Effectiveness and Safety of Damoctocog Alfa Pegol in Patients with Hemophilia A With a History of Factor VIII Inhibitors from the Real-World HEM-POWR Study

Poster No. 28

Mark T Reding,[1] María Teresa Alvarez Román,[2] Martin Sanabria,[3] Giancarlo Castaman,[4] **Maissaa Janbain***,[5] Tadashi Matsushita,[6] Karina Meijer,[7] Kathrin Schmidt,[8] Johannes Oldenburg[9]

[1]University of Minnesota Medical Center, Minneapolis, Minnesota, US; [2]Hospital Universitario La Paz, Madrid, Spain; [3]Bayer, Basel, Switzerland; [4]Careggi University Hospital, Florence, Italy; [5]Tulane School of Medicine, New Orleans, Louisiana, US; [6]Nagoya University Hospital, Nagoya, Japan; [7]University Medical Center Groningen, Groningen, the Netherlands; [8]Bayer, Berlin, Germany; [9]University Clinic Bonn, Bonn, Germany

***Presenting author**

CONCLUSIONS

- **Damoctocog alfa pegol continues to demonstrate real-world effectiveness and a favorable safety profile in previously treated patients (PTPs) with hemophilia A (HA), including patients with a history of Factor VIII (FVIII) inhibitors.**

AIMS

- **To assess the real-world effectiveness and safety of damoctocog alfa pegol in PTPs with HA receiving prophylactic damoctocog alfa pegol with a history of FVIII inhibitors.**

INTRODUCTION

- FVIII inhibitors present a complex challenge for the treatment of HA and develop in ~30% of patients with severe disease.[1]
- Patients with a history of inhibitor development were excluded from the registrational clinical trial program (PROTECT VIII [NCT01580293] and PROTECT VIII Kids [NCT01775618])[2–4] for damoctocog alfa pegol, an extended half-life recombinant FVIII product approved for PTPs aged ≥12 years with HA.
- The HEM-POWR study is evaluating the real-world effectiveness and safety of damoctocog alfa pegol in PTPs with HA, including those with a history of FVIII inhibitors.[5]

METHODS

- HEM-POWR (NCT03932201) is an ongoing, prospective, observational, multicenter Phase 4 study of damoctocog alfa pegol in PTPs with mild, moderate, or severe HA.
- This subgroup analysis included patients with HA and a history of FVIII inhibitors, who received standard prophylaxis therapy for ≥1 year prior to enrollment, and with no current evidence of FVIII inhibitors.
- The primary endpoint was annualized bleeding rate (ABR). Secondary endpoints included joint health and safety.
- Statistical analyses were descriptive and exploratory. Data were collated from patient diaries and physician records, and ethical approval was obtained at all sites.

RESULTS

- At the data cut-off (August 31, 2021), 17/146 patients (1 moderate, 16 severe HA) in the safety analysis set (SAF) had a previous history of inhibitors. A total of 10/78 patients (1 moderate, 9 severe HA) with FVIII inhibitors were included in the effectiveness analysis from the full analysis set (FAS).
- In the SAF, 2/17 (11.8%) patients had a family history of inhibitors. Prior to initial visit, 16/17 (94.1%) patients received prophylactic FVIII treatment, with 14/17 (82.4%) having received damoctocog alfa pegol (**Table 1**).

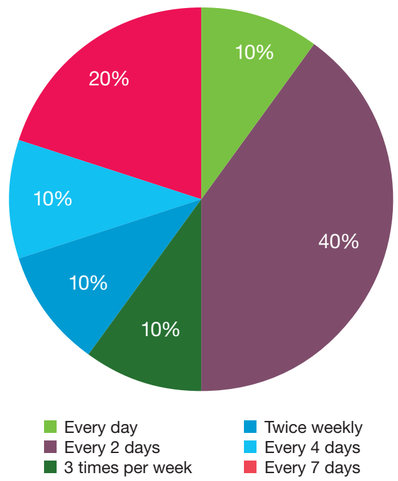
Table 1: DEMOGRAPHICS AND BASELINE CHARACTERISTICS

