Real-world reduction in oral corticosteroid utilization following efgartigimod initiation

EPO-408

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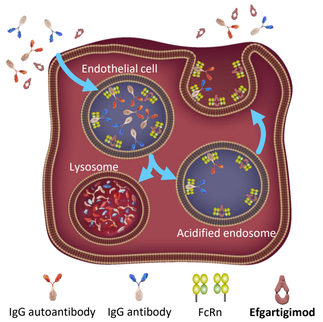
Introduction

Generalized myasthenia gravis (gMG)

- gMG is a rare antibody-mediated, neuromuscular disorder leading to a failure of neuromuscular junction transmission, characterized by fluctuating weakness in ocular, facial, bulbar, axial, and limb muscles.[1-3] The majority of patients (~85%) have autoantibodies against the acetylcholine receptor (AChR).[3]

Efgartigimod (EFG)

- EFG is a human IgG1 Fc fragment engineered to bind to the FcRn receptor on endothelial cells, leading to increased degradation of IgG (including pathological IgG) in the lysosome.[2]
- EFG was approved for the treatment of anti-AChR antibody–positive gMG in 2021,[2,4] and is typically dosed with 4 once weekly infusions with subsequent cycles administered according to individualized response.[5]



Oral corticosteroids (OCS)

- OCS are a mainstay therapy in the management of many autoimmune conditions including gMG[6,7] but are known to be associated with many short- and long-term side effects, especially when used at higher doses (≥10 mg/day).[8,9]
- Recent published case reviews on real-world efficacy for EFG note reduced OCS usage with the use of EFG,[10] and there is clinical interest in investigating whether novel gMG treatments can be used as steroid-sparing agents.

Objective

- The objective of this study was to utilize a large real-world dataset based on United States (US) claims to evaluate changes in OCS dosing after 6 months of EFG treatment.

Methods

Study type and dataset

- A retrospective cohort study was conducted based on US medical and pharmacy claims (based on information licensed from IQVIA: Longitudinal Access and Adjudication Data [LAAD] for the period April 2016-November 2023, reflecting estimates of real-world activity [all rights reserved]).
- Patient-reported Myasthenia Gravis Activities of Daily Living (MG-ADL) scores obtained from My VYVGART Path, a patient support program, were tokenized and integrated with the primary claims dataset. All data were de-identified and tokenized by an independent party, hence no identifiable patient data was obtained by the investigators of this study.

Inclusion/exclusion criteria

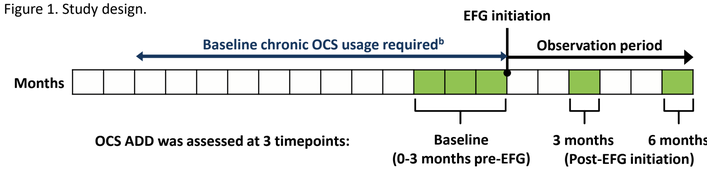
- First EFG claim between January 1 and December 31, 2022, with at least 6 months of ongoing EFG usage based on claims captured[a]; chronic OCS usage (based on claims present) during the 1 year prior to EFG initiation[b]; continuous quarterly claims activity with no concomitant usage of eculizumab, rituximab, or ravulizumab with EFG.[c]

Outcome

- Average daily dose (ADD) of OCS at 3 months (60-90 days) and 6 months (150-180 days) from baseline (pre-EFG), defined as[11]:

$$\frac{\text{Total OCS dose (strength x quantity)}^{d}}{\text{Total number of days within each timepoint}^{e}}$$

Figure 1. Study design.



a. Patients with a gap of >120 days between consecutive EFG claims were excluded. b. Baseline OCS usage was defined as any OCS usage present in the 0-30 days immediately prior to EFG initiation, *and* at least 90 days of cumulative OCS usage during the 1 year prior to EFG initiation. c. Continuous quarterly activity was defined as ≥1 record in database every quarter from 1 year pre-EFG to 6 months post-EFG initiation. d. OCS claims that were within 14 days of one another were considered as part of 1 OCS episode, and ADD was calculated per episode. e. OCS ADD was calculated at 3 timepoints: Pre-EFG (0-90 days immediately prior to EFG initiation), Post-EFG 3 months (60-90 days post-EFG initiation), and Post-EFG 6 months (150-180 days post-EFG initiation). OCS doses were converted to prednisone-equivalent strengths. Sensitivity analyses were performed wherein ADD was calculated based on the number of days of supply dispensed as the denominator. ADD, average daily dose; EFG, efgartigimod; OCS, oral corticosteroids.

