



DISCOVER REBLOZYL®

*The first and only erythroid maturation agent indicated in adult patients with transfusion-dependent anemia resulting from very low- to intermediate-risk myelodysplastic syndromes (MDS)**

REBLOZYL (luspatercept for injection) is indicated for:

- the treatment of adult patients with transfusion-dependent anemia due to very low- to intermediate-risk MDS who have not been previously treated with an erythropoiesis stimulating agent (ESA-naïve).
- the treatment of adult patients with transfusion-dependent anemia requiring at least two red blood cell (RBC) units over 8 weeks resulting from very low- to intermediate-risk MDS who have ring sideroblasts (RS+) and who have failed or are not suitable for erythropoietin-based therapy.

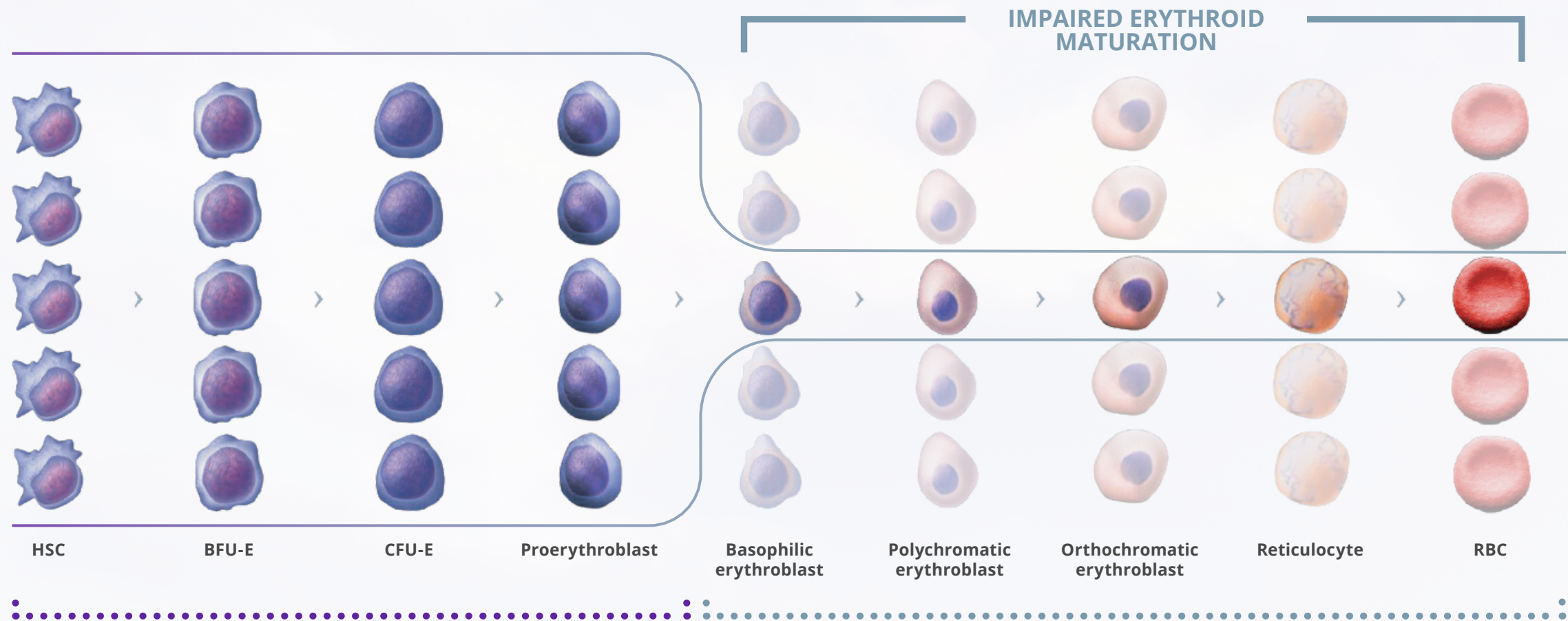
* Comparative clinical significance is unknown.

 Bristol Myers Squibb®

Pr **Reblozyl**®
luspatercept for injection



IMPAIRED ERYTHROID MATURATION CONTRIBUTES TO INEFFECTIVE ERYTHROPOIESIS, RESULTING IN LOW PRODUCTION OF RBCs AND ANEMIA²



EARLY-STAGE ERYTHROPOIESIS³
Endogenous erythropoietin (EPO)
regulates proliferation

LATE-STAGE ERYTHROPOIESIS^{4,5}
Select TGF- β superfamily ligands help regulate maturation
TGF- β superfamily signalling through SMAD2/3 is abnormally high in diseases characterized by ineffective erythropoiesis, which leads to impaired erythroid maturation of RBCs

Adapted from Lodish, *et al* (2010), Fortunel, *et al* (2000) and Suragani, *et al* (2014).

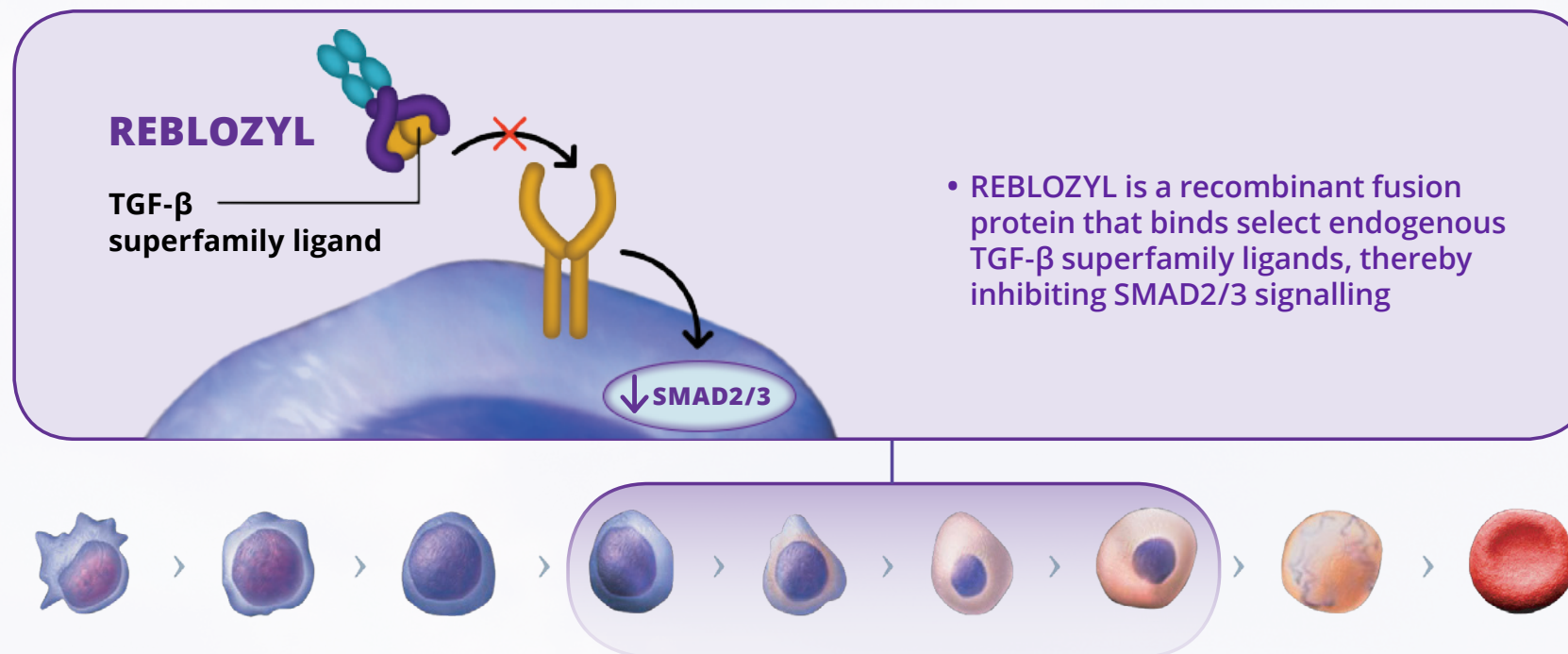
BFU-E: Burst-forming unit erythroid; CFU-E: Colony-forming unit erythroid; HSC: Hematopoietic stem cell; RBC: Red blood cell; TGF- β : Transforming growth factor beta.



DISCOVER REBLOZYL

The first and only erythroid maturation agent indicated in adult patients with transfusion-dependent anemia resulting from very low- to intermediate-risk MDS^{1*}

A CLOSER LOOK AT THE REBLOZYL MOA FROM PRECLINICAL STUDIES WITH MICE^{1†}



Adapted from the REBLOZYL Product Monograph.

REBLOZYL (luspatercept for injection) is indicated for:

- the treatment of adult patients with transfusion-dependent anemia due to very low- to intermediate-risk MDS who have not been previously treated with an erythropoiesis stimulating agent (ESA-naïve)
- the treatment of adult patients with transfusion-dependent anemia requiring at least two red blood cell (RBC) units over 8 weeks resulting from very low- to intermediate-risk MDS who have ring sideroblasts (RS+) and who have failed or are not suitable for erythropoietin-based therapy.

REBLOZYL is an erythroid maturation agent. It is not indicated for use as a substitute for RBC transfusions in patients who require immediate correction of anemia.¹

EPO: Erythropoietin; TGF- β : Transforming growth factor beta.

* Comparative clinical significance is unknown.

† Clinical significance is unknown.





