

Real-World Experience With Imetelstat in Lower-Risk Myelodysplastic Syndromes: Insights From United States Claims Data

Brian Sweet,¹ Jessy Thomas,¹ Eros Papademetriou,²

Rohit Tyagi,³ **Joseph Eid**¹

¹Geron Corporation, Foster City, CA, USA; ²Inizio Ignite Putnam, New York, NY, USA;

³Inizio Ignite Putnam, Gurugram, Haryana, India

The Japanese Society of Hematology

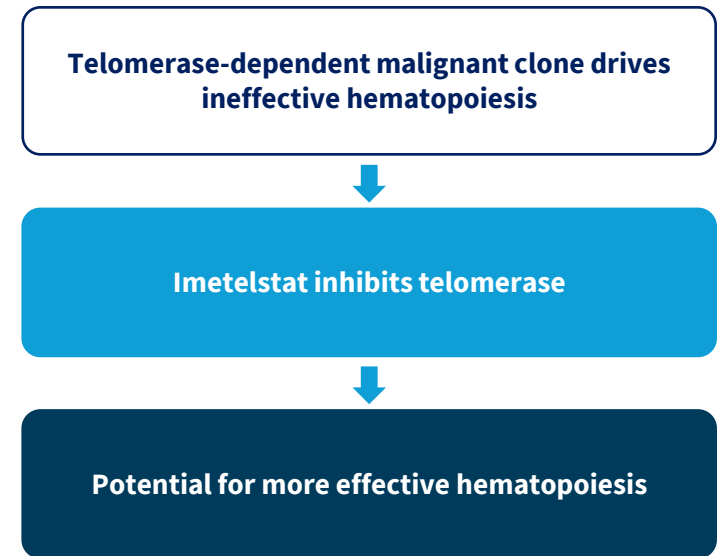
Conflicts of Interest

- Authors have the following conflicts of interest to disclose:

(1) Employment/leadership position/advisory role	BS, JT, and JE (Geron Corporation); EP and RT (Inizio Ignite Putnam)
(2) Stock ownership or options	BS, JT, JE (Geron Corporation)
(3) Patents, royalties/licensing fees	No
(4) Honoraria	No
(5) Manuscript fees	No
(6) Research funding	No
(7) Subsidies or donations	No
(8) Endowed departments by commercial entities	No
(9) Travel fees, gifts, and others	No
(10) Supplied with reagents/drugs, etc	No
(11) Off-label use	No

Introduction

- **Imetelstat is a first-in-class telomerase inhibitor** targeting telomerase-dependent malignant clones in MDS¹
- **Approved in the US (June 2024) and EU (March 2025)** for lower-risk MDS with transfusion-dependent anemia after ESA failure or ineligibility, based on the pivotal Phase 3 IMerge trial (NCT02598661)²⁻⁴
- **Guidelines position imetelstat** as a first-line option in non-del(5q) patients with EPO >500 mU/mL, and as preferred second-line after an ESA or luspatercept⁵



Objectives

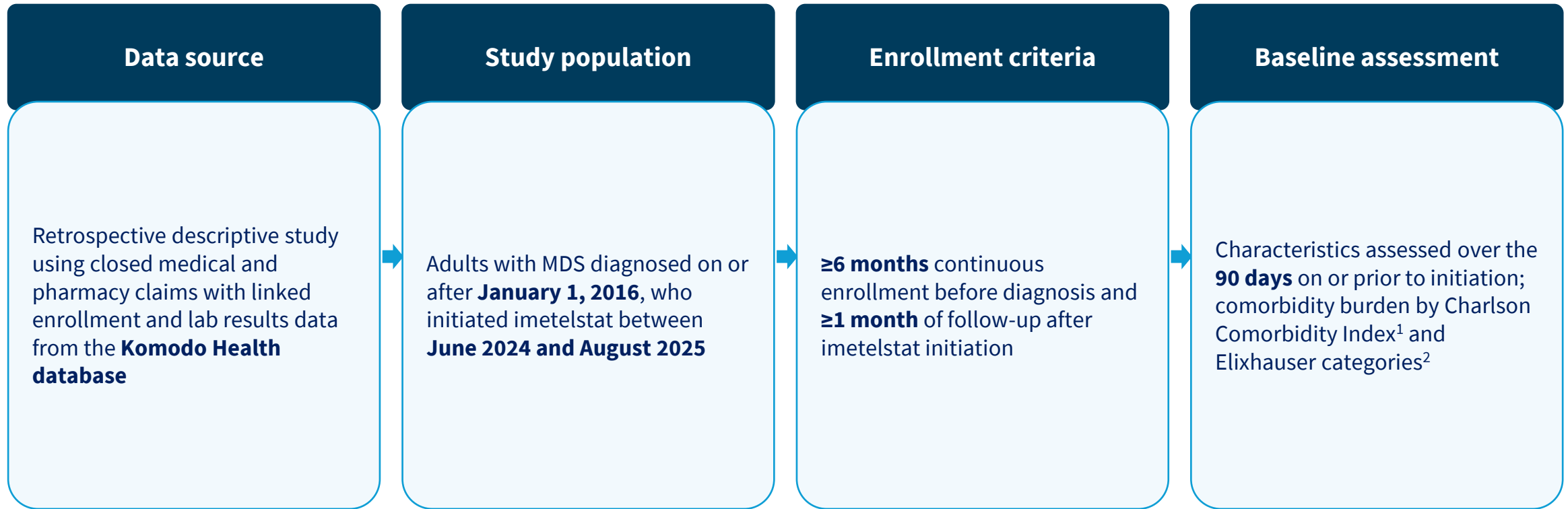
- To characterize the baseline clinical profile of patients at imetelstat initiation in routine US practice, including comorbidity burden and depth of anemia
- To describe treatment-sequence position, time from diagnosis to initiation, and early treatment persistence

