Abstract: P774

Title: RELATIONSHIP BETWEEN HAEMOGLOBIN AND QUALITY OF LIFE IN TRANSFUSION-DEPENDENT PATIENTS WITH LOWER-RISK MYELODYSPLASTIC SYNDROME RECEIVING LUSPATERCEPT OR EPOETIN ALFA

Abstract Type: Poster Presentation

Topic: Myelodysplastic syndromes - Clinical

Background:

Anaemia is a common consequence of myelodysplastic syndrome (MDS) that leads to elevated levels of fatigue and dyspnoea and impaired quality of life (QoL). The goals of treatment in anaemic patients with low-risk MDS (LR-MDS) are to increase haemoglobin (Hb) level and improve QoL. However, the Hb level that should be reached to achieve meaningful improvement in anaemia symptoms and/or QoL as perceived by MDS patients is still unclear.

Aims:

The aim of this post-hoc analysis was to explore the relationship between Hb level and QoL in red blood cell (RBC) transfusion-dependent (TD) first-line patients with LR-MDS treated with luspatercept or epoetin alfa.

Methods:

Patient-reported outcomes (PROs) and Hb levels collected in the phase 3 COMMANDS randomized controlled trial were used to inform the analysis. Two PRO measures were used: the European Organisation for Research and Treatment of Cancer (EORTC) Quality of Life Core 30 questionnaire (QLQ-C30), administered every 6 weeks; and the Functional Assessment of Cancer Therapy – Anemia questionnaire (FACT-An), administered weekly for the first 3 weeks and every 3 weeks thereafter. Hb levels were assessed every 3 weeks or when deemed necessary by investigators. Seven anaemia-related domain scores, including EORTC QLQ-C30 global health status/quality of life (GHS/QoL), physical functioning (PF), fatigue (FA), dyspnoea (DY), FACT-An fatigue subscale (FS), anaemia subscale (AS), and total score (TS), were selected for this analysis. To explore the relationship between Hb level and QoL, linear mixed-effects regression models were developed with change from baseline in each PRO domain as the dependent variable and time-varying Hb level as the independent variable, adjusting for other relevant baseline covariates (i.e., PRO score, age, sex, RBC transfusion burden, ring sideroblast status, and serum erythropoietin levels). Three models were developed for each PRO domain varying the parameterization of Hb level: (1) change from baseline (continuous), (2) change from baseline (≥1.5 vs. <1.5 g/dL), (3) absolute value (≥10 vs. <10 g/dL). Analyses were conducted on the intent-to-treat (ITT) population (pooled across treatment arms). Data collected through Week 37 were included in the analyses to ensure model convergence.

Results:

319 subjects were included in the analyses (n=163 [51.1%] on luspatercept and n=156 [48.9%] on epoetin alfa), with 1,043 observations among QLQ-C30 domains and 2,772 among FACT-An domains. At baseline, subjects had a mean age of 73.6 years and an average Hb level of 7.6 g/dL. Increase in Hb level (continuous) was correlated with significant improvement in all PRO domains (**Table**; $p<0.01$). Subjects whose Hb level increased from baseline by ≥1.5 g/dL had a significantly greater improvement across all PRO domains, as compared to those with a change <1.5 g/dL (**Table**), and this improvement reached the clinically important difference (CID) threshold for the DY domain. Finally, reaching a Hb level ≥10 g/dL was also associated with significantly greater improvement than reaching a Hb level <10 g/dL across all domains, with the difference exceeding the CID for 3 domains (GHS/QoL, FA, and DY) (**Table**).

Summary/Conclusion:

This analysis indicates that increasing Hb levels was associated with clinically significant improvement in QoL. Achieving a Hb level ≥10 g/dL was more likely to result in meaningful improvement in anaemia-related fatigue and dyspnoea symptoms as well as QoL on the QLQ-C30. Findings from this analysis will help inform clinicians' decisions on the optimal Hb target for treatment of anaemic TD patients with LR-MDS.

			Coefficient (95% CI)	
Domain	Between -group CID	Change from Baseline in Hb (continuous)	Change from Baseline in Hb (≥1.5 vs. <1.5 g/dL)	Absolute Hb (≥10 vs. <10 g/dL)
QLQ-C30 GHS	±4	2.43 (1.54, 3.31)	3.94 (1.87, 6.02)	**5.18 (2.92, 7.44)**
QLQ-C30 PF	±5	2.30 (1.49, 3.10)	2.45 (0.62, 4.28)	3.93 (1.91, 5.95)
QLQ-C30 FA	±5	-3.20 (-4.24, -2.16)	-3.70 (-6.13, -1.27)	**-5.54 (-8.21, -2.87)**
QLQ-C30 DY	±4	-3.10 (-4.37, -1.83)	**-5.23 (-8.19, -2.28)**	**-4.78 (-8.00, -1.56)**
FACT-An FS	±3	1.21 (0.97, 1.45)	1.42 (0.92, 1.91)	1.29 (0.75, 1.83)
FACT-An AS	±4	1.54 (1.23, 1.84)	1.76 (1.13, 2.38)	1.64 (0.96, 2.33)
FACT-An TS	±7	2.66 (2.09, 3.23)	3.04 (1.88, 4.20)	2.99 (1.72, 4.27)

Notes: P <0.01 for all coefficients. Coefficients that exceeded the CID are bolded in green. A decrease in score in FA and DY indicates less symptoms/better QoL, while an increase in the other domains indicates less symptoms/better QoL.
AS = anaemia subscale; CI = confidence interval; CID = clinically important difference; DY = dyspnoea; FA = fatigue; FACT-An = Functional Assessment of Cancer Therapy - Anemia; FS = fatigue subscale; GHS = global health status; Hb = haemoglobin; PF = physical functioning; QLQ-C30 = Quality of Life Core 30 questionniare; TS = total score.

Keywords: Quality of life, Patient reported outcomes, Hemoglobin, Myelodysplastic syndrome