CARL

Did not respond to ESA



DOROTHY

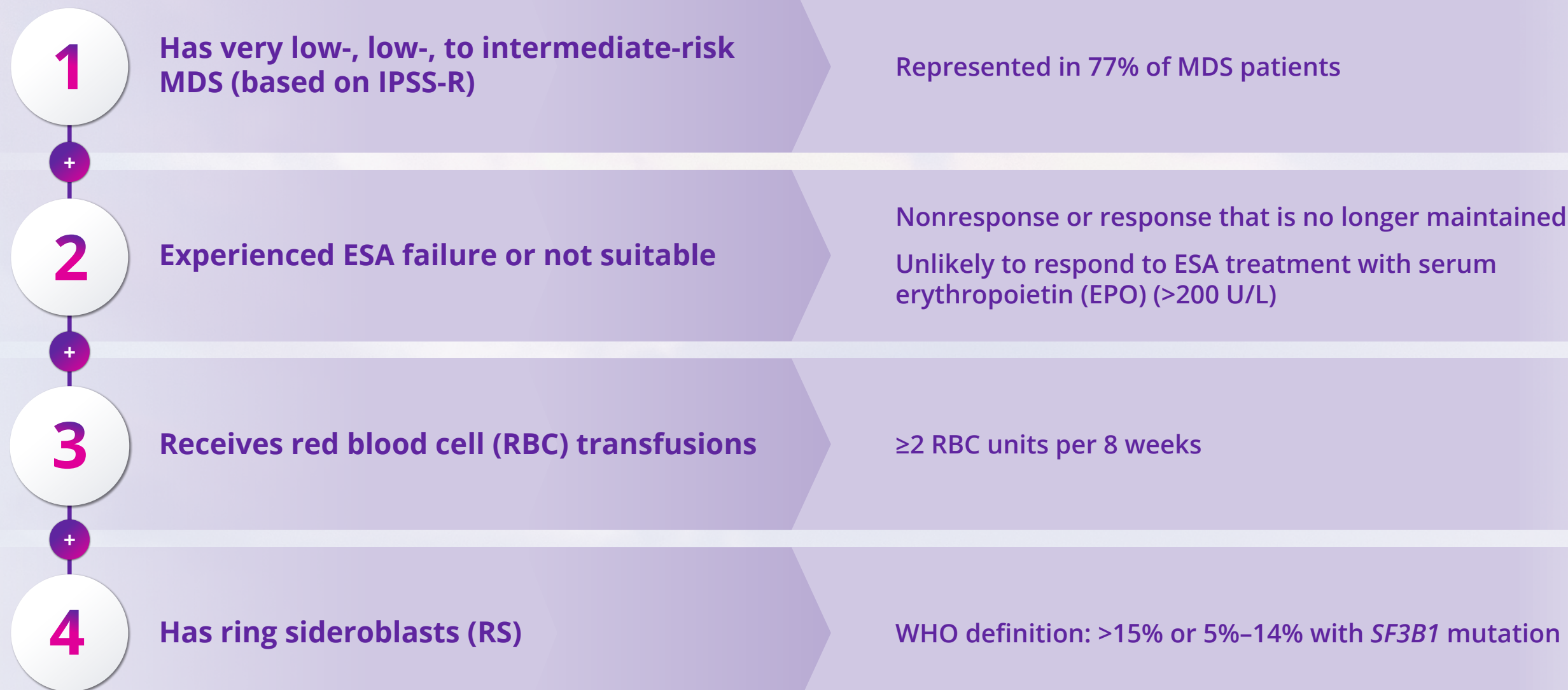
Lost response to ESA



ERIC

Unlikely to respond to ESA

IDENTIFYING THE REBLOZYL MDS PATIENT^{1,6,7}



Adapted from the REBLOZYL Product Monograph, Greenberg, *et al.* (2012) and Fenaux, *et al* (2020).

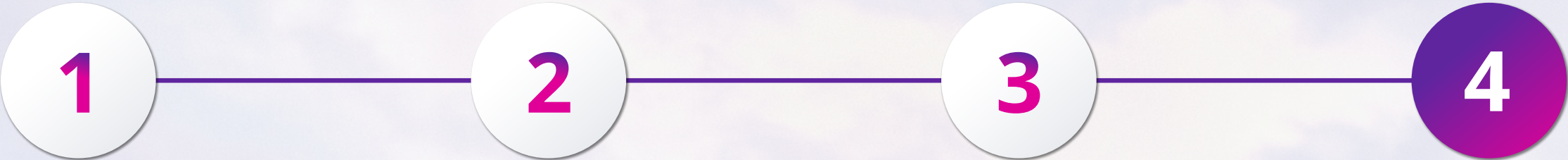


Has very low-, low-, to intermediate-risk MDS	ESA failure or not suitable for ESA	Receives red blood cell (RBC) transfusions	Has ring sideroblasts (RS)
IPSS-R Low-risk MDS (risk score: 3.0)	Serum EPO 300 U/L	3 RBC U/8 weeks	RS +28%
Carl is transfusion-dependent, and failed EPO-based therapy			

Would you consider a patient like Carl a candidate for REBLOZYL?

EPO: Erythropoietin; ESA: Erythropoiesis-stimulating agents; IPSS-R: International Prognostic Scoring System, revised; MDS: Myelodysplastic syndromes; U: Units.
* Carl is a hypothetical patient and not from a clinical trial. Actual patient experiences may vary.





1	2	3	4
Diagnosis	Treatment	ESA-treatment status	A NEW OPTION
<ul style="list-style-type: none">• 70-year-old male with anemia diagnosed with MDS-RS	<ul style="list-style-type: none">• ESA treatment for 2 months• RBC transfusions (3 U/8 weeks)	<ul style="list-style-type: none">• Carl failed EPO-based therapy	<ul style="list-style-type: none">• Carl begins treatment with REBLOZYL

EPO: Erythropoietin; ESA: Erythropoiesis-stimulating agents; MDS-RS: Myelodysplastic syndromes with ring sideroblasts; RBC: Red blood cell; U: Units.
* Carl is a hypothetical patient and not from a clinical trial. Actual patient experiences may vary.





PATIENT PROFILE

DOROTHY*

Has very low-, low-, to intermediate-risk MDS	ESA failure or not suitable for ESA	Receives red blood cell (RBC) transfusions	Has ring sideroblasts (RS)
IPSS-R Very low-risk MDS (risk score: 1.5)	Serum EPO 190 U/L	2 RBC U/8 weeks	RS +12% with <i>SF3B1</i> mutation
Dorothy's healthcare team has now determined that she has failed EPO-based therapy after being on ESA treatment for 17 months			

Would you consider a patient like Dorothy a candidate for REBLOZYL?

EPO: Erythropoietin; ESA: Erythropoiesis-stimulating agents; IPSS-R: International Prognostic Scoring System, revised; MDS: Myelodysplastic syndromes; U: Units.
* Dorothy is a hypothetical patient and not from a clinical trial. Actual patient experiences may vary.





DOROTHY*





PATIENT PROFILE

ERIC*

Has very low-, low-, to intermediate-risk MDS	ESA failure or not suitable for ESA	Receives red blood cell (RBC) transfusions	Has ring sideroblasts (RS)
IPSS-R Intermediate-risk MDS (risk score: 3.5)	Serum EPO 510 U/L	5 RBC U/8 weeks	RS +17%
Based on his high EPO level, ESAs may not be appropriate for Eric ⁸⁻¹⁰			

Would you consider a patient like Eric a candidate for REBLOZYL?

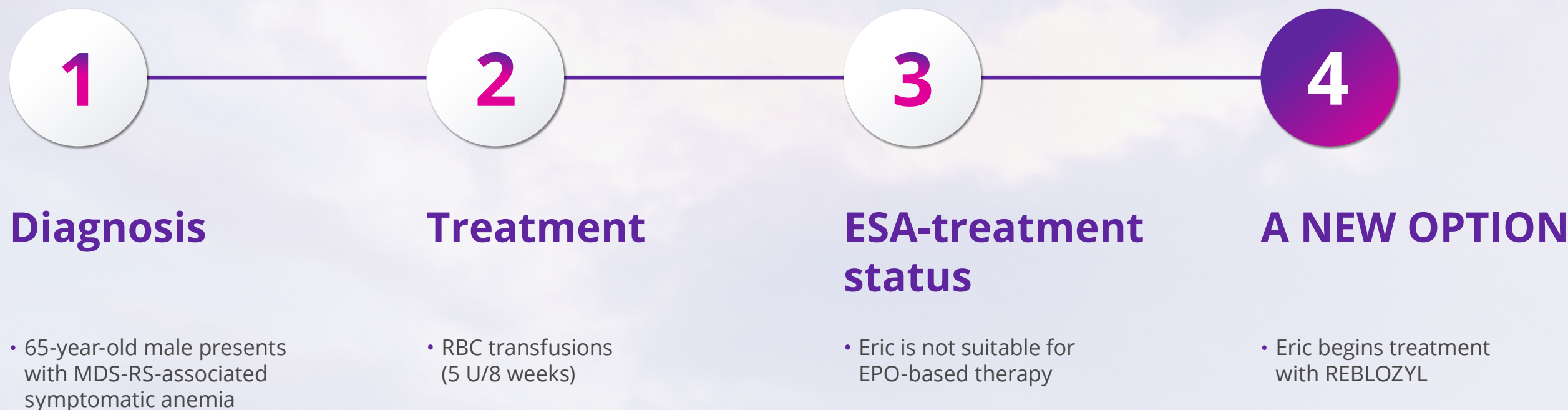
EPO: Erythropoietin; ESA: Erythropoiesis-stimulating agents; IPSS-R: International Prognostic Scoring System, revised; MDS: Myelodysplastic syndromes; U: Units.

* Eric is a hypothetical patient and not from a clinical trial. Actual patient experiences may vary.