EPO, erythropoietin; ESA, erythropoiesis-stimulating agent; EU, European Union; MDS, myelodysplastic syndromes; US, United States.

1. Wang X, et al. *Blood Adv*. 2018;2(18):2378-2388. 2. RYTELO® (imetelstat) for injection, for intravenous use. Package insert. Geron Corporation; 2024. 3. RYTELO® (imetelstat) summary of product characteristics. Geron Corporation; 2025.

4. Platzbecker U and Santini V, et al. *Lancet*. 2024;403(10423):249-260. 5. Referenced with permission from the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Myelodysplastic Syndromes V.3.2026. © National Comprehensive Cancer Network, Inc. 2026. All rights reserved. Accessed September 8, 2026. To view the most recent and complete version of the guideline, go online to NCCN.org. NCCN makes no warranties of any kind whatsoever regarding their content, use or application and disclaims any responsibility for their application or use in any way.

Methods



Analyses: Data were summarized using descriptive statistics

MDS, myelodysplastic syndromes.

1. Charlson ME, et al. *J Chronic Dis*. 1987;40(5):373-383. 2. Elixhauser A, et al. *Med Care*. 1998;36(1):8-27.

Results: Baseline Characteristics and Time to Imetelstat Initiation (N=58)

- Older cohort consistent with the LR-MDS population, with a substantial interval from diagnosis to imetelstat initiation in routine US practice

Characteristics	Imetelstat (N=58)
Age at first observable MDS diagnosis, y	
Mean (SD)	74.2 (7.7)
Median (IQR [Q1, Q3])	75 (69,79)
Sex, n (%)^a	
Male	32 (55.2)
Female	25 (43.1)
Race, n (%)	
White	44 (75.9)
African-American	3 (5.2)
Other	11 (19.0)
Payor type, n (%)	
Commercial	6 (10.3)
Medicare	51 (87.9)
Other	1 (1.7)

TIME FROM FIRST OBSERVABLE MDS DIAGNOSIS
TO IMETELSTAT INITIATION

37.8 mo

Mean (SD, 30.3)

28 mo median (IQR 18-51)

Wide variability across patients

IQR, interquartile range; LR-MDS, lower-risk myelodysplastic syndromes; Q, quartile; SD, standard deviation; US, United States.
^aUnknown in 1 patient.

Results: Depth of Anemia and Baseline Comorbidity Burden (N=58)

- **Severe anemia (median Hb 7.9 g/dL)** co-occurred with **hypertension, renal failure, cardiac arrhythmia, and CHF**, suggesting an interacting cluster in which anemia and cardiorenal disease may compound one another
- These anemia and comorbidity findings describe patients at the time of imetelstat initiation, not outcomes of treatment