Results

Patient cohort selection and baseline demographics and characteristics

- A total of 316 patients fulfilled the inclusion/exclusion criteria and were included in the analysis (Figure 2).
- Compared with typical cohorts of patients with gMG identified from US-based claims, a higher proportion of the study cohort had comorbidities, and over 75% of patients had been exposed to nonsteroidal immunosuppressive treatments (NSISTs) and/or other advanced gMG therapies concomitantly with OCS prior to EFG initiation (Table 1).

Figure 2. Patient cohort selection.

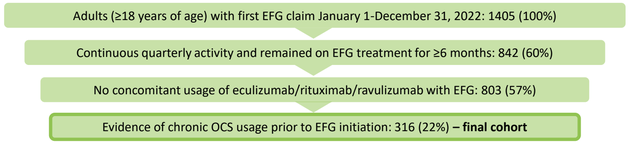


Table 1. Patient baseline demographics and characteristics.

	N=316
Age, years	
Mean (SD)	61.3 (15.0)
Median (IQR)	65 (52-73)
Gender, n (%)	
Female	143 (45.3)
Common gMG comorbidities, n (%)	
Hypertension	139 (44.0)
Diabetes	94 (29.7)
Sleep disorder	90 (28.5)
Obesity	76 (24.1)
Hyperlipidemia	74 (23.4)
Thyroid-related disorders	45 (14.2)
GERD	37 (11.7)
Depression	35 (11.1)
Coronary artery diseases	29 (9.2)
Osteoporosis	<20[d]

	N=316
Insurance type for first EFG claim, n (%)[a]	
Commercial	168 (53.2)
Medicare	139 (44.0)
Medicaid	<20[d]
Other/unknown	<20[d]
NSIST/advanced therapy[b] usage during 1-year period prior to EFG initiation, n (%)[c]	
NSIST only	95 (30.0)
Advanced therapy[b] only	58 (18.4)
NSIST + advanced therapy[b]	90 (28.5)
No NSIST or advanced therapy[b]	73 (23.1)

a. Percentages may not add up to 100% as patients may be tagged to multiple payer channels.
b. Advanced therapy included IVIg/SCIg, PLEX, eculizumab, and rituximab. c. A major proportion of patients in the cohort additionally used AChE inhibitors during the 1-year period prior to EFG initiation (data not shown). d. Patient counts <20 have been masked for privacy.
AChE, acetylcholinesterase; EFG, efgartigimod; GERD, gastroesophageal reflux disease; gMG, generalized myasthenia gravis; IQR, interquartile range; IVIg/SCIg, intravenous or subcutaneous immunoglobulin; NSIST, nonsteroidal immunosuppressive treatment; PLEX, plasma exchange; SD, standard deviation.

OCS tapering at 3 and 6 months post-EFG initiation

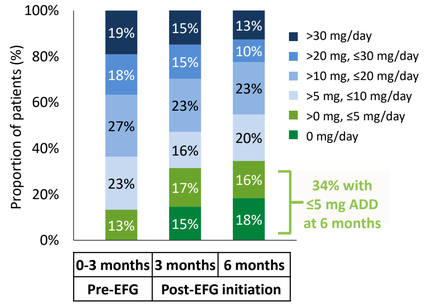
- By 6 months post-EFG initiation, 46% of patients reduced OCS usage by at least ≥5 mg/day on average. 34% of patients with prior steroid usage had an OCS ADD of ≤5 mg/day, and 54% had OCS ADD of ≤10 mg/day (Table 2 and Figure 3).
- By 6 months post-EFG initiation, 18% of patients were free of OCS usage (Table 2 and Figure 3).

Table 2. Changes in OCS ADD post-EFG initiation (N=316).

	Pre-EFG	Post-EFG initiation	
	0-3 months	3 months	6 months
OCS daily dose, mg/day			
Average (SD)	18.6 (15.0)	15.4 (14.9)	13.5 (14.6)
P-value[a]	-	*P* < 0.001	*P* < 0.001
Proportion of patients whose OCS ADD tapered, increased, or stayed consistent vs pre-EFG, n (%)			
Tapered ≥5 mg/day	-	125 (40)	144 (46)
≥10 mg/day	-	94 (30)	114 (36)
≥20 mg/day	-	70 (22)	85 (27)
To 0 mg/day	-	46 (15)	58 (18)
Unchanged (<±5 mg/day)	-	127 (40)	119 (38)
Increased ≥5 mg/day	-	64 (20)	53 (17)

a. *P*-values for ADD were calculated against the ADD at baseline (pre-EFG) using Wilcoxon signed-rank tests. *P* < 0.05 was considered statistically significant.
ADD, average daily dose; EFG, efgartigimod; OCS, oral corticosteroids; SD, standard deviation.