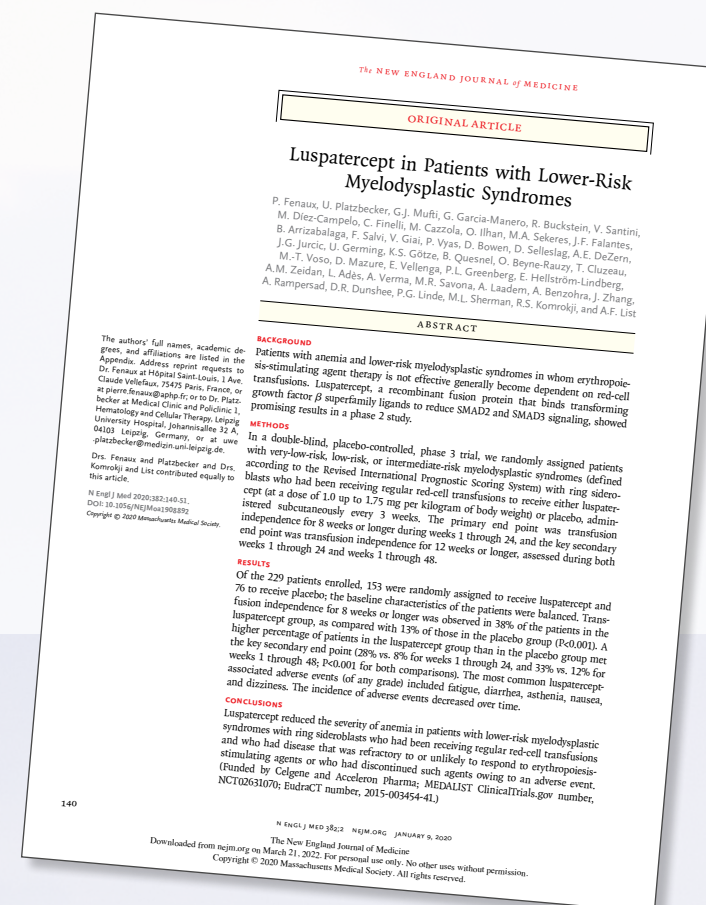


ERIC*

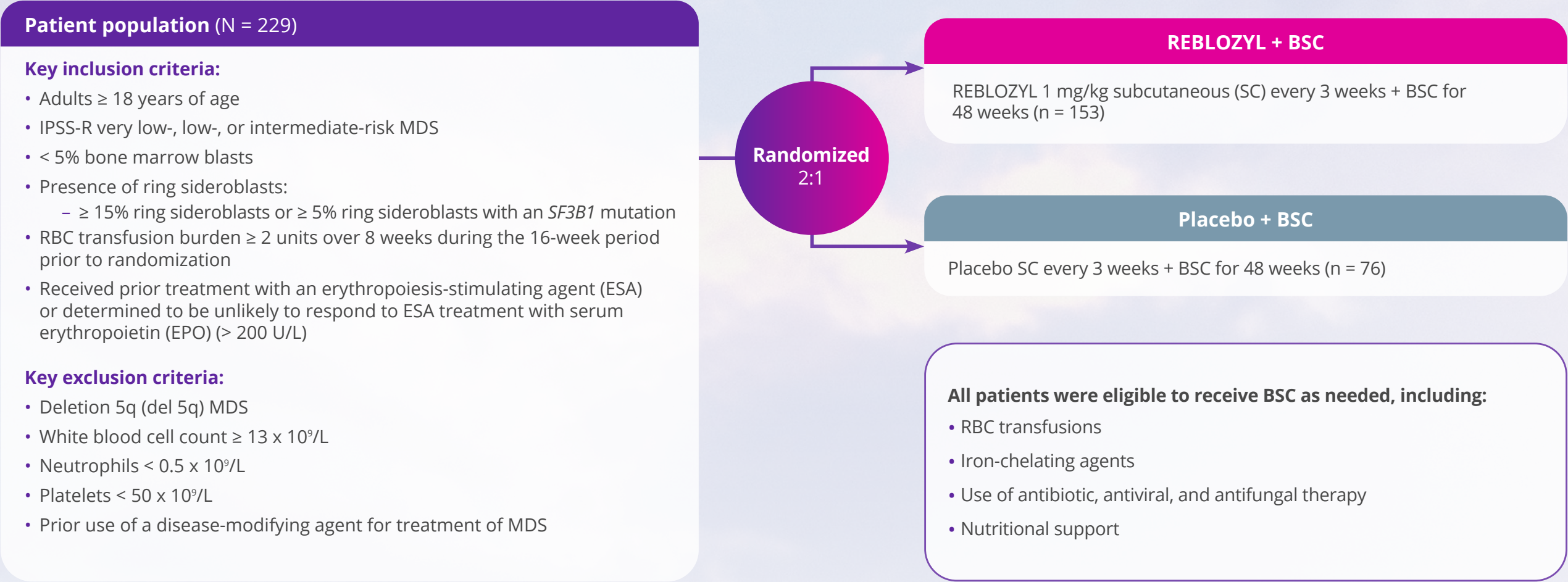


DISCOVER MEDALIST

REBLOZYL was studied in the phase 3, randomized, double-blind, placebo-controlled MEDALIST trial^{1,10}



MEDALIST STUDY DESIGN



Adapted from the REBLOZYL Product Monograph and Fenaux, *et al* (2020).

Primary endpoint¹

- RBC transfusion independence (RBC-TI) ≥8 weeks from week 1 through week 24*

Key secondary endpoints¹

- RBC-TI ≥12 weeks from week 1 through week 24[†]
- RBC-TI ≥12 weeks from week 1 through week 48[†]

BSC: Best supportive care; IPSS-R: International Prognostic Scoring System, revised; MDS: Myelodysplastic syndromes; RBC: Red blood count; U: Units.



THE MEDALIST TRIAL INCLUDED PATIENTS WITH VERY LOW- TO INTERMEDIATE-RISK MDS WITH RING SIDEROBLASTS¹

Baseline demographics and disease characteristics of patients in the phase 3 MEDALIST trial

Disease characteristics	REBLOZYL (n = 153)	Placebo (n = 76)
Age (years) median (min, max)	71 (40, 95)	72 (26, 91)
Age categories, n (%)		
< 65 years	29 (19.0)	16 (21.1)
65–74 years	72 (47.1)	29 (38.2)
≥ 75 years	52 (34.0)	31 (40.8)
Time since original MDS diagnosis[§] (months)		
Mean (SD)	57.8 (56.6)	52.7 (42.3)
Median (min, max)	44.0 (3, 421)	36.1 (4, 193)
Serum EPO (U/L) categories, n (%)		
< 100	51 (33.3)	31 (40.8)
100 to < 200	37 (24.2)	19 (25.0)
200 to 500	43 (28.1)	15 (19.7)
> 500	21 (13.7)	11 (14.5)
Missing	1 (0.7)	0 (0.0)
Hemoglobin (g/L)		
Mean (SD)	7.7 (0.8)	7.7 (0.8)
Median (min, max)	7.6 (6, 10)	7.6 (5, 9)
Ring sideroblasts, n (%)		
≥ 15%	153 (100.0)	76 (100.0)
MDS classification[¶], n (%)		
MDS RARS	7 (4.6)	2 (2.6)
MDS RCMD-RS	145 (94.8)	74 (97.4)
Other ^{**}	1 (0.7)	0 (0.0)
IPSS-R classification risk category, n (%)		
Very low	18 (11.8)	6 (7.9)
Low	109 (71.2)	57 (75.0)
Intermediate	25 (16.3)	13 (17.1)
High	1 (0.7)	0 (0.0)
SF3B1, n (%)		
Mutated	141 (92.2)	65 (85.5)
Nonmutated	12 (7.8)	10 (13.2)
Missing	0 (0.0)	1 (1.3)
ECOG performance status, n (%)		
0	54 (35.3)	33 (43.4)
1	91 (59.5)	32 (42.1)
2	8 (5.2)	11 (14.5)
RBC transfusions/8 weeks over 16 weeks categories, n (%)		
≥ 6 units	66 (43.1)	33 (43.4)
< 6 units	87 (56.9)	43 (56.6)
≥ 4 and < 6 units	41 (26.8)	23 (30.3)
< 4 units	46 (30.1)	20 (26.3)
Prior ESA, n (%)	148 (96.7)	70 (92.1)

Patient population characteristics¹

- Patients were required to have received prior ESA treatment, or determined to be unlikely to respond to ESAs

Adapted from the REBLOZYL Product Monograph.

* RBC-TI was defined as the absence of any RBC transfusion during any consecutive 56-day (8-week) period during the primary phase of the treatment period (first 24 weeks of double-blind treatment).

† RBC-TI was defined as the absence of any RBC transfusion during any consecutive 84-day (12-week) period during the primary phase of the treatment period (first 24 weeks of double-blind treatment).

‡ RBC-TI was defined as the absence of any RBC transfusion during any consecutive 84-day (12-week) period.

§ Time since original MDS diagnosis was defined as the number of years from the date of original diagnosis to the date of informed consent.

|| Baseline EPO was defined as the highest EPO value within 35 days of the first dose of study drug.

¶ Per the World Health Organization (WHO) 2008 criteria.

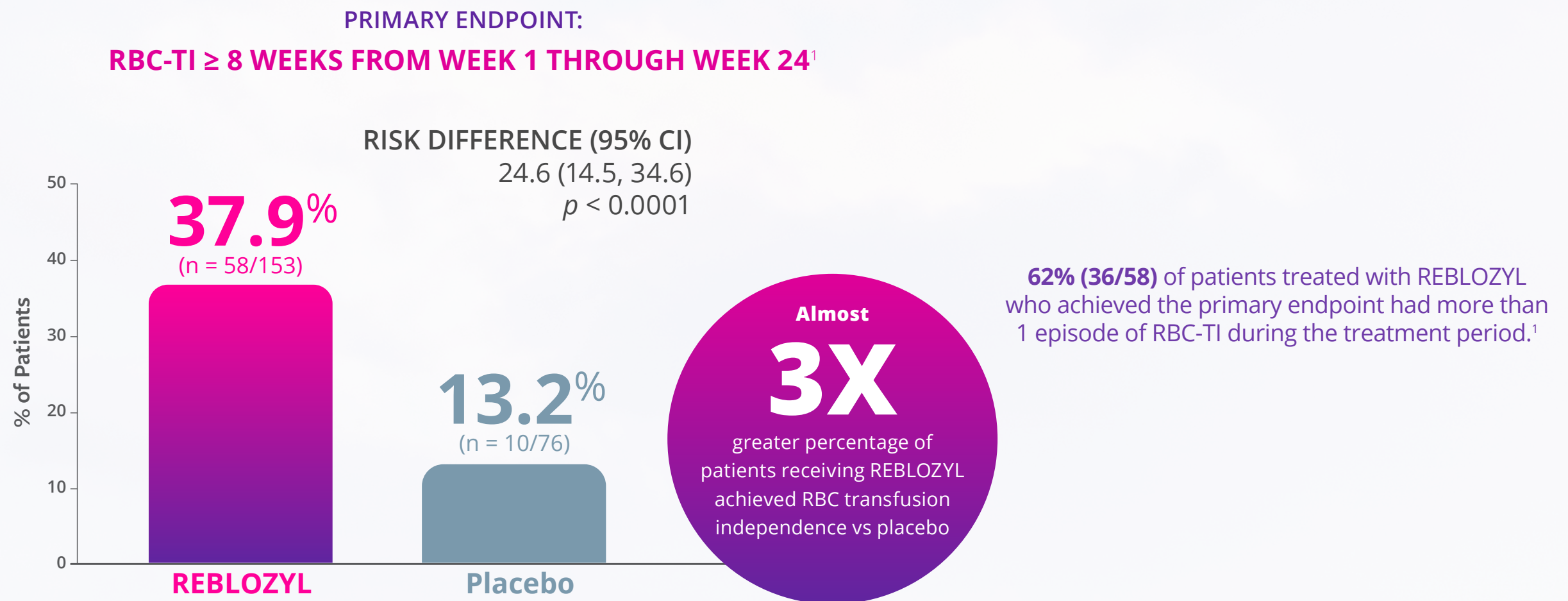
** Locally diagnosed MDS-RS and multilineage dysplasia.

BSC: Best supportive care; ECOG: Eastern Cooperative Oncology Group; EPO: Erythropoietin; ESA: Erythropoiesis-stimulating agent; IPSS-R: International Prognostic Scoring System-Revised; RARS: Refractory anemia with ring sideroblasts; RCMD-RS: Refractory cytopenia with multilineage dysplasia; SD: Standard deviation.