Characteristic	Safety Analysis Set (n=17)	Full Analysis Set (n=10)
Observation period, days, mean (SD), range	89.7 (102.4), 1–323	119.4 (112.2), 2–323
Male, n (%)	17 (100.0)	10 (100.0)
Age at enrollment, years, median (Q1, Q3)	32.0 (23.0, 39.0)	32.0 (26.0, 39.0)
Race, n (%)		
White	11 (64.7)*	7 (70.0)
Black or African American	0	0
Asian	5 (29.4)	3 (30.0)
Country of recruitment, n (%)		
Germany	10 (58.8)	6 (60.0)
Japan	3 (17.7)	2 (20.0)
Taiwan	2 (11.8)	1 (10.0)
United States of America	1 (5.9)	1 (10.0)
Sweden	1 (5.9)	0
Disease severity at diagnosis, n (%)		
Mild	0	0
Moderate	1 (5.9)	1 (10.0)
Severe	16 (94.1)	9 (90.0)
Family history of hemophilia, yes, n (%)	9 (52.9)	4 (40.0)
Prophylactic treatment before enrolment, yes, n (%)	16 (94.1)	10 (100.0)
Family history of inhibitors, yes, n (%)	2 (11.8)*	2 (20.0)
Immune tolerance induction history, yes, n (%)	6 (35.3)*	4 (40.0)
Patients pre-treated with damoctocog alfa pegol with a previous history of FVIII inhibitors	**Safety Analysis Set (n=14)**	**Full Analysis Set (n=9)**
Damoctocog alfa pegol prophylaxis treatment prior to initial visit, yes n (%)	13 (92.9)	9 (100.0)
Most recent damoctocog alfa pegol prophylaxis regimen prior to initial visit in pre-treated patients, n (%)†		
Every 2 days	5 (38.5)	4 (44.4)
3 times per week	2 (15.4)	1 (11.1)
Twice weekly	2 (15.4)	1 (11.1)
Every 4 days	1 (7.7)	1 (11.1)
Other‡	3 (21.4)	2 (22.2)

*Missing or unknown data for 1 patient; †SAF n=14; ‡other included every day, every 3 days, and 1 time per week. IU, international units; Q1, 1st quartile; Q3, 3rd quartile; SD, standard deviation.

- The most common prophylactic regimen with damoctocog alfa pegol during the observation period in the FAS was every 2 days (4/10, 40.0%) (**Figure 1**).

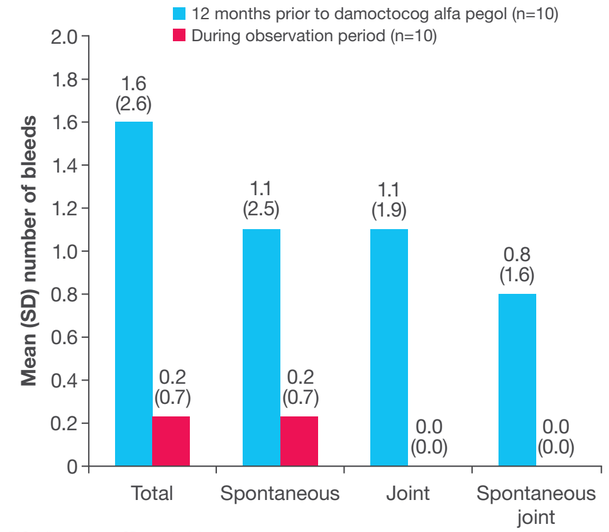
Figure 1: DAMOCTOCOG ALFA PEGOL FIRST DOSE DURING THE OBSERVATION PERIOD (FAS)



N=10.

- In the FAS (n=10), the median (mean, SD) total ABR during the observation period was 0.0 (0.2, 0.7). For spontaneous, joint, and spontaneous joint bleeds, the median (mean, SD) was 0.0 (0.2, 0.7), 0.0 (0.0, 0.0), and 0.0 (0.0, 0.0), respectively (**Table 2**).
- The total mean (SD) number of bleeds was 1.6 (2.6) for the 12 months prior to damoctocog alfa pegol initiation compared with 0.2 (0.7) during the observation period (**Figure 2**).
- The number of patients with no affected joints was 3/10 (30.0%) prior to damoctocog alfa pegol initiation compared with 4/10 (40.0%) at initial visit; 2/3 (66.7%) patients had no bleeds at the first follow-up window.
- Treatment-emergent adverse events (TEAEs) were reported for 3/17 (17.7%) of patients, with 2 (11.8%) TEAEs leading to a change in treatment regimen. No serious TEAEs or study drug–related TEAEs were reported. No patients developed new FVIII inhibitors.

Figure 2: MEAN (SD) NUMBER OF BLEEDS WITHIN 12 MONTHS PRIOR TO INITIATION OF DAMOCTOCOG ALFA PEGOL AND DURING THE OBSERVATION PERIOD (FAS)



FAS, full analysis set; SD, standard deviation.