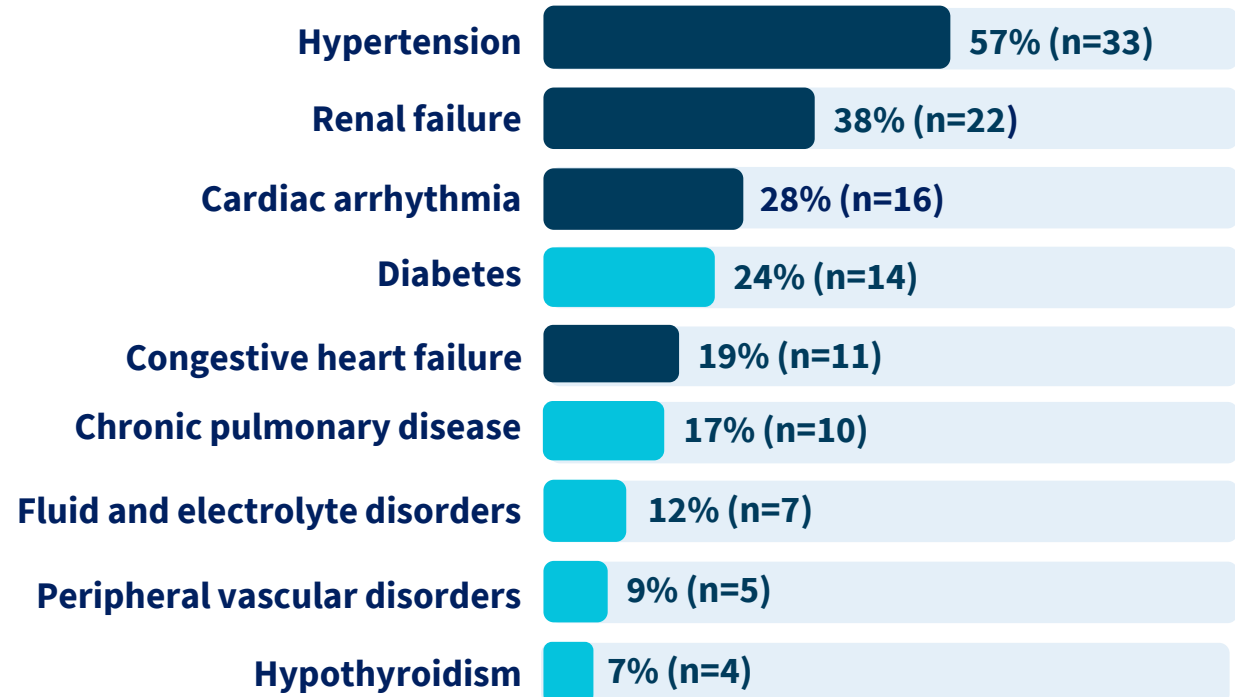
MEDIAN BASELINE HB

7.9 g/dL

MEAN CHARLSON
COMORBIDITY INDEX¹

2.6

% of patients (N=58)



Navy = cardiorenal conditions

CHF, congestive heart failure; Hb, hemoglobin.

1. Charlson ME, et al. *J Chronic Dis.* 1987;40(5):373-383.

Why Comorbidity Burden Matters in This Population

Observed comorbidity ^a (N=58)	Prevalence	Clinical context from published literature ^{1-7,b}
Hypertension, n (%)	33 (57)	Hypertension and anemia are bidirectionally related and may together contribute to left ventricular hypertrophy and heart failure risk over time
Renal failure, n (%)	22 (38)	Renal impairment is commonly associated with anemia of chronic disease and may contribute to greater anemia severity
Cardiac arrhythmia, n (%)	16 (28)	Reduced oxygen delivery in anemia may affect cardiac tolerance; arrhythmia and anemia have been reported to co-occur
Congestive heart failure, n (%)	11 (19)	In heart failure, anemia may add to myocardial workload and has been reported to increase physiological strain when cardiac reserve is reduced
Baseline Hb, g/dL	7.9	Depth of anemia at initiation may compound each of the conditions above

Hb, hemoglobin; MDS, myelodysplastic syndromes.
^aBaseline assessment: 90 days on or before imetelstat initiation. ^bClinical context is drawn from published literature on comorbidity, anemia, and cardiorenal disease in MDS and related populations. It is provided for background only; these potential interactions were not tested in this analysis.
1. Charlson ME, et al. *J Chronic Dis.* 1987;40(5):373-383. 2. Elixhauser A, et al. *Med Care.* 1998;36(1):8-27. 3. Sekeres MA, Taylor J. *JAMA.* 2022;328(9):872-880. 4. Sperr WR, et al. *Ann Oncol.* 2010;21(1):114-119. 5. Geels J, et al. *J Am Coll Cardiol.* 2026;87(20):2907-2921. 6. Brunner AM, et al. *Blood Adv.* 2017;1(23):2032-2040. 7. Maddox TM, et al. *J Am Coll Cardiol.* 2024;83(15):1444-1488.