REBLOZYL PROVIDED A **SIGNIFICANT INCREASE IN THE PROPORTION OF PATIENTS WHO WERE RBC TRANSFUSION INDEPENDENT (RBC-TI)** COMPARED TO PLACEBO^{1*}

- RBC transfusion independence (RBC-TI) is defined as the absence of any RBC transfusion during any consecutive 8-week period within the first 24 weeks of treatment

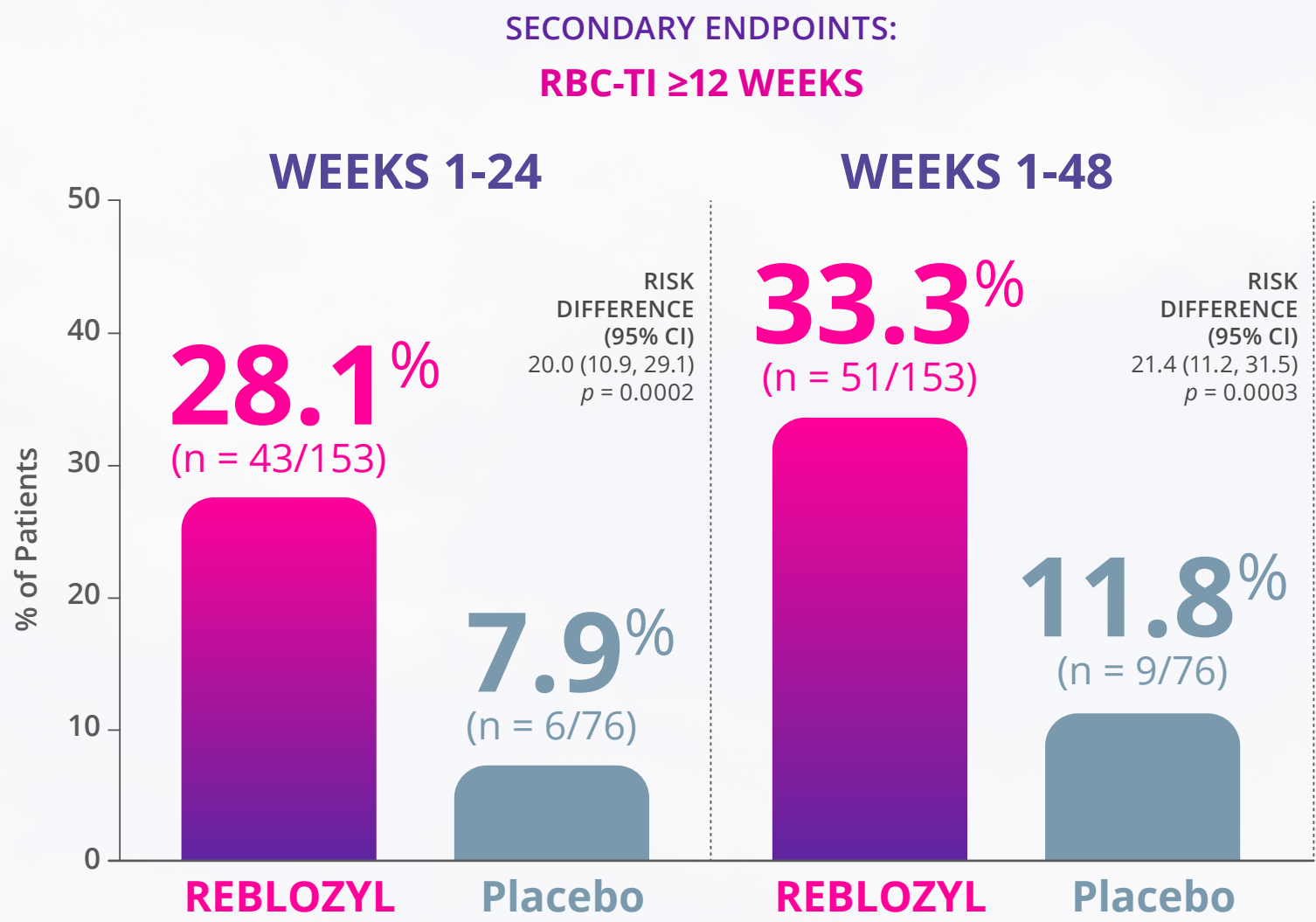


Adapted from the REBLOZYL Product Monograph.



REBLOZYL HAD A SIGNIFICANTLY HIGHER RATE OF RBC TRANSFUSION INDEPENDENCE (RBC-TI) VS PLACEBO FOR ≥12 WEEKS^{1,10}

- RBC-TI is defined as the absence of any RBC transfusion during any consecutive 12 or 16 week period as recorded during weeks 1-24 and weeks 1-48



Adapted from the REBLOZYL Product Monograph and Fenaux, *et al* (2020).



REBLOZYL HAS A **PROVEN SAFETY PROFILE**¹

- TEAEs in the MEDALIST trial reflected a median treatment duration of 49.0 weeks (range 6–114) in the REBLOZYL arm vs 24.0 weeks (range 7–89) in the placebo arm

All TEAEs observed in ≥ 5% of the REBLOZYL-treated patients and Grade 3 or 4 TEAEs observed in ≥ 1% of the REBLOZYL-treated patients^{1*†}

System organ class/preferred term	REBLOZYL N = 153		Placebo N = 76	
	All Grades n (%)	Grades 3–4 n (%)	All Grades n (%)	Grades 3–4 n (%)
Ear and labyrinth disorders				
Vertigo and vertigo positional	9 (6)	0 (0)	1 (1)	1 (1)
Gastrointestinal disorders				
Diarrhea	34 (22)	0 (0)	7 (9)	0 (0)
Nausea [‡]	31 (20)	1 (1)	6 (8)	0 (0)
Constipation	17 (11)	0 (0)	7 (9)	0 (0)
General disorders and administration site conditions				
Fatigue [§]	70 (46)	11 (7)	19 (25)	2 (3)
Infections and infestations				
Bronchitis [‡]	17 (11)	1 (1)	1 (1)	0 (0)
Urinary tract infection [‡]	17 (11)	2 (1)	4 (5)	3 (4)
Upper respiratory tract infection	15 (10)	1 (1)	3 (4)	0 (0)
Viral upper respiratory tract infection	12 (8)	0 (0)	4 (5)	0 (0)
Influenza	10 (7)	0 (0)	0 (0)	0 (0)
Investigations				
Alanine aminotransferase increased	9 (6)	3 (2)	3 (4)	0 (0)
Metabolism and nutrition disorders				
Decreased appetite	10 (6)	0 (0)	3 (4)	0 (0)
Hyperglycemia	8 (5)	0 (0)	3 (4)	1 (1)

TEAE: Treatment-emergent adverse event.
* Grade 3 or 4 TEAEs included have ≥ 1% greater frequency versus placebo.
† TEAEs are included without regard to causality.
‡ At least 1 event was reported as serious.
§ Grouped terms include: fatigue and asthenia.
|| Grouped terms include: renal failure, acute kidney injury, chronic kidney disease, renal impairment.
¶ Grouped terms include: essential hypertension, hypertension, hypertensive crisis.



All TEAEs observed in ≥5% of REBLOZYL-treated patients including Grades 3 or 4 TEAEs reported in ≥1% of REBLOZYL-treated patients^{1*†} (cont.)

System organ class/preferred term	REBLOZYL N = 153		Placebo N = 76	
	All Grades n (%)	Grades 3–4 n (%)	All Grades n (%)	Grades 3–4 n (%)
Musculoskeletal and connective tissue disorders				
Back pain [‡]	29 (19)	3 (2)	5 (7)	0 (0)
Myalgia	13 (8)	1 (1)	5 (7)	2 (3)
Nervous system disorders				
Dizziness	30 (20)	0 (0)	4 (5)	0 (0)
Headache	24 (16)	1 (1)	5 (7)	0 (0)
Syncope/presyncope	10 (7)	7 (5)	1 (1)	1 (1)
Renal and urinary disorders				
Renal impairment [¶]	11 (7)	4 (3)	2 (3)	1 (1)
Respiratory, thoracic and mediastinal disorders				
Cough	27 (18)	0 (0)	10 (13)	0 (0)
Dyspnea [‡]	23 (15)	1 (1)	5 (7)	0 (0)
Vascular disorders				
Hypertension [¶]	13 (9)	5 (3)	7 (9)	3 (4)

Adapted from the REBLOZYL Product Monograph.

Serious TEAEs occurred in 31.4% of patients treated with REBLOZYL and 30.3% of patients given placebo¹

- Serious TEAEs reported in ≥1% of patients treated with REBLOZYL include:
 - Pneumonia
 - Urinary tract infection
 - Transformation to AML
 - Back pain
 - Syncope
 - Sepsis
 - Basal cell carcinoma
 - Cardiac failure
 - Angina pectoris
 - Atrioventricular block
 - Femur fracture
 - Anemia
 - Acute kidney injury

AML: Acute myeloid leukemia;
TEAE: Treatment emergent adverse event.
* Grade 3 or 4 TEAEs included have ≥1% greater frequency versus placebo.
† TEAEs are included without regard to causality.
‡ At least 1 event was reported as serious.
§ Grouped terms include: fatigue and asthenia.
|| Grouped terms include: renal failure, acute kidney injury, chronic kidney disease, renal impairment.
¶ Grouped terms include: essential hypertension, hypertension, hypertensive crisis.



REBLOZYL HAS A **DEMONSTRATED SAFETY PROFILE**

Treatment discontinuations and dose modifications due to adverse events¹

8.5%
REBLOZYL

VS

7.9%
Placebo

DISCONTINUATIONS DUE TO AN ADVERSE EVENT

The most common adverse events leading to discontinuation of REBLOZYL were transformation to AML (1.3%), fatigue (1.3%) and sepsis (1.3%).

15%
REBLOZYL

VS

5.3%
Placebo

DOSE DELAY/INTERRUPTION DUE TO AN ADVERSE EVENT

The most common adverse events leading to dose delay/interruption in the REBLOZYL arm were urinary tract infection (1.3%), aspartate aminotransferase increased (1.3%), neutropenia (1.3%) and muscle weakness (1.3%).

4.6%
REBLOZYL

VS

0%
Placebo

DOSE REDUCTIONS DUE TO AN ADVERSE EVENT

Adverse events leading to dose reduction were based on single patient experiences of: asthenia, fatigue, back pain, myalgia, neutropenia, vomiting, and aminotransferase increased.

Adapted from the REBLOZYL Product Monograph.

AML: Acute myeloid leukemia.



