Real-World Clinical Characteristics of Patients With Migraine Who Initiated Fremanezumab in Sweden: An Observational, Nationwide Register-Based Study

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Mattias Linde,[1] Maurice T. Driessen,[2] Hasan Akcicek,[2] Fredrik Blomstrand,[3] Thomas Fast,[4]* Jennifer S. Haas,[5] Lynda J. Krasenbaum,[6] Karolin Seidel,[5] Maria Vasilevska,[4] Olivia Ernstsson[4]

[1]Department of Neuromedicine and Movement Science, Norwegian University of Science and Technology (NTNU), Trondheim, Norway; [2]Teva Pharmaceuticals B.V., Amsterdam, Netherlands; [3]Teva Pharmaceuticals, Helsingborg, Sweden; [4]Quantify Research, Stockholm, Sweden; [5]Xcenda GmbH, part of Cencora Inc., Hannover, Germany; [6]Teva Branded Pharmaceutical Products R&D, Inc., West Chester, PA, USA. *Former affiliation.

Conclusions

- In this Swedish real-world study, patients with migraine demonstrated high levels of adherence and persistence to fremanezumab
- More than half of the study population had used erenumab before initiating fremanezumab
- Patients with previous exposure to another CGRP pathway mAb were older on average, and may have been more severely impacted by migraine in the 12 months prior to fremanezumab initiation than those without previous exposure to another CGRP pathway mAb

Introduction

- Migraine, a frequently disabling neurological disease, has been reported to affect approximately 13% of the Swedish population, leading to an extensive socio-economic burden in terms of healthcare costs, work absence, and reduced quality of life[1]
- Four monoclonal antibodies (mAbs) targeting the calcitonin gene-related peptide (CGRP) or its receptor are reimbursed in Sweden for chronic migraine treatment after failing two or more prior preventive migraine treatments[2–4]
- Real-world data detailing the demographic and clinical characteristics of patients initiating CGRP pathway mAbs, and specifically more recent treatments such as fremanezumab, are important to guide prescribers and ensure that patients receive appropriate treatment

Objectives

- To examine the demographic and clinical characteristics of all patients in Sweden treated with fremanezumab for chronic migraine prevention

Methods

- This retrospective, non-interventional, observational, register-based study utilized data from Swedish national population registers* between 1 June 2005 and 28 February 2022
- The study included all patients ≥18 years of age who had at least one prescription of fremanezumab during this time period, with the first dispensation of fremanezumab designated as the index date
- Pre-index information on patient demographic and clinical characteristics including age, sex, treatment patterns of other acute and preventive migraine treatments, healthcare resource utilization (HCRU), and mean number of migraine-related sick leave days, was collected
- Post-index outcomes included:
  - Adherence, measured by proportion of days covered (PDC; number of days covered by fremanezumab/number of days in the individual follow-up)
  - Persistence, defined as patients staying on treatment with fremanezumab throughout the follow-up period with a permissible gap of 60 days
- Data are reported for patients with a pre-index period of ≥12 months and a post-index period of ≥6 months

Results

Patient Characteristics

- Of the 2865 identified patients with a dispensed fremanezumab prescription, 2211 had a pre-index period of ≥12 months and a post-index period of ≥6 months
  - Mean (SD) age was 46 (12) years and 84% were female (**Table 1**)
- The most prevalent comorbidities were other headache syndromes as well as menopausal and other perimenopausal disorders (**Table 1**)
- In the 5 years prior to initiating fremanezumab, 58% of the overall population had used ≥2 preventive migraine medications (excluding other CGRP pathway mAbs; **Table 1**)
- Most patients (n =1861 [84.2%]) had ≥1 dispensation of any preventive migraine medication (including other CGRP pathway mAbs) in the 12 months pre-index (**Table 1**)
  - 1114 patients were treated with another CGRP pathway mAb (erenumab [n = 1108 {50.1%}] or galcanezumab [n = 6 {0.27%}])
- A subgroup analysis revealed that patients with previous exposure to another CGRP pathway mAb† had a higher mean [SD] age than those without previous exposure (47.7 [11.9] vs 45.0 [12.1] years) and a larger proportion of migraine diagnoses registered in specialty care (80.8% vs 62.3%)

Healthcare Resource Utilization

- The patient subgroup with previous exposure to another CGRP pathway mAb had higher mean migraine-related HCRU than the subgroup without previous exposure, particularly relating to specialist outpatient care during the 12 months pre-index (**Table 2**)
- The mean (SD) number of migraine-related sick leave days was 0.66 (3.16) among patients previously exposed to another CGRP pathway mAb and 0.25 (1.96) among patients without previous exposure to another CGRP pathway mAb in the 12 months pre-index