Results: Treatment Patterns and Persistence

- Initiation occurred predominantly in later lines of therapy: 71% in the third line or later, 28% in the second line, and 1.7% in the first line

71%
INITIATED IN THIRD LINE
OR LATER

~67%
ESTIMATED STILL ON TREATMENT
AT 6 MONTHS (KM ESTIMATE)

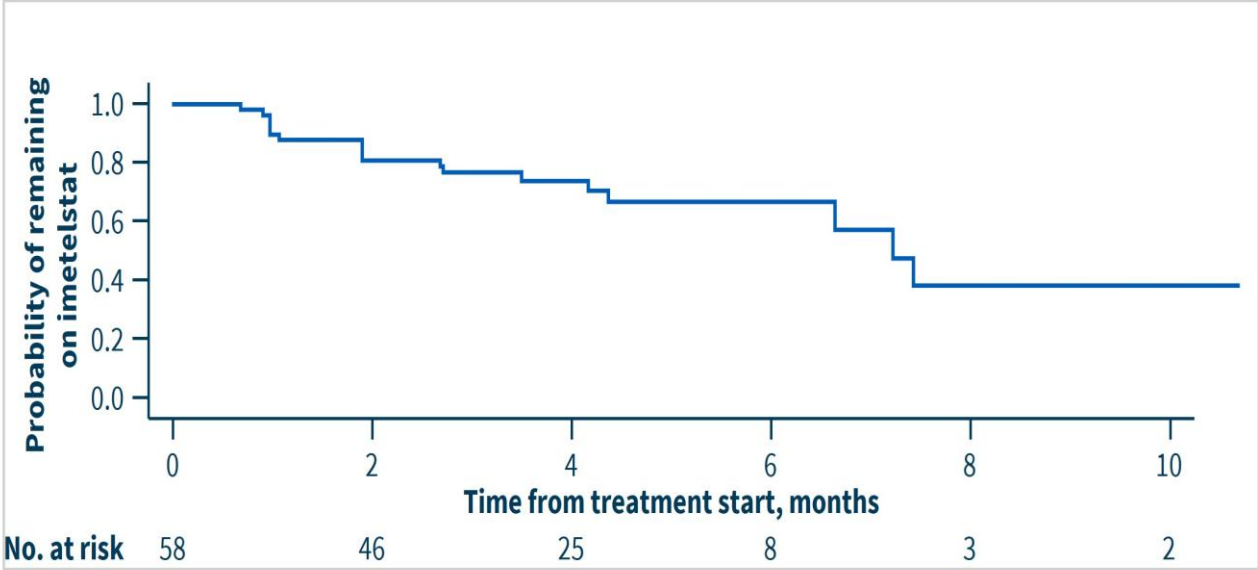
Treatment Duration and Discontinuation^a

Characteristics	Imetelstat
Patients at risk, n	58
Discontinued, n (%)	19 (32.8)
Time to discontinuation, median (95% CI), mo	7.2 (6.6, NE)
IQR [Q1, Q3], mo	3.5, NR
Mean observed treatment duration (SE), mo ^b	5.6 (0.36)

CLINICAL INTERPRETATION

Persistence held through months 2 and 3, when cytopenias typically emerge and dose modifications are made, and discontinuation did not cluster in this window

Time to Discontinuation (N=58)



Most patients remained on treatment through the first 3 months (~77%; KM estimate^c)

CI, confidence interval; IQR, interquartile range; KM, Kaplan-Meier; NE, not estimable; NR, not reached; SE, standard error.
^aDiscontinuation: start of a subsequent line of therapy or, absent one, a >60-day gap between the end of the imetelstat line and end of follow-up; gaps ≤60 days were censored. ^bMean observed duration is truncated by follow-up and is not the duration attainable with continued treatment. ^cKM estimates; patients under observation decline over time from discontinuation (n=19) and short, variable follow-up, so estimates beyond ~4 months are based on few patients and should be interpreted with caution.