SELECTED LABORATORY ABNORMALITIES REPORTED IN THE **MEDALIST TRIAL**¹

Lab shift	REBLOZYL N = 153 n (%)	Placebo N = 76 n (%)
ALT $\geq 3 \times$ ULN	23 (15)	6 (8)
AST $\geq 3 \times$ ULN	11 (7)	0 (0)
ALP $\geq 2 \times$ ULN	2 (1)	1 (2)
Total bilirubin $\geq 2 \times$ ULN	13 (8)	9 (12)
Direct bilirubin $\geq 2 \times$ ULN	2 (1)	0 (0)
Creatinine clearance $< 0.5 \times$ baseline	4 (3)	1 (1)

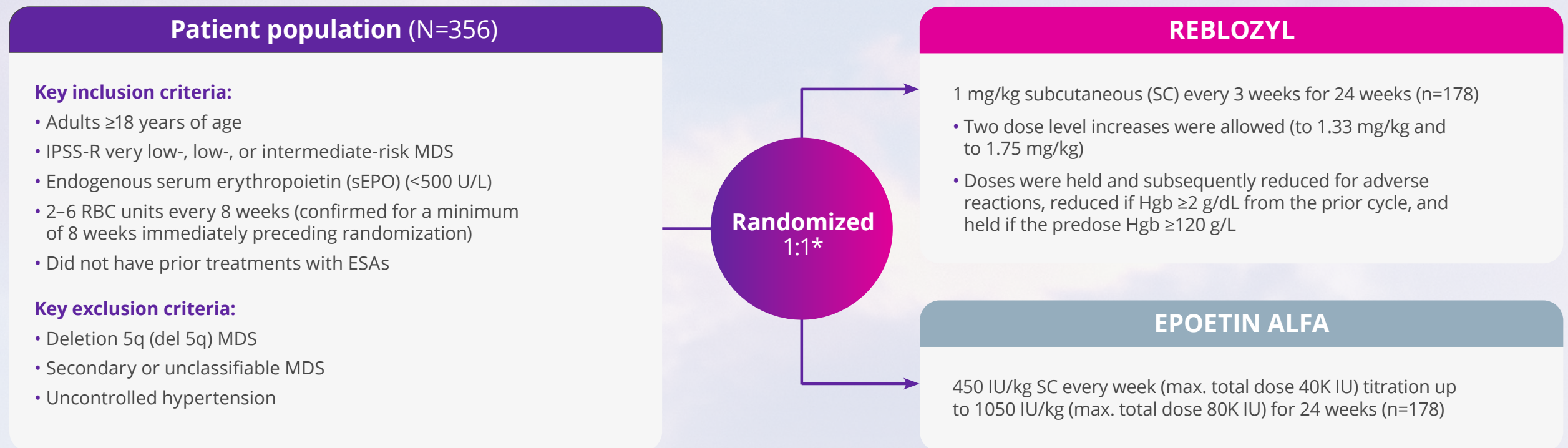
Adapted from the REBLOZYL Product Monograph.



DISCOVER COMMANDS

REBLOZYL was studied in the phase 3, randomized, open-label, active-controlled COMMANDS trial¹

COMMANDS WAS A PHASE 3, MULTICENTRE, RANDOMIZED, OPEN-LABEL, ACTIVE-CONTROLLED TRIAL¹



Adapted from the REBLOZYL Product Monograph.

Primary endpoint^{1†}

- RBC transfusion independence (RBC-TI) for 12 weeks with associated concurrent mean Hgb increase of >15 g/L (weeks 1–24)

Secondary endpoints^{1†}

- RBC-TI for 24 weeks (weeks 1–24)
- RBC-TI for ≥12 weeks (weeks 1–24)
- HI-E per IWG ≥8 weeks (weeks 1–24)

All patients were eligible to receive BSC, which included RBC transfusions as needed

BSC: best supportive care; ESA: erythropoiesis-stimulating agents; Hgb: hemoglobin; HI-E: hematologic improvement – erythroid response; IPSS-R: International Prognostic Scoring System, revised; IWG: International Working Group (2006); MDS: myelodysplastic syndromes; pRBC: packed red blood cells; RBC: red blood cell; RS: ring sideroblasts; sEPO: serum erythropoietin; U: Units.

* Randomization was stratified by RBC transfusion burden (≤4 vs. ≥4 pRBC units/8 weeks), RS status (RS+ vs. RS-; defined as RS ≥15% of erythroid precursors in bone marrow or ≥5%, but <15% if SF3B1 mutation was present) and endogenous sEPO level (≤200 vs >200 to <500 U/L) at baseline.

† The efficacy analysis population is comprised of subjects who completed 169 days (24 weeks) of treatment or discontinued early.



THE COMMANDS TRIAL INCLUDED PATIENTS WITH VERY LOW- TO INTERMEDIATE-RISK MDS WITHOUT PREVIOUS ESA TREATMENT¹

Baseline demographics and disease characteristics of patients in the phase 3 COMMANDS trial (ITT population)

Demographics	REBLOZYL (n=178)	Epoetin alfa (n=178)
Age (years) median (min, max)	74 (46, 93)	75 (33, 91)
Age categories, n (%)		
≤64 years	27 (15.2)	23 (12.9)
65-74 years	65 (36.5)	65 (36.5)
≥75 years	86 (48.3)	90 (50.6)
Sex, n(%)		
Male	107 (60.1)	91 (51.1)
Female	71 (39.9)	87 (48.9)
Race, n (%)		
Asian	19 (10.7)	24 (13.5)
Black	2 (1.1)	0
White	142 (79.8)	141 (79.2)
Not collected or reported	15 (8.4)	13 (7.3)
Disease Characteristics		
Hemoglobin (g/L), n (%)[*]		
Median (min, max)	78.0 (47.0, 92.0)	78.0 (45.0, 102.0)
Time since original MDS diagnosis (months)^{††}		
Median	8.02	5.17
Serum EPO (U/L) categories, n (%)		
≤200	141 (79.2)	141 (79.2)
>200 to <500	37 (20.8)	37 (20.8)
Median serum EPO	78.710	85.910
Baseline transfusion burden (pRBC units), n (%)[§]		
<4 units	114 (64.0)	109 (61.2)
= 2 units	80 (44.9)	79 (44.4)
≥4 units	64 (36.0)	69 (38.8)

Adapted from the REBLOZYL Product Monograph.

Disease Characteristics	REBLOZYL (n=178)	Epoetin alfa (n=178)
MDS Classification WHO 2016 at baseline, n (%)		
MDS-SLD	1 (0.6)	4 (2.2)
MDS-MLD	49 (27.5)	46 (25.8)
MDS-RS-SLD	2 (1.1)	6 (3.4)
MDS-RS-MLD	125 (70.2)	117 (65.7)
MDS/MPN-RS-T	1 (0.6)	4 (2.2)
Missing	0	1 (0.6)
IPSS-R classification risk category, n (%)		
Very low	16 (9.0)	17 (9.6)
Low	131 (73.6)	257 (72.2)
Intermediate	28 (15.7)	62 (17.4)
Other/missing	2 (1.2)	2 (1.1)
Ring sideroblast status (per WHO criteria), n (%)		
RS+	130 (73.6)	128 (71.9)
RS-	48 (27.0)	49 (27.5)
Missing	0 (0)	1 (0.6)
SF3B1 mutation status, n (%)		
Mutated	111 (62.4)	99 (55.6)
Non-mutated	65 (36.5)	72 (40.4)
Missing	2 (1.1)	7 (3.9)

EPO: erythropoietin; ESA: erythropoiesis-stimulating agent; Hgb: hemoglobin; IPSS-R: International Prognostic Scoring System-Revised; MDS: myelodysplastic syndromes; MDS/MPN-RS-T: myelodysplastic/myeloproliferative neoplasms with ring sideroblasts and thrombocytosis; MLD: multilineage dysplasia; pRBC: packed red blood cells; RS: ring sideroblast; WHO: World Health Organization.

^{*} After applying 14/3-day rule (only Hb values that are measured at least 14 days after a transfusion may be used unless there is another transfusion within 3 days after the Hb assessment. If a transfusion within 3 days after the Hb assessment occurs, that Hb value will be used despite being <14 days after the previous transfusion), the baseline Hgb value (efficacy) is defined as the lowest Hgb value from the central, local laboratory, or pre-transfusion Hgb from transfusion records that is within 35 days on or prior to the first dose of study drug if it was available.

[†] The number of months from the date of original diagnosis to the date of informed consent.

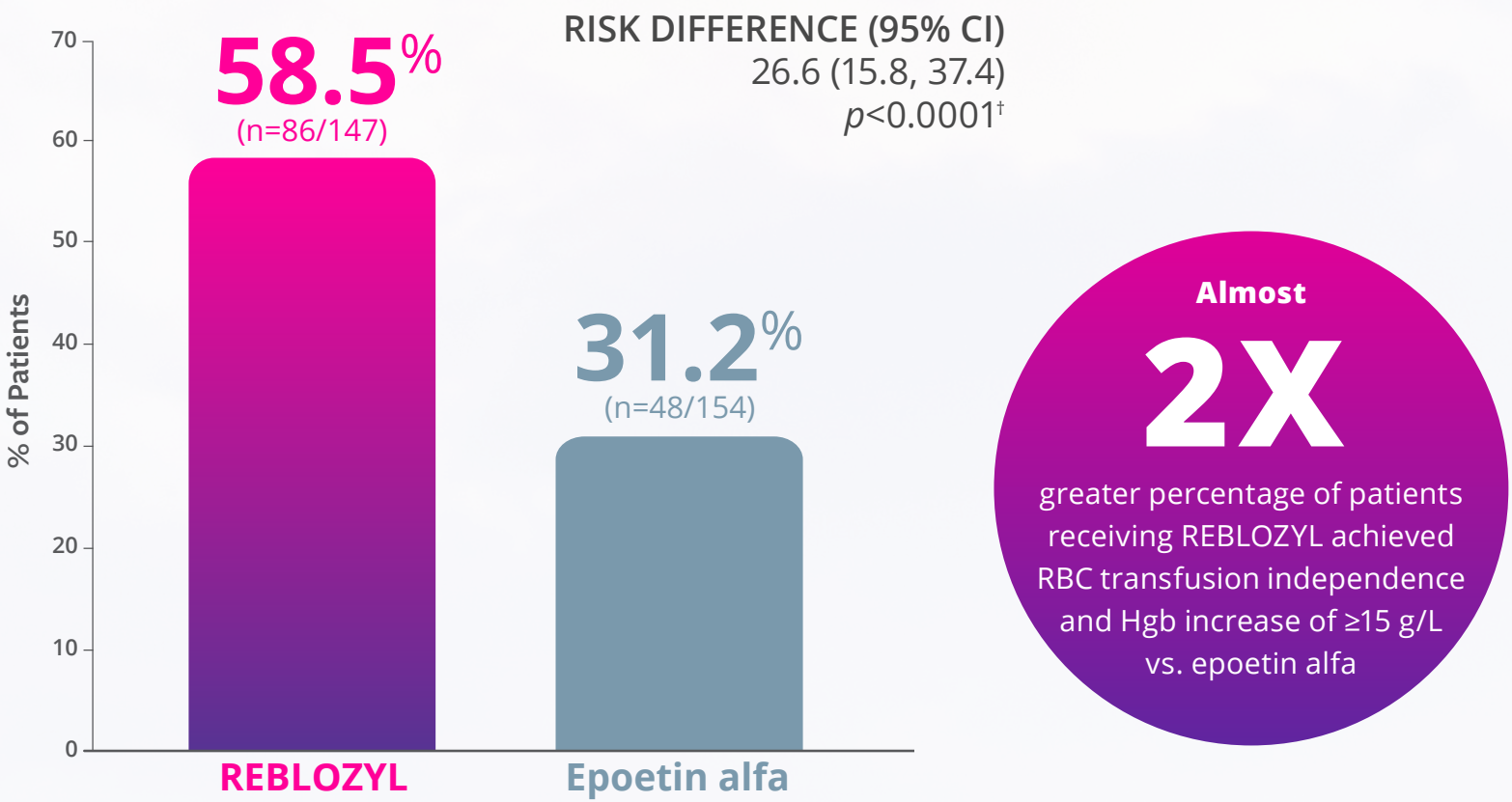
[‡] The MDS diagnosis was made using the screening bone marrow evaluation for 2 subjects. 1 patient had an original diagnosis date 28-Apr-2021 and an ICF date 23-Apr-2021. 1 subject had an original diagnosis date 15-Jul-2021 and an ICF date 07-Jul-2021.