Table 2: NUMBER OF REPORTED BLEEDS WITHIN 12 MONTHS PRIOR TO INITIATION OF DAMOCTOCOG ALFA PEGOL, DURING THE OBSERVATION PERIOD, AND THE DIFFERENCE IN ABR (FAS)

	Annualized number of bleeds by type (n=10)			
	Total	Spontaneous	Joint	Spontaneous joint
Number of bleeds within 12 months prior to initiation of damoctocog alfa pegol, median (Q1, Q3)	0.0 (0.0, 3.0)	0.0 (0.0, 1.0)	0.0 (0.0, 3.0)	0.0 (0.0, 1.0)
Annualized number of reported bleeds during observation period, median (Q1, Q3)	0.0 (0.0, 0.0)	0.0 (0.0, 0.0)	0.0 (0.0, 0.0)	0.0 (0.0, 0.0)
Difference in ABR during observation period compared with prior to initiation, median (Q1, Q3); mean (SD)	0.0 (–3.0, 0.0); –1.4 (2.8)	0.0 (–1.0, 0.0); –0.9 (2.7)	0.0 (–3.0, 0.0); –1.1 (1.9)	0.0 (–1.0, 0.0); –0.8 (1.6)

Data during the observation period were calculated based on an annualized rate, data from 12 months prior to initiation were the average number of bleeds over 12 months.
ABR, annualized bleeding rate; FAS, full analysis set; Q1, 1st quartile; Q3, 3rd quartile; SD, standard deviation.

References

1. Castaman G, et al. *Haematologica.* 2019;104(9):1702–9.
2. Fassel H, et al. *Br J Haematol.* 2021;194(5):835–50.
3. Reding MT, et al. *J Thromb Haemost.* 2017;15:411–19.
4. Santagostino E, et al. *Haemophilia.* 2020;26:e55-e65.
5. Sanabria M, et al. *BMJ Open.* 2021;11:e044997.

Disclosures

Conflict of interest: MTR: receipt of institutional research support from Bayer and BioMarin, member of advisory boards and/or speaker bureaus for Bayer, CSL Behring, Genentech, HEMA Biologics, Novo Nordisk, Sanofi, Spark, Takeda; **MTAR:** speaker in advisory boards and sponsored symposia with Novo Nordisk, Bayer, Takeda, Roche, Pfizer, Octapharma, Amgen, Novartis, CSL Behring, and Sobi; **MS:** employee of Bayer; **GC:** speaker at satellite symposia during scientific meetings for Bayer, Grifols, LFB, Roche, Sobi, Novo Nordisk, Werfen, and Kedrion, member of steering committee of UniQure, participant of advisory boards for Alexion, Bayer, BioMarin, Takeda, CSL Behring, LFB, Novo Nordisk, Pfizer, Roche, Sanofi, Sobi, and UniQure, consultant for Roche; **MJ:** member of speaker bureau for Takeda, BioMarin, CSL Behring, and Sanofi, consultancy for Takeda, CSL Behring, Sanofi, BioMarin, Genentech, and Octapharma, member of Bayer steering committee; **TM:** member of advisory boards for Takeda, Bayer, Novo Nordisk, Chugai, and Pfizer, receipt of educational and investigational support from Chugai and Novo Nordisk, received honoraria from Takeda, Bayer, Sanofi, Chugai, CSL Behring, JB Pharma, KMB Pharma, Novo Nordisk, Octapharma, and Sysmex; **KM:** receipt of speaker fees from Bayer and Alexion, participation in trial steering committee for Bayer, receipt of consulting fees from UniQure; **KS:** employee of Bayer; **JO:** reimbursed for attending symposia/congresses and/or received honoraria and/or funds for research from Bayer, Biogen Idec, Biotest, Chugai, CSL Behring, Novo Nordisk, Octapharma, Pfizer, Roche, Swedish Orphan Biovitrum, and Takeda.

Acknowledgements

Editorial support (in the form of writing assistance, including development of the initial draft based on author direction, collating authors' comments, and grammatical editing) was provided by Natalie Mitchell, MSc, of Fishawack Communications Ltd, UK, part of Fishawack Health, and was funded by Bayer. This study was funded by Bayer.

https://bit.ly/HTRS2023Janbain

Presented at the HTRS 2023 Scientific Symposium, March 10–12, 2023