Table 1. Baseline Characteristics

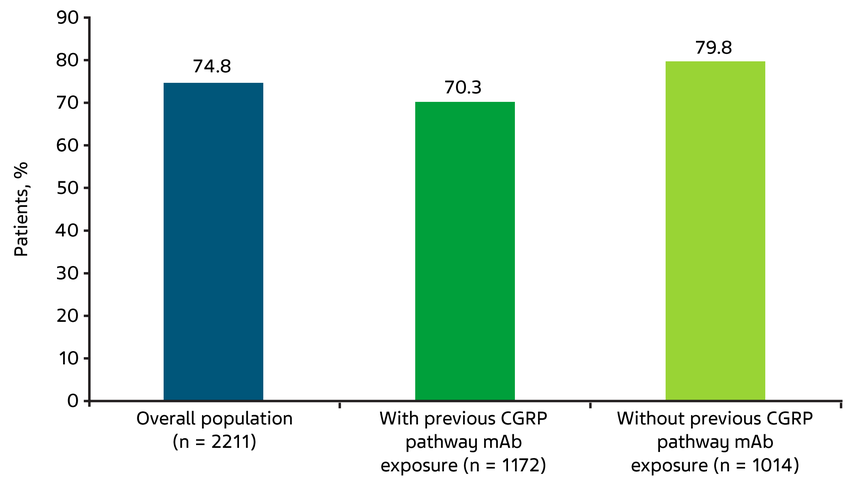
Patient characteristics	Overall population n = 2211
Age at end of index year (years), mean (SD)	46.4 (12.1)
Female, n (%)	1859 (84.1)
Migraine diagnosis registered in specialty care, n (%)[a]	1598 (72.3)
Most prevalent comorbidities, n (%)[b]	
Other headache syndromes	248 (11.2)
Menopausal and other perimenopausal disorders	137 (6.2)
Abdominal and pelvic pain	128 (5.8)
Headache	108 (4.9)
Charlson Comorbidity Index, mean (SD)	0.1 (0.6)
Number of previous preventive migraine treatments, n (%)[c,d]	
0	251 (11.4)
1	654 (29.6)
2	680 (30.8)
3	403 (18.2)
4	156 (7.1)
≥5	42 (1.9)
Incomplete pre-index period	25 (1.1)
Preventive migraine medication, n (%)[e]	1861 (84.2)
Metoprolol	277 (12.5)
Propranolol	159 (7.2)
Amitriptyline	598 (27.1)
Candesartan	310 (14.0)
Flunarizine	8 (0.4)
Topiramate	215 (9.7)
Valproic acid	26 (1.2)
OnabotulinumtoxinA	380 (17.2)
Erenumab	1108 (50.1)
Galcanezumab	6 (0.3)

[a]Within the period between the study start date to the index date; [b]Reported in ≥5% of patients; [c]Excluding CGRP pathway mAbs; [d]Prescribed within a pre-index period of 5 years; [e]≥1 dispensation.
SD, standard deviation.

Adherence and Persistence to Fremanezumab Treatment

- In the overall population, the mean (SD) PDC was 84.3 (23.8) at 6 months post-index; high adherence (≥80% PDC) was demonstrated by 74.8% of patients (**Figure 1**)
- 73.6% of patients in the overall population remained persistent to fremanezumab 6 months after initiation (**Figure 2**)

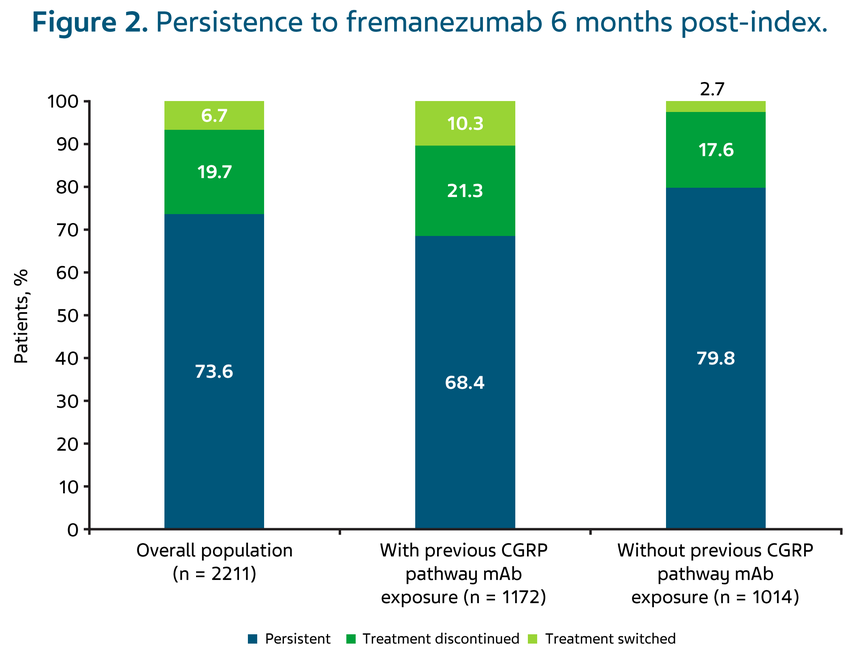
Figure 1. Proportion of patients with high adherence (PDC≥80%) to fremanezumab 6 months post-index.