[§] Baseline transfusion burden: the number of RBC units received 8 weeks prior to or on the first dose date.



REBLOZYL PROVIDED A **SIGNIFICANT INCREASE IN THE PROPORTION OF PATIENTS WHO EXPERIENCED RBC-TI** FOR 12 WEEKS WITH ASSOCIATED CONCURRENT MEAN HGB INCREASE OF ≥ 15 G/L (WEEKS 1–24) VS. EPOETIN ALFA (EFFICACY ANALYSIS POPULATION)^{1*}

PROPORTION OF PATIENTS WHO MET THE PRIMARY ENDPOINT (WEEKS 1–24)¹



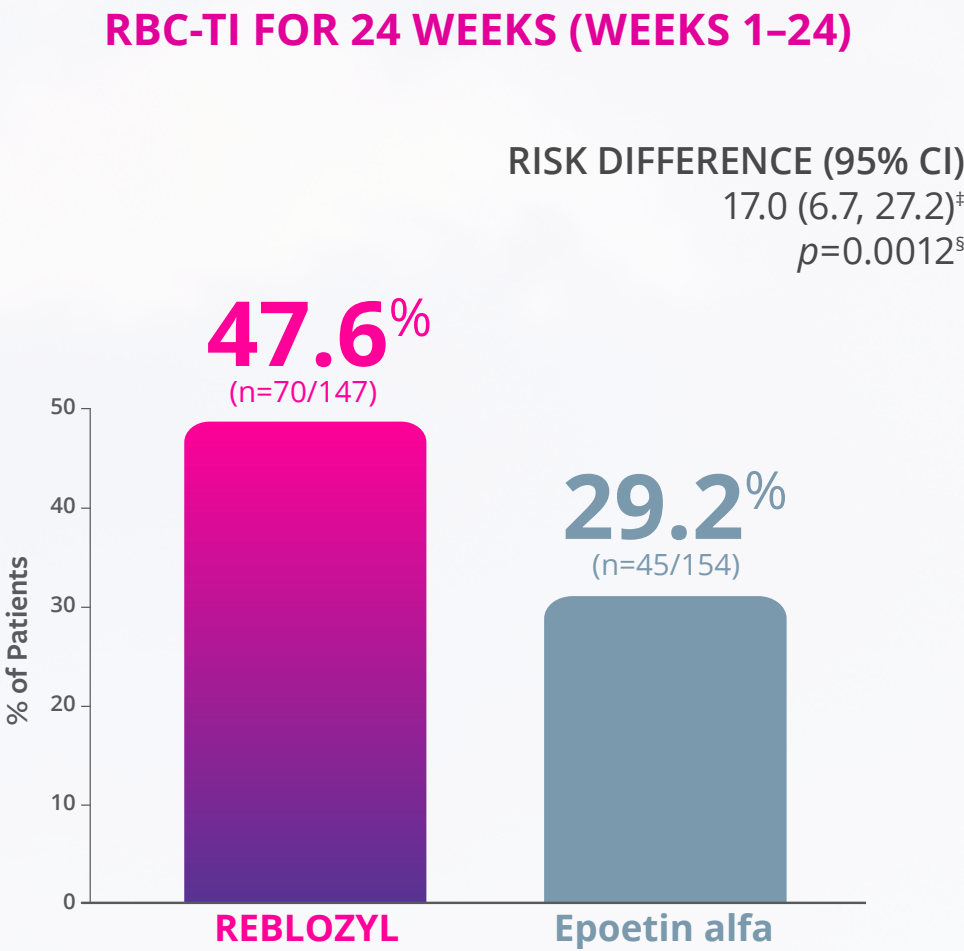
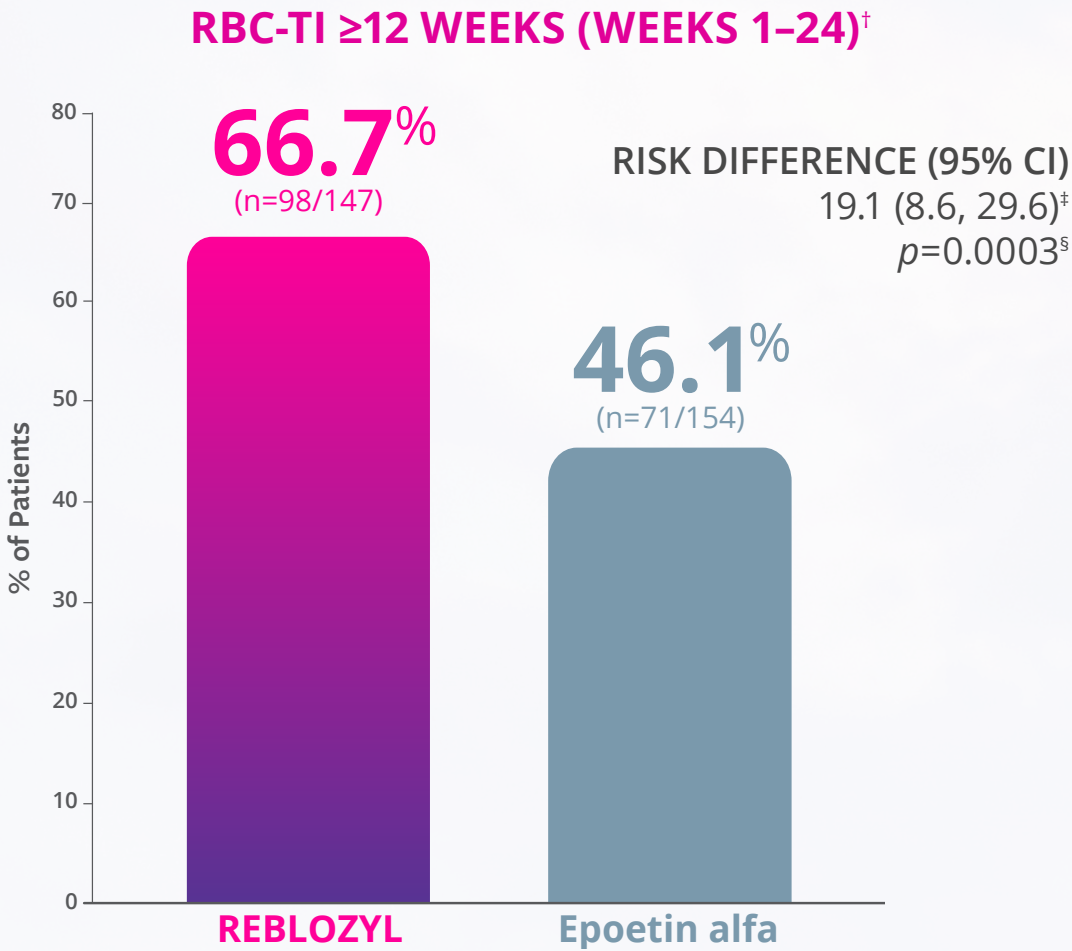
Adapted from the REBLOZYL Product Monograph.

CI: confidence interval; Hgb: hemoglobin; RBC-TI: red blood cell transfusion independence.
* The efficacy analysis population were comprised of subjects who completed 169 days (24 weeks) of treatment or discontinued early.
[†] 2-sided p -value is presented and the statistical significance level is two-sided p -value 0.03.



REBLOZYL HAD **SIGNIFICANTLY HIGHER RATES OF RBC TRANSFUSION INDEPENDENCE (RBC-TI) ≥12 WEEKS** VS. EPOETIN ALFA (WEEKS 1–24)^{1*}

REBLOZYL HAD **SIGNIFICANTLY HIGHER RATES OF RBC-TI FOR 24 WEEKS** VS. EPOETIN ALFA (WEEKS 1–24)^{1*}



Adapted from the REBLOZYL Product Monograph.

CI: confidence interval; CMH: Cochran-Mantel-Haenszel; NE: not estimable; pRBC: packed red blood cells; RBC: red blood cell; RS: ring sideroblasts; sEPO: serum erythropoietin; U: Units.
* The efficacy analysis population were comprised of subjects who completed 169 days (24 weeks) of treatment or discontinued early.
† The median duration (95% CI) of RBC-TI ≥12 weeks was 126.6 weeks (108.3, NE) and 77.0 weeks (39.0, NE) in the REBLOZYL arm and the epoetin alfa arm, respectively.
‡ Based on CMH test stratified by baseline RBC transfusion burden (<4, ≥4 pRBC units), RS status (RS+, RS-) and sEPO level (≤200, >200 U/L). 2-sided *p*-value is presented.
§ 2-sided *p*-value is presented and the statistical significance level is two-sided *p*-value 0.03.



REBLOZYL HAS A PROVEN SAFETY PROFILE¹

At the time of the planned interim analysis of the COMMANDS trial, the median duration of treatment in the REBLOZYL group was longer than the epoetin alfa arm (41.6 vs. 27.0 weeks) and a higher proportion of patients in the REBLOZYL group completed 48 weeks of treatment (45.5% vs. 32.4%).

