the cohort stratified by the use of frontline ASCT. Patients were analyzed by period of treatment in 3-year increments beginning in 2007 and by line of therapy. OS was measured from the time of therapy initiation to death or last follow-up and was analyzed using the Kaplan-Meier method.

Results

We identified 5154 patients meeting the study entry criteria. Of these, 3030 patients (58.79%) received an upfront ASCT and 2124 (41.21%) did not. At diagnosis, the median age for the entire cohort was 64 years (range 26-98) and 58.6% were males. The presenting features of anemia, lytic bone disease, renal failure and hypercalcemia were noted in 57.6%, 46.5%, 18.7% and 12.4% of patients, respectively. A total of 28.3%, 36.3% and 35.4% had ISS stage I, II and III disease, respectively. High-risk cytogenetics by FISH [t(4;14), t (14;16) and 17p deletion] were present in 33% of patients.

The 6-month and 1-year mortality rates were 0.2% and 2.0% for ASCT patients and higher at 7.8% and 13.8% for non-ASCT patients. The median OS was 125.3 months and 54.3 months for those that did and did not receive frontline ASCT, respectively. OS increased over time among the ASCT cohort with a clear change after 2013 (Figure 1A). Improvements were also noted among the non-ASCT cohort after 2010 (Figure 1B). When the cohort was stratified by line of treatment, OS decreased from 1st - to 3rd - line, with a notable drop in OS noted in 4th line and beyond among both the ASCT and non-ASCT cohorts (Figure 1C and 1D). Further details regarding the spectrum of regimens at each line will be provided.

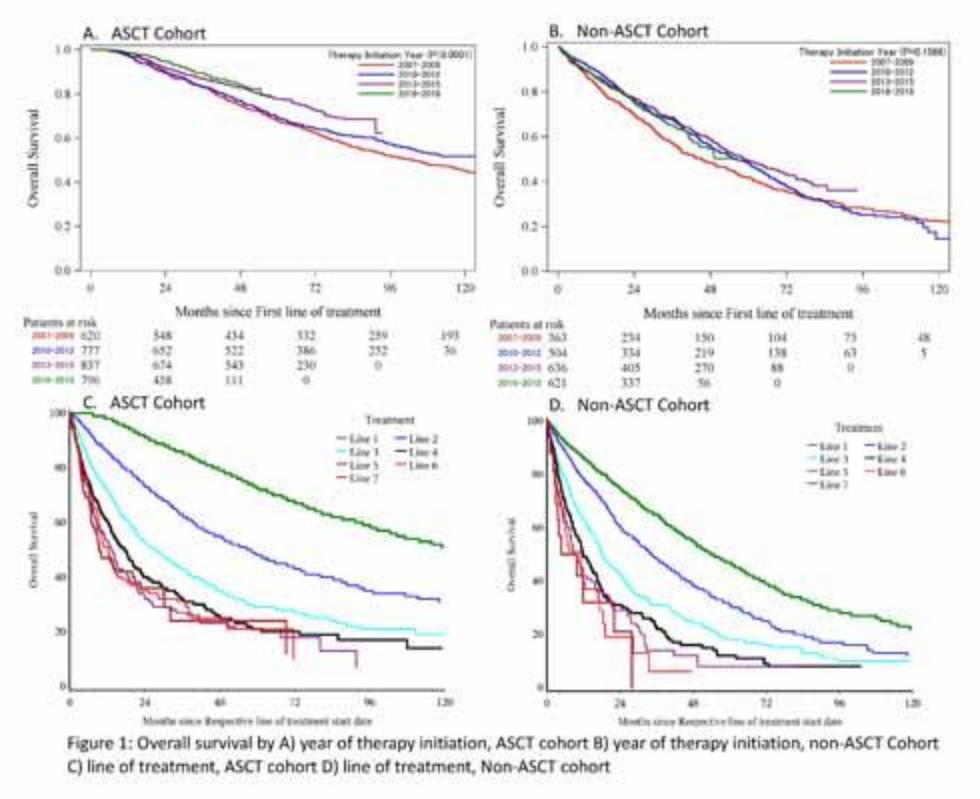

Figure 1: Overall survival by A) year of therapy initiation, ASCT cohort B) year of therapy initiation, non-ASCT Cohort C) line of treatment, ASCT cohort D) line of treatment, Non-ASCT cohort

Conclusion

The CMRG-DB is one of the largest prospectively maintained real-world MM data sets. Advancements in outcomes are notable, coinciding with the widespread adoptions of novel agents in frontline therapy (~2010) and routine lenalidomide maintenance (~2013) in Canada. Most of the improvement has been in lines 1-3 after which survival remains relatively short. Although notable gains have been made for ASCT patients with low rates of early mortality and improvements in OS, outcomes for non-ASCT patients lag and are targets for future optimization. The database serves as a useful tool to measure the impact of novel treatment approaches as they are introduced in routine clinical use, especially in advanced disease which continues to represent an area of unmet need.