Figure 3. Changes in distribution of OCS ADD post-EFG initiation (N=316).

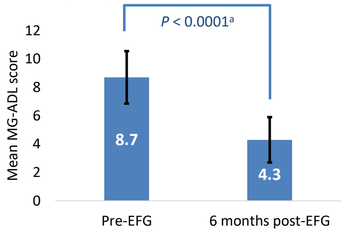


ADD, average daily dose; EFG, efgartigimod; OCS, oral corticosteroids.

OCS tapering in a subset of patients with MG-ADL outcomes data available post-EFG initiation

- Among the 316 patients in the final study cohort, 109 (34.5%) patients had baseline (within 3 months pre-EFG initiation) and at least 1 post-EFG initiation (captured within 6 months post-EFG initiation) MG-ADL score available for outcomes analysis.
- OCS tapering was comparable to the overall study cohort among the 109 patients in the subcohort, and MG-ADL responses were consistent with those expected with EFG treatment (Figure 4 and Table 3).

Figure 4. Mean MG-ADL scores pre- and post-EFG initiation (n=109).



a. *P*-value was calculated using paired t-tests. *P* < 0.05 was considered statistically significant. Error bars reflect standard deviation (3.7 for pre-EFG; 3.2 for post-EFG).
EFG, efgartigimod; MG-ADL, Myasthenia Gravis Activities of Daily Living.

Table 3. Changes in OCS ADD post-EFG initiation (n=109).

	Pre-EFG	Post-EFG initiation	
	0-3 months	3 months	6 months
OCS daily dose, mg/day			
Average (SD)	19.8 (15.7)	14.4 (13.6)	13.1 (15.9)
P-value[a]	-	*P* < 0.001	*P* < 0.001
Proportion of patients whose OCS ADD tapered, increased, or stayed consistent vs pre-EFG, n (%)			
Tapered ≥5 mg/day	-	44 (40)	55 (51)
Unchanged (<±5 mg/day)	-	51 (47)	42 (39)
Increased ≥5 mg/day	-	<20[b]	<20[b]

a. *P*-values for ADD were calculated against the ADD at baseline (pre-EFG) using Wilcoxon signed-rank tests. *P* < 0.05 was considered statistically significant. b. Patient counts <20 have been masked for privacy.
ADD, average daily dose; EFG, efgartigimod; OCS, oral corticosteroids; SD, standard deviation.

Conclusion

- Real-world data based on 316 patients suggested that OCS usage was significantly reduced over 6 months post-EFG initiation, while MG-ADL response was retained.
  - 46% of patients reduced OCS usage (by at least ≥5 mg/day on average) by 6 months post-EFG initiation.
  - 34% of patients with prior steroid usage had OCS ADD of ≤5 mg/day by 6 months post-EFG initiation, and 54% had OCS ADD of ≤10 mg/day.
- Some limitations should be considered including: (1) claims-based data analyses are subject to assumptions, potential coding errors, and risk of missing data; (2) OCS tapering presented is an estimate based on prescriptions only. OCS tapering strategies by prescribed doses were not reflected in this dataset and require alternative datasets to explore.
- Despite these limitations, this study enabled inclusion of a large sample size, with results supporting reduction of OCS use with EFG usage observed in a previously published case series. Future studies should further evaluate OCS tapering patterns following EFG initiation in clinical practice.

Conflict of interest/disclosures: TR received honoraria and/or research support from Alexion, argenx, Biogen, Merck, Novartis, and Roche. NG has served as a paid consultant for argenx, UCB Pharma, and Alexion. CQ, DG, MJ, and GP are employees of argenx. JS has consulted for argenx on glucocorticoid toxicity. TBS, RRM, and MS are employees of ZS Associates and serve as paid consultants for argenx. Part of the content of this poster was presented at the American Academy of Neurology Annual Meeting (13-18 April 2024) in Denver, CO, USA, and at the Canadian Neurological Sciences Federation Congress (20-26 May 2024) in Toronto, Ontario, Canada.

Funding: This study was funded by argenx US, Inc.

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