TEAEs (≥5%) reported in patients with MDS in COMMANDS

System organ class/ preferred term	REBLOZYL (n = 178)		Epoetin alfa (n = 178)	
	All Grades n (%)	Grades 3-4 n (%)	All Grades n (%)	Grades 3-4 n (%)
Blood and lymphatic system disorders				
Anemia	17.6 (9.6)	13 (7.3)	17 (9.7)	12 (6.8)
Thrombocytopenia	11 (6.2)	7 (3.9)	3 (1.7)	1 (0.6)
Neutropenia	9 (5.1)	7 (3.9)	13 (7.4)	10 (5.7)
Gastrointestinal disorders				
Diarrhea	26 (14.6)	2 (1.1)	20 (11.4)	1 (0.6)
Nausea	21 (11.8)	0 (0.0)	13 (7.4)	0 (0.0)
General disorders and administration site conditions				
Fatigue	26 (14.6)	1 (0.6)	12 (6.8)	1 (0.6)
Edema peripheral	23 (12.9)	0 (0.0)	12 (6.8)	0 (0.0)
Asthenia	22 (12.4)	0 (0.0)	25 (14.2)	1 (0.6)
Non-cardiac chest pain	9 (5.1)	1 (0.6)	6 (3.4)	0 (0.0)
Pyrexia	9 (5.1)	1 (0.6)	12 (6.8)	1 (0.6)
Infections and infestations				
COVID-19	19 (10.7)	6 (3.4)	17 (9.7)	2 (1.1)
Urinary tract infection	13 (7.3)	3 (1.7)	7 (4.0)	2 (1.1)
Pneumonia	8 (4.5)	7 (3.9)	15 (8.5)	11 (6.3)
Metabolism and nutrition disorders				
Hyperuricemia	12 (6.7)	1 (0.6)	10 (5.7)	1 (0.6)
Musculoskeletal and connective tissue disorders				
Back pain	16 (9.0)	2 (1.1)	13 (7.4)	3 (1.7)
Arthralgia	10 (5.6)	0 (0.0)	14 (8.0)	0 (0.0)
Myalgia	9 (5.1)	0 (0.0)	5 (2.8)	0 (0.0)
Osteoarthritis	9 (5.1)	1 (0.6)	4 (2.3)	0 (0.0)

Adapted from the REBLOZYL Product Monograph.

RS: ring sideroblast; TEAE: treatment-emergent adverse event.

System organ class/ preferred term	REBLOZYL (n = 178)		Epoetin alfa (n = 178)	
	All Grades n (%)	Grades 3-4 n (%)	All Grades n (%)	Grades 3-4 n (%)
Nervous system disorders				
Dizziness	16 (9.0)	1 (0.6)	15 (8.5)	0 (0.0)
Headache	15 (8.4)	0 (0.0)	12 (6.8)	1 (0.6)
Syncope	7 (3.9)	6 (3.4)	5 (2.8)	2 (1.1)
Psychiatric disorders				
Insomnia	9 (5.1)	0 (0.0)	6 (3.4)	2 (1.1)
Respiratory, thoracic and mediastinal disorders				
Dyspnea	21 (11.8)	7 (3.9)	13 (7.4)	2 (1.1)
Dyspnea exertional	9 (5.1)	1 (0.6)	1 (0.6)	0 (0.0)
Vascular disorders				
Hypertension	23 (12.9)	15 (8.4)	12 (6.8)	8 (4.5)

Asthenia, fatigue, nausea, diarrhea, dizziness, hypertension, and dyspnea occurred more frequently during the first 3 months of treatment.

RS- patients are more likely to experience serious adverse events, Grade 5 TEAE, adverse events leading to drug discontinuation or dose reduction compared to patients with ring sideroblasts (RS+). In the COMMANDS trial, RS- patients showed higher incidence of some adverse reactions compared to RS+ patients in both treatment arms. When comparing RS subgroups in the REBLOZYL arm, asthenia, nausea, vomiting, dyspnea, cough, thromboembolic events, alanine aminotransferase increased, aspartate aminotransferase increased, and thrombocytopenia occurred more frequently in the RS- subgroup.



REBLOZYL HAS A **PROVEN SAFETY PROFILE**¹

Treatment discontinuations and dose modifications due to adverse events

DISCONTINUATIONS DUE TO AN ADVERSE EVENT

9.6%
REBLOZYL

VS

6.3%
Epoetin alfa

DOSE INTERRUPTION DUE TO AN ADVERSE EVENT

27.0%
REBLOZYL

VS

22.7%
Epoetin alfa

DOSE REDUCTIONS DUE TO AN ADVERSE EVENT

2.8%
REBLOZYL

VS

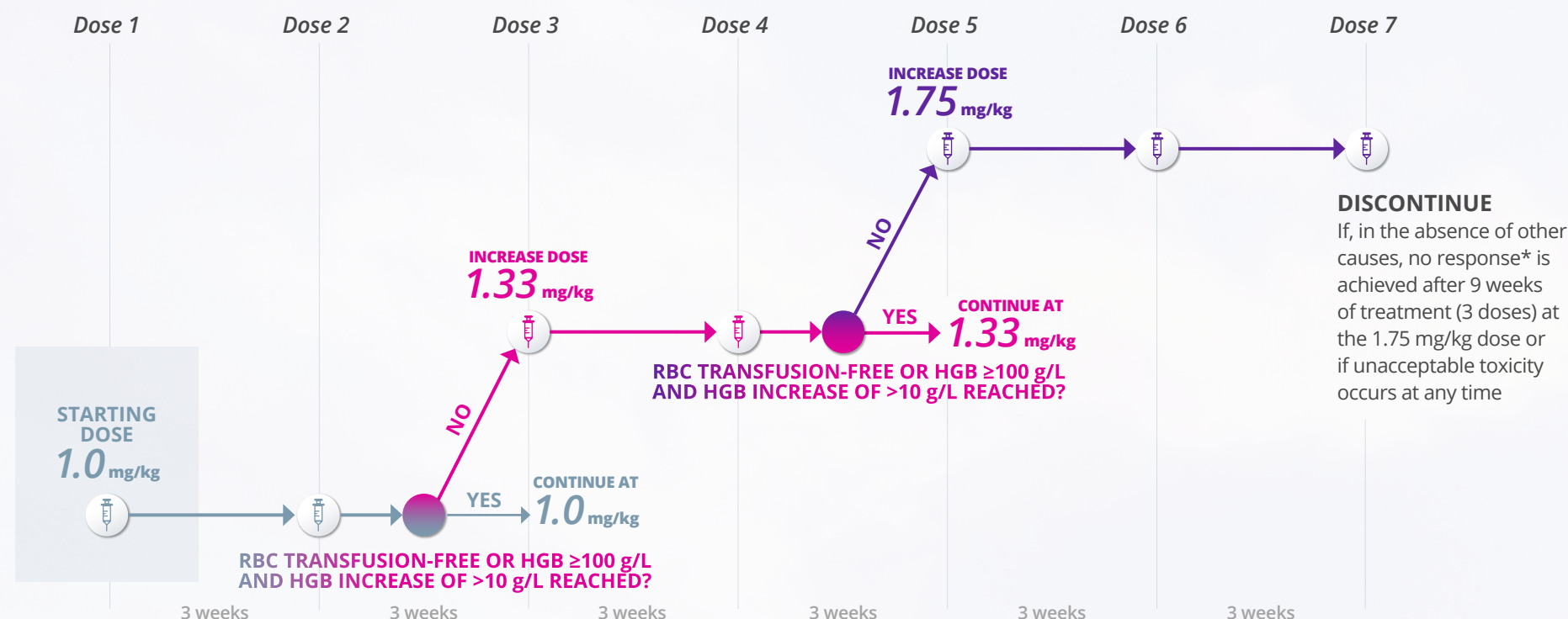
3.4%
Epoetin alfa

Adapted from the REBLOZYL Product Monograph.



REBLOZYL DOSING RECOMMENDATIONS

Consider dose titration for insufficient response from treatment initiation¹



- REBLOZYL dose can be increased if the patient is not RBC transfusion-free or does not reach Hgb concentration of ≥100 g/L and Hgb increase is <10 g/L after at least 2 consecutive doses (6 weeks)
- The dose should not be increased more frequently than every 6 weeks
- The dose should not exceed the maximum dose of 1.75 mg/kg

Adapted from the REBLOZYL Product Monograph.

Assess and review Hgb results prior to each administration¹

- Start patients at the recommended starting dose of 1 mg/kg by subcutaneous (SC) injection once every 3 weeks
- If an RBC transfusion occurred prior to dosing, the pre-transfusion Hgb must be considered for dosing purposes
- If the pre-dose Hgb is ≥115 g/L and the Hgb level is not influenced by recent transfusion, delay dosing until the Hgb is ≤110 g/L

Dosing considerations¹

- There are limited clinical data in patients with severe renal impairment (eGFR <30 mL/min/1.73 m²) and therefore no dosing recommendations are available. No dose adjustments are required for patients with mild to moderate renal impairment (mild [eGFR 60–89 mL/min/1.73 m²]; moderate [eGFR 30–59 mL/min/1.73 m²])
- No dose adjustment is required for patients with mild to severe hepatic impairment (elevated bilirubin [4–246 µmol/L] and ALT or AST <3 x ULN). Pharmacokinetic data are not available for patients with AST or ALT ≥3 x ULN
- No dose adjustments are required for geriatric patients (≥65 years of age)
- Discontinue REBLOZYL in case of EMH masses causing serious complications

ALT: alanine aminotransferase; AST: aspartate aminotransferase; eGFR: estimated glomerular filtration rate; EMH: extramedullary hematopoietic; Hgb: hemoglobin; RBC: red blood cell; ULN: upper limit of normal.

* Defined as a decrease in transfusion burden including no increase in Hgb from baseline levels.



DOSE ADJUSTMENT RECOMMENDATIONS

Reduce dose if there is an increase in Hgb >20 g/L within 3 weeks, and in the absence of transfusion

REBLOZYL DOSING RECOMMENDATIONS FOR MDS	
Current dose	Dosing recommendation
1.75 mg/kg	1.33 mg/kg
1.33 mg/kg	1.0 mg/kg
1.0 mg/kg	0.8 mg/kg
0.8 mg/kg	0.6 mg/kg
0.6 mg/kg	Discontinue REBLOZYL

Adapted from the REBLOZYL Product Monograph.

Modify dosing with REBLOZYL to help manage adverse events

Adverse events*	Dose modifications
Any Grade 2 adverse event	Delay dose until resolved to ≤ Grade 1
Grade 3 or 4	
Hypersensitivity reactions	Discontinue REBLOZYL
Leukocytosis [†] or suspected hematologic malignancy	Delay dose until resolved to ≤ Grade 1 Discontinue if hematologic malignancy is confirmed
Other adverse events	Delay dose until resolved to ≤ Grade 1

Adapted from the REBLOZYL Product Monograph.

* Grades as per NCI-CTCAE or when not defined: Grade 1 is mild, Grade 2 is moderate, Grade 3 is severe, and Grade 4 is life-threatening.


[†] Leukocytosis is defined as >100,000 WBC/μL.