Conclusions and Key Takeaways

71% THIRD LINE OR LATER

37.8 mo DIAGNOSIS TO INITIATION

~67% ON TREATMENT AT 6 MONTHS

In the first ~14 months after US approval, imetelstat entered the treatment sequence late in an already-compromised population

In this real-world US cohort (N=58), with a mean Charlson Comorbidity Index¹ of 2.6, imetelstat was initiated predominantly in the third line or later among older patients

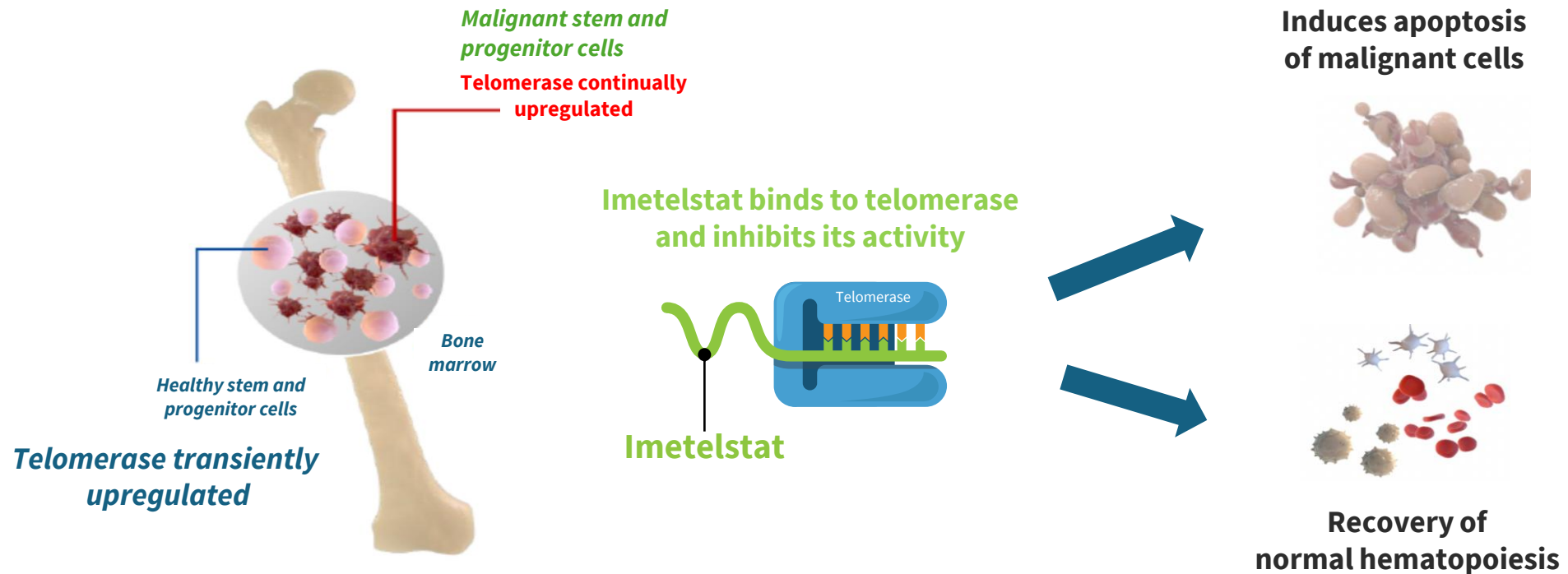
- Initiation timing in these patients was beyond the entry point contemplated by either the US Prescribing Information, which does not restrict use by line of therapy and therefore permits use in ESA-ineligible patients without prior MDS-directed therapy, or current treatment guidelines, which place imetelstat in the preferred second-line tier
- Once initiated, most patients remained on therapy through the early months when cytopenias typically emerge (~67% at 6 months; KM estimate), although persistence is not a measure of effectiveness
- Whether earlier imetelstat initiation improves outcomes, before severe anemia and comorbidity accrue, was not assessed in this study and remains a priority question for future controlled studies
- Clinical familiarity, comfort managing early cytopenias, and access or reimbursement pathways may influence timing and warrant further study

Limitations:

- Claims data cannot confirm MDS risk status, and comorbidities captured over the 90-day baseline period may be undercounted
- Placement comparisons apply at the cohort level, as claims lacked transfusion burden, del(5q), or EPO levels
- The analysis did not include a comparator arm and did not assess effectiveness or safety outcomes, and time to discontinuation reflects persistence, not effectiveness

Hypothesis for Future Study

Because imetelstat is distinguished from erythroid-supportive therapies by exploratory evidence of activity against the underlying clone, the timing of its introduction may have implications beyond treatment sequencing convention



Thank You

Acknowledgments

- The authors acknowledge with gratitude the patients whose de-identified data were included in this research, and the caregivers and healthcare professionals who supported them. Their contributions are essential to advancing scientific knowledge and improving patient care. The authors also acknowledge Gene Felber, PhD, for his support and contributions to this work
- This study was funded by Geron Corporation
- All authors contributed to and approved the presentation; writing and editorial support were provided by Mohamed Abdelmegeed, MD, PhD, CMPP, of The Lockwood Group (Stamford, CT, USA), funded by Geron Corporation