CGRP, calcitonin gene-related peptide; mAb, monoclonal antibody; PDC, proportion of days covered.

- Rates of persistence were 79.8% for the patient subgroup with no previous exposure to another CGRP pathway mAb and 68.4% for the subgroup with previous exposure to another CGRP pathway mAb (**Figure 2**)
- Patients with previous exposure to another CGRP pathway mAb were more likely to switch from fremanezumab to another CGRP pathway mAb (10.3%) than patients who had not previously been exposed to another CGRP pathway mAb (2.7%; **Figure 2**), with most switching to erenumab (9.1% vs 1.2% to galcanezumab)
  - In contrast, patients in the subgroup not previously exposed to a CGRP pathway mAb switched from fremanezumab to erenumab and galcanezumab in similar numbers (1.2% vs 1.5%, respectively)

Figure 2. Persistence to fremanezumab 6 months post-index.



CGRP, calcitonin gene-related peptide; mAb, monoclonal antibody.

Table 2. All-Cause and Migraine-Related HCRU in the 12 Months Prior to Initiating Fremanezumab

HCRU per-patient per-month	Overall population n = 2211		With previous CGRP pathway mAb exposure n = 1172[a]		Without previous CGRP pathway mAb exposure n = 1014[a]	
	n (%)[b]	Mean (SD)	n (%)[b]	Mean (SD)	n (%)[b]	Mean (SD)
All-cause HCRU						
Inpatient care						
Number of admissions	193 (8.7)	0.01 (0.05)	101 (8.6)	0.01 (0.05)	91 (8.97)	0.01 (0.05)
Number of admission days	172 (7.8)	0.05 (0.47)	93 (7.9)	0.06 (0.59)	78 (7.69)	0.03 (0.27)
Number of procedures	159 (7.2)	0.02 (0.17)	81 (6.9)	0.03 (0.22)	77 (7.59)	0.02 (0.11)
Specialty outpatient care						
Number of specialty visits	1822 (82.4)	0.52 (0.61)	1004 (85.7)	0.61 (0.67)	795 (78.4)	0.42 (0.52)
Number of procedures	1444 (65.3)	0.39 (0.67)	813 (69.4)	0.45 (0.74)	616 (60.8)	0.33 (0.57)
Migraine-specific HCRU						
Inpatient care						
Number of admissions	18 (0.8)	0.00 (0.01)	13 (1.1)	0.00 (0.01)	5 (0.5)	0.00 (0.01)
Number of admission days	15 (0.7)	0.00 (0.06)	12 (1.0)	0.00 (0.08)	<5	0.00 (0.01)
Number of procedures	8 (0.4)	0.00 (0.01)	6 (0.5)	0.00 (0.02)	<5	0.00 (0.00)
Specialty outpatient care						
Number of specialty visits	1242 (56.2)	0.24 (0.37)	782 (66.7)	0.31 (0.42)	444 (43.8)	0.16 (0.27)
Number of procedures	798 (36.1)	0.12 (0.23)	510 (43.5)	0.15 (0.27)	279 (27.5)	0.08 (0.16)

[a]Patients with an incomplete pre-index period were excluded (n = 25); [b]Number and percentage of patients with at least one observation.
CGRP, calcitonin gene-related peptide; HCRU, healthcare resource utilization; mAb, monoclonal antibody.

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Disclosures:
M.T. Driessen, H. Akcicek, F. Blomstrand, and L.J. Krasenbaum are employees of Teva Pharmaceuticals. M. Linde and O. Ernstsson are employees of Quantify Research, providing consultancy services to pharmaceutical companies and other private and public organizations and institutions. T. Fast was an employee of Quantify Research at the time of study, which has received fees from Teva Pharmaceuticals in relation to this work. J.S. Haas and K. Seidel are employees of Xcenda GmbH, part of Cencora Inc., which has received fees from Teva Pharmaceuticals in relation to this work.

Footnote:
*The Swedish National Patient Register, the Swedish Prescribed Drug Registry and the National Population Register, Cause of Death Register, Micro Data for Analysis of Social Insurance and the Swedish Headache Register; †Any exposure to a CGRP pathway mAb within a pre-index period of 5 years.

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