REBLOZYL SHOULD BE RECONSTITUTED AND
ADMINISTERED BY A HEALTHCARE PROFESSIONAL

Available in 2 strengths as single-use vials for reconstitution¹

RECONSTITUTION VOLUMES			
Vial size	Amount of Sterile Water for Injection, USP required for reconstitution	Approximate deliverable volume	Nominal concentration per mL
25 mg vial	0.68 mL	0.5 mL	25 mg/0.5 mL (50 mg/mL)
75 mg vial	1.6 mL	1.5 mL	75 mg/1.5 mL (50 mg/mL)



Adapted from the REBLOZYL Product Monograph.

Healthcare professionals should reconstitute¹:

- Using Sterile Water for Injection, USP only
- The number of REBLOZYL vials to achieve the appropriate dose based on the patient’s weight
 - Using a syringe with suitable graduations for reconstitution to ensure accurate dosage



REBLOZYL RECONSTITUTION INSTRUCTIONS

Adhere to the following steps to properly reconstitute REBLOZYL¹



- 1 Reconstitute with Sterile Water for Injection, USP,** using volumes described in the Reconstitution Volumes table on [page 29](#), with the stream directed into the lyophilized powder. Allow to stand for 1 minute.



- 2 Discard the needle and syringe used for reconstitution.** The needle and syringe used for reconstitution should not be used for subcutaneous injection.



- 3 Mix and wait.** Gently swirl the vial in a circular motion for 30 seconds. Stop swirling and let the vial sit in upright position for 30 seconds.



- 4 Inspect.** Inspect the vial for undissolved particles in the solution. If undissolved powder is observed, repeat step 3 until the powder is completely dissolved.



- 5 Mix and wait.** Invert the vial and gently swirl in an inverted position for 30 seconds. Bring the vial back to the upright position, and let it sit for 30 seconds.



- 6 Repeat.** Repeat step 5 seven more times to ensure complete reconstitution of material on the sides of the vial.



- 7 Inspect.** Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration whenever solution and container permit. REBLOZYL is a colourless to slightly yellow, clear to slightly opalescent solution which is free of foreign particulate matter. Do not use if undissolved product or foreign particulate matter is observed.



- 8 Storage.** If the reconstituted solution is not used immediately:
 - Store at room temperature at 20°C to 25°C in the original vial for up to 8 hours. Discard if not used within 8 hours of reconstitution.
 - Alternatively, store refrigerated at 2°C to 8°C for up to 24 hours in the original vial. Remove from refrigerated conditions 15–30 minutes prior to injection to allow solution to reach room temperature for a more comfortable injection. Discard if not used within 24 hours of reconstitution.
 - **Do not freeze the reconstituted solution.**

Adapted from the REBLOZYL Product Monograph.



REBLOZYL SC ADMINISTRATION¹

- Prior to injection, allow the solution to reach room temperature for a more comfortable injection

STEP

1 Verify correct dose for the patient

- Calculate the exact total dosing volume of 50 mg/mL solution required for the patient according to the table on [page 29](#)

STEP

2 Plan and prep for injection

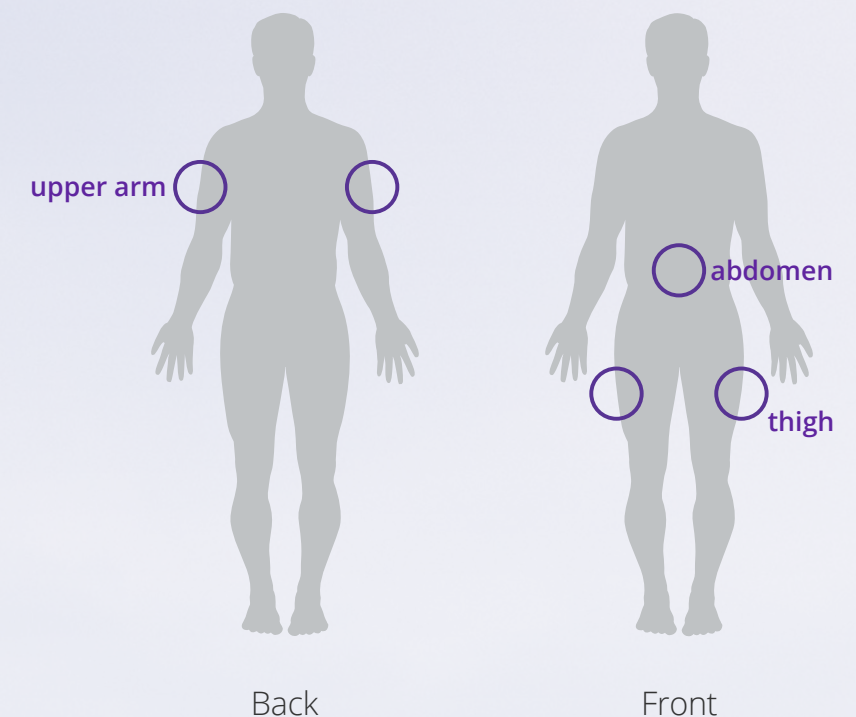
- Slowly withdraw the dosing volume of the reconstituted REBLOZYL solution from the single-use vial(s) into a syringe
- Divide doses requiring larger reconstituted volumes (i.e., >1.2 mL) into separate similar volume injections and inject into separate sites

STEP

3 Perform subcutaneous administration

- If multiple injections are required, use a new syringe and needle for each SC injection
- Administer the SC injection into the upper arm, thigh, and/or abdomen

Sample administration of a REBLOZYL dose larger than 1.2 mL



NOTE: Discard any unused portion. Do not pool unused portions from the vials. Do not administer more than 1 dose from a vial. Do not mix with other medications.



REBLOZYL REQUIRES **REFRIGERATED STORAGE**¹



Storage of unreconstituted vial

- Store unreconstituted vials refrigerated at 2°C to 8°C in original carton to protect from light
- Do not freeze



Storage of reconstituted solution

- If the reconstituted solution is not used immediately, store at room temperature at 20°C to 25°C in the original vial for up to 8 hours. Discard if not used within 8 hours of reconstitution
- Alternatively, the reconstituted solution can be refrigerated at 2°C to 8°C for up to 24 hours in the original vial
 - Remove from refrigerated conditions 15–30 minutes prior to injection to allow the solution to reach room temperature for a more comfortable injection
 - Discard if not used within 24 hours of reconstitution
- Do not freeze the reconstituted solution

Clinical use:

Pediatrics (<18 years of age): Health Canada has not authorized an indication for pediatric use.

Geriatrics (>65 years of age): No differences in safety or effectiveness were observed between older (≥65 years) and younger patients when compared to placebo.

Relevant warnings and precautions:

- Extramedullary hematopoietic (EMH) masses: Not recommended for patients requiring treatment for EMH masses.
- Hypertension: Monitor blood pressure prior to each administration.
- Thrombosis/Thromboembolic events (TEEs), including deep vein thrombosis, pulmonary emboli, and ischemic stroke.

- Monitoring and laboratory testing: Assess and review Hgb results prior to each administration of REBLOZYL.
- Pregnancy: Potential for fetal harm when administered to pregnant women. Females of childbearing potential should be advised to avoid becoming pregnant while receiving REBLOZYL treatment. They are also advised to use effective contraception during treatment and for at least 3 months after the last dose.
- The safe use of REBLOZYL during breast-feeding has not been established.

For more information:

Consult the [REBLOZYL Product Monograph](#) for important information relating to adverse reactions, drug interactions, and dosing information, that have not been discussed in this piece. The Product Monograph is also available by calling our medical department at: 1-866-463-6267.





REBLOZYL provided significant increase in the proportion of patients who were RBC-TI vs placebo^{1†}

- 37.9% of patients treated with REBLOZYL achieved RBC-TI for ≥8 weeks from week 1 to week 24 compared to 13.2% of patients with placebo ($p < 0.0001$) (primary endpoint)



The recommended starting dose of REBLOZYL is 1 mg/kg once every 3 weeks by SC injection¹

- Doses with REBLOZYL can be titrated upwards according to individual response to treatment
- Discontinue REBLOZYL if, in the absence of other causes, a patient does not achieve a response (defined as a decrease in transfusion burden including no increase in hemoglobin from baseline levels) after 9 weeks of treatment (3 doses) at the 1.75 mg/kg dose or if unacceptable toxicity occurs at any time



REBLOZYL has a proven safety profile¹

- The most common TEAEs in patients treated with REBLOZYL (≥10% and with ≥1% frequency vs placebo) in the MEDALIST trial were fatigue, diarrhea, asthenia, nausea, dizziness, back pain, cough, headache, dyspnea, urinary tract infection, bronchitis, constipation
- Treatment discontinuation due to an adverse event occurred in 8.5% of REBLOZYL-treated and 7.9% of placebo-treated patients
 - The most common adverse events leading to discontinuation were transformation to AML, fatigue, and sepsis (1.3% each)

The first and only erythroid maturation agent indicated in adult patients with transfusion-dependent anemia resulting from very low- to intermediate-risk MDS*

REBLOZYL PROMOTED ERYTHROID MATURATION through differentiation of late-stage erythroid precursors (normoblasts) in mice^{1*}

REBLOZYL (luspatercept for injection) is indicated for:

- the treatment of adult patients with transfusion-dependent anemia due to very low- to intermediate-risk MDS who have not been previously treated with an erythropoiesis stimulating agent (ESA-naïve).
- the treatment of adult patients with transfusion-dependent anemia requiring at least two red blood cell (RBC) units over 8 weeks resulting from very low- to intermediate-risk MDS who have ring sideroblasts (RS+) and who have failed or are not suitable for erythropoietin-based therapy.

REBLOZYL is an erythroid maturation agent. It is not indicated for use as a substitute for RBC transfusions in patients who require immediate correction of anemia.¹

AML: acute myeloid leukemia. EPO: erythropoietin; SC: subcutaneous; TEAE: treatment-emergent adverse event.

* Clinical significance is unknown.

† RBC-TI was defined as the absence of any RBC transfusion during any consecutive 56-day (8-week) period during the primary phase of the treatment period (first 24 weeks of double-blind treatment).

REFERENCES



DISCOVER REBLOZYL



REBLOZYL provided significant increase in the proportion of patients who were RBC-TI vs placebo^{1†}

- 37.9% of patients treated with REBLOZYL achieved RBC-TI for ≥8 weeks from week 1 to week 24 compared to 13.2% of patients with placebo (*p*<0.0001) (primary endpoint)

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treated with an erythropoiesis stimulating agent (ESA-naïve).

- the treatment of adult patients with transfusion-dependent anemia requiring at least two red blood cell (RBC) units over 8 weeks resulting from very low- to intermediate-risk MDS who have ring sideroblasts (RS+) and who have failed or are not suitable for erythropoietin-based therapy.

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REFERENCES



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