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JOURNAL OF THE AMERICAN SOCIETY OF HEMATOLOGY

Blood (ASH Annual Meeting Abstracts) 2012 120: Abstract 3800

Poster Sessions

633. Myelodysplastic Syndromes: Poster III

Relationship Between Chelation and Clinical Outcomes in 600 Lower-Risk MDS Patients: Registry Analysis At 36 Months

Roger M. Lyons, MD[1], Billie J. Marek, MD[*,2], Carole Paley, MD[*,3], Jason Esposito, MSHS[*,3], Lawrence Garbo, MD[4], Nicholas DiBella, MD[5] and Guillermo Garcia-Manero, MD[6]

[1] Cancer Care Centers of South Texas/US Oncology, San Antonio, TX, USA,
[2] Texas Oncology-South Texas Cancer Center, McAllen, TX,
[3] Novartis Pharmaceuticals Corporation, East Hanover, NJ, USA,
[4] New York Oncology Hematology, P.C., Albany, NY,
[5] Rocky Mountain Cancer Centers, Aurora, CO,
[6] University of Texas, MD Anderson Cancer Center, Houston, TX, USA

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Introduction: Treatment of anemia in pts with myelodysplastic syndromes (MDS) may require packed red blood cell transfusion. Transfusion dependence in MDS is associated with poorer clinical outcomes and reduced overall survival (OS). This US registry prospectively collected data on clinical outcomes in chelated and non-chelated, transfused, lower-risk MDS pts. OS, leukemic transformation, and clinical events are reported for non-chelated and chelated pts at 36 mos on study.

Methods: This 5-year, non-interventional registry enrolled 600 pts from 107 US centers. Pts were ≥18 years old with lower-risk MDS (WHO, FAB, and/or IPSS) and transfusional iron overload (serum ferritin ≥1000 µg/L and/or ≥20 packed red blood cell units and/or ≥6 units every 12 weeks). The chelated group included all pts who had ever used iron **chelation**; sub-analysis was performed on pts with ≥6 mos **chelation**. Assessments were every 6 mos for 5 years or until death and included demographics, survival, disease status, comorbidities, causes of death, and MDS therapy.

Results: Baseline demographics and IPSS risk status were similar **between** groups, although transfusion burden trended higher in chelated pts (Table 1). As of April 30, 2012, 169 pts continued on registry, and 431 discontinued (345 died, 57.5%; 61 lost to follow-up, 10.2%; and 25 other, 4.2%). In all, 264 (44%) pts received **chelation** therapy; 200 had ≥6 mos **chelation**. OS and time to acute myeloid leukemia (AML) transformation were significantly longer, and percentage of deaths was significantly lower in chelated ≥6 mos vs. non-chelated pts (P<0.0001, P=0.011 [median not reached in either group], P=0.0002, respectively; Table 2). AML transformations were also lower in chelated ≥6 mos pts (not significant [NS]). Cardiac (non-chelated, 51.5%; ≥6 mos **chelation**, 30.5%) and vascular disorders (non-chelated, 59.2%; ≥6 mos **chelation**, 45.5%) were more prevalent in non-chelated pts at baseline; this trend continued on study: cardiac (non-chelated, 49.7%; ≥6 mos **chelation**, 42.5%); vascular (non-chelated, 55.7%; ≥6 mos **chelation**, 48.5%; NS, all comparisons). Most frequent causes of death were MDS/AML, cardiac events, and infection. The percentage of pts who had ever received MDS therapy was lower among non-chelated pts (non-chelated, 88.4%; ≥6 mos **chelation**, 93.5%; NS).

Conclusions: At 36 mos, chelated pts had significantly longer OS and time to AML transformation, as well as significantly fewer deaths. Trends toward fewer AML transformations and cardiac disorders were observed in chelated pts. Baseline characteristics and IPSS risk status were similar **between** groups, with the exception of more prevalent cardiac and vascular comorbidities in non-chelated pts. Additional assessments over the 5-year duration of this registry will provide further information on the association **between chelation** and clinical outcomes.

Table 1. Demographics, IPSS Risk Status, and Transfusion Burden

Table 1. Demographics, IPSS Risk Status, and Transfusion Burden

	Non-chelated n=336	Chelated n=264	Chelated ≥6 mos n=200
Age, years, median (range)	77 (47-99)	75 (21-94)	75 (21-94)
Sex, M:F	1.45:1	1.28:1	1.11:1
Risk status, n (%)			
IPSS – low	57 (34.8)	57 (43.5)	39 (39.0)
IPSS – INT-1	107 (65.2)	74 (56.5)	61 (61.0)
Baseline ferritin, ng/mL			
median (range)	1347 (3-7379)	1512 (81-16422)	1486 (81-16422)
Transfusions, median			
Lifetime units transfused at baseline	20.0	40.0	44.0
Units transfused/4 weeks while on registry	1.41	2.11	2.18

Table 2. Summary of AML Transformation, Clinical Events, and Deaths at 36 Months

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	Non-chelated n=336	Chelated n=264	Chelated ≥6 mos n=200
OS from Dx, median (range) mos	50.0* (1.8-289.4)	96.8 (2.3-187.8)	102.1* (2.3-187.8)
Time to AML transformation from Dx, mean (SE) mos	27.4 (3.5)†	55.1 (11.2)	57.1 (13.7)†
Deaths, n (%)	212 (63.1)‡	133 (50.4)	93 (46.5)‡
AML transformation, n (%)	32 (9.5)	16 (6.1)	13 (6.5)
Causes of death, n (%)			
MDS/AML	90 (42.5)	60 (45.1)	43 (46.2)
Cardiac	32 (15.1)	21 (15.8)	15 (16.1)
Infection	26 (12.3)	10 (7.5)	10 (10.8)
Other	13 (6.1)	13 (9.8)	8 (8.6)
Unknown	23 (10.8)	12 (9.0)	7 (7.5)
Malignancy	14 (6.6)	2 (1.5)	0
Respiratory	7 (3.3)	7 (5.3)	4 (4.3)
Multi-organ failure	3 (1.4)	2 (1.5)	2 (2.2)
CVA	1 (0.5)	4 (3.0)	3 (3.2)
GvHD/transplant	3 (1.4)	2 (1.5)	1 (1.1)

Dx, diagnosis; CVA, cerebrovascular accident; GvHD, graft versus host disease.

*P<0.0001, †P=0.011, ‡P=0.0002, non-chelated vs. chelated ≥6 mos.

Disclosures: Lyons: *Novartis:* Research Funding; *Amgen:* Consultancy, Research Funding; *Incyte:* Consultancy, Research Funding; *Telik:* Research Funding. **Paley:** *Novartis:* Employment. **Esposito:** *Novartis:* Employment. **Garcia-Manero:** *Novartis:* Research Funding.

Footnotes

* Asterisk with author names denotes non-ASH members.