Trends in Bone Marrow Transplantation and In-Hospital Outcomes in Multiple Myeloma: Insights From the National Inpatient Sample (2016–2022)

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Introduction

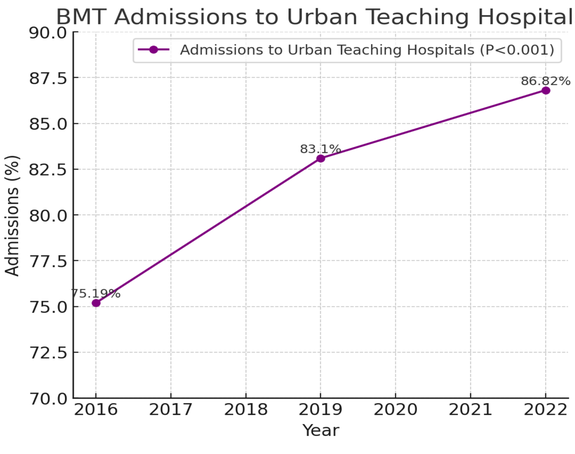
Multiple myeloma (MM) is a malignancy of plasma cells characterized by clonal proliferation. It predominantly affects older adults, with fewer than 1% of cases diagnosed before age 35. Bone marrow transplant (BMT) remains a crucial treatment option for eligible patients.

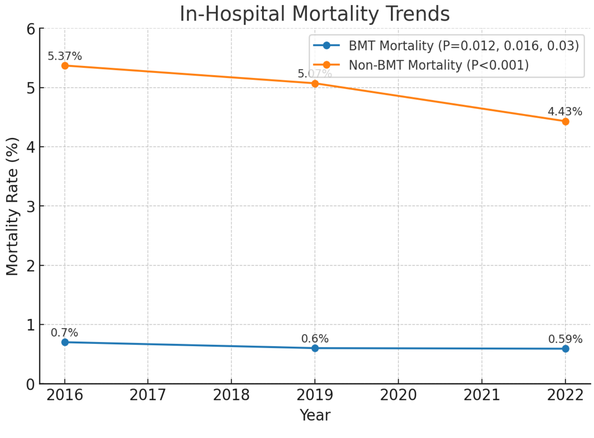
Aim

This study evaluates comorbidities, in-hospital mortality, and healthcare burden among hospitalized MM patients, comparing those who received BMT to those who did not.

Methods

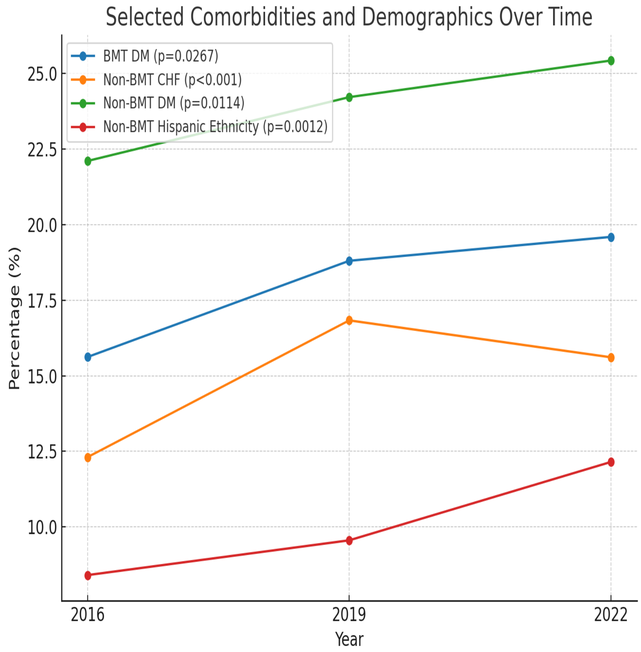
We used the 2016, 2019, and 2022 National Inpatient Sample databases to identify patients admitted with a primary diagnosis of MM. Based on ICD-10 codes, patients were divided into BMT and non-BMT groups. We analyzed trends in demographics, comorbidities, length of stay, hospital charges, and mortality across the three years.





Results

A total of 63,715 MM patients were identified (20,820 in 2016; 21,025 in 2019; 21,870 in 2022). BMT rates were 27.21%, 28.09%, and 26.61% across the respective years. The mean age in the BMT group was 61.24 years, with 43.33% female, compared with 67.2 years and 44.61% female in the non-BMT group. Prevalences of cerebrovascular accident, sepsis, chronic kidney disease, acute coronary syndrome, pulmonary embolism, acute kidney injury) remained unchanged.



Discussion

Mortality rates declined significantly in both groups, likely due to advances in MM treatment. Lower mortality in the BMT group may reflect patient selection factors such as younger age and fewer comorbidities rather than transplant benefit alone. Further randomized studies are needed to clarify the direct impact of BMT on outcomes.