

Updated Incidence : Trends in Myelodysplastic Syndrome: An Analysis of the SEER Database

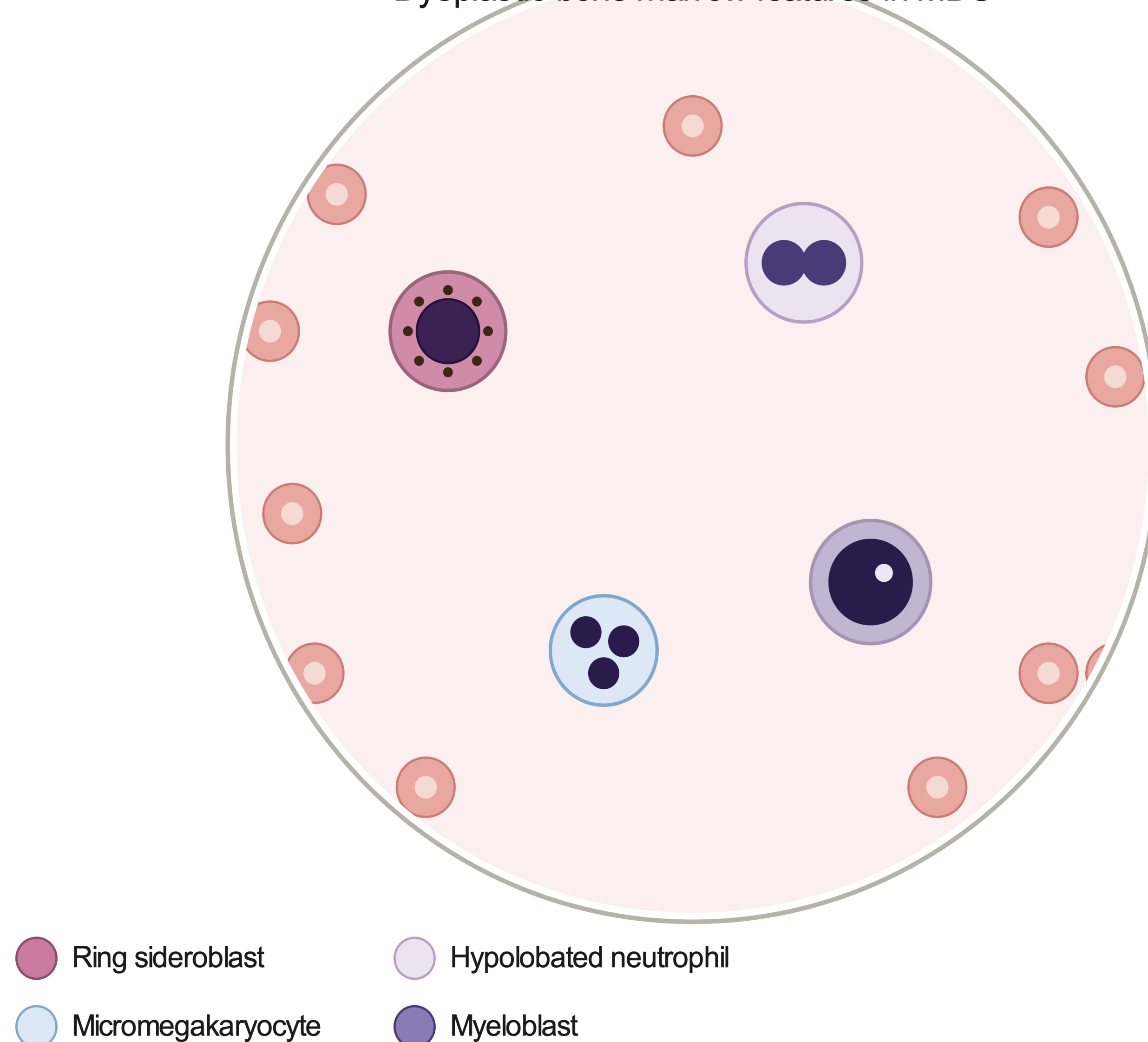


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Background

Myelodysplastic syndrome (MDS) represents a heterogeneous group of clonal hematopoietic stem cell disorders characterized by ineffective hematopoiesis, peripheral cytopenias, and an increased risk of transformation to acute myeloid leukemia (AML). It predominantly affects older adults and represents a significant cause of cancer-related morbidity and mortality. In this study, we provide updated trends in MDS incidence using the Surveillance, Epidemiology, and End Results (SEER) database

Dysplastic bone marrow features in MDS



Methods

Using SEER*Stat software, we extracted data from the SEER database spanning the years 2001 to 2021. Joinpoint regression analysis was performed to identify statistically significant changes in MDS incidence trends over time, with annual percent change (APC) reported for each segment

Results

A total of 146227 cases met the inclusion criteria, representing all diagnosed cases of MDS in the SEER database from 2001 to 2021. Of these, 82361 (56.3%) were male patients and 63866 (43.7%) were female patients. The overall age-adjusted incidence rate was 4.4 per 100000 person-years. Joinpoint regression identified 4 joinpoint reflecting significant temporal variation in MDS incidence from 2001 to 2021. Incidence rates increased significantly between 2001 and 2004 (APC, +8.52%; $P < 0.05$), followed a more gradual rise from 2004 to 2007 (APC, +4.22%; $P < 0.05$). A period of relative stabilization was observed from 2007 to 2010 (APC, +0.97%; $P < 0.05$). After 2010, incidence rates declined, with a significant decrease from 2010 to 2014 (APC, -4.41%; $P < 0.05$) and a continued significant decline from 2014 to 2021 (APC, -3.35%; $P < 0.05$). MDS incidence peaked approximately in 2010 before demonstrating a sustained downward trend through the end of the study period.

Conclusion

MDS incidence demonstrated significant temporal variation over the study period, with an initial rise peaking around 2010 followed by a sustained and statistically significant decline through 2021. These findings reflect evolving epidemiologic patterns of MDS and underscore the importance of continued population-level surveillance. Further investigation is warranted to identify factors driving the observed decline, including changes in diagnostic coding practices, evolving classification criteria, and shifts in SEER reporting methodology.

