

Evaluating the effect of rimegepant or oral triptans on patient-reported outcomes among adults with migraine in the United States

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BACKGROUND

- Although triptans are commonly prescribed for acute migraines in the United States (US), some patients do not respond to triptans, have an inadequate or inconsistent response to triptans, or have contraindications to triptans¹
- There is a need for effective treatment options other than triptans to manage acute migraine in these subgroups²
- Rimegepant, a calcitonin gene-related peptide receptor antagonist, was approved by the US Food and Drug Administration in 2020 for the acute treatment of migraine and in 2021 for the prevention of episodic migraine³
- There is currently limited evidence about patient satisfaction with treatment and health-related outcomes when comparing rimegepant and triptans for acute migraine

OBJECTIVES

This study assessed patient-reported outcomes for individuals diagnosed with migraine who reported using either rimegepant or triptans to manage acute migraine

METHODS

- Study Design**
- This cross-sectional study used patient self-reported data from the 2023 US National Health and Wellness Survey (NHWS)
 - Participants were recruited via a quota sampling approach to mirror the general adult population from the US Census in terms of age, sex, and race/ethnicity

- Inclusion/Exclusion Criteria**
- Adults (aged ≥18 years) who reported a physician diagnosis of migraine were included
 - Two study subgroups were formed:
 - Rimegepant group:** Individuals who reported using rimegepant <12 days per month
 - Triptan group:** Individuals who reported using prescription oral triptans
 - Patients who used both rimegepant and triptans, as well as those missing data on marital status, body mass index (BMI), or time since migraine diagnosis, were excluded from the analysis
 - Figure 1** illustrates the sample selection flowchart based on these inclusion and exclusion criteria using raw patient counts from the 2023 US NHWS

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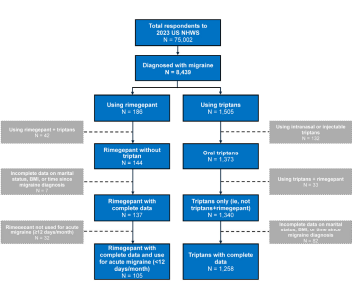
CONFLICTS OF INTEREST

SD, FD, JC, KHD, and AT are employees and stockholders of Pfizer; NC is employee of Oracle Life Sciences, which received funding from Pfizer to conduct the study.

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- The study was funded by Pfizer Inc.

Figure 1: Flowchart of sample selection



Note: BMI: body mass index; NHWS: National Health and Wellness Survey; UIC: over the counter; US: United States

METHODS, continued

Data Collection

- The variables collected in the 2023 US NHWS that were of interest to this study are presented in **Table 1**

Variables	Details or categories
Age	Included as both categorical (18-29, 30-39, 40-49, 50-59, 60-69, 70-79, 80-89) and continuous
Gender	Female, male
Race	Black, white, other
Hispanic/Latino	Yes, no
Marital status	Single/not living with partner, married/living with partner
Health insurance	Private insurance, public insurance, no insurance, unsure
University education or higher	Yes, no
Annual household income	Below median income, median income, above median income, decline to answer
Employed	Yes, no
Charlson comorbidity index ⁴	Included as both categorical (0, 1, 2, 3, ≥4) and continuous
Body mass index	Continuous
Drink alcohol	Yes, no
Smoking behavior	Never smoked, former smoker, current smoker
Exercise (days per month)	Continuous
Individual contraindications ever experienced	Angina, arrhythmia, atrial fibrillation, congestive heart failure, heart attack, left ventricular hypertrophy, mini stroke/transient ischemia attack, peripheral arterial disease/poor circulation, peripheral vascular disease, stroke, unstable angina/chest pains
Individual cardiovascular risk factors ever experience	High blood pressure, high cholesterol, current smoker, type 2 diabetes, obesity
Any contraindication	Yes, no
Any cardiovascular risk factor	Yes, no
Any contraindication or cardiovascular risk factor	Yes, no
Time since migraine diagnosis (years)	Continuous
Migraine days in the past 30 days	Included as both categorical (<4, 4-9, 10-14, ≥15) and continuous
Headache days in the past 30 days (patients with >0 migraine days only)	Included as both categorical (<4, 4-9, 10-14, ≥15) and continuous
Medication overuse	Yes, no
Experience migraines related to menstrual cycle (female patients only)	Yes, no

METHODS, continued

- Patient-reported outcomes included:
 - Treatment satisfaction**, as measured by a 7-point Likert scale. Responses for "extremely satisfied" and "very satisfied" were combined and are presented as "Satisfied," responses for "somewhat satisfied," "neither dissatisfied nor satisfied," and "somewhat dissatisfied" were combined and are presented as "Neutral," while responses for "very dissatisfied" and "extremely dissatisfied" were combined and are presented as "Dissatisfied"
 - Healthcare resource use (HCRU)**, as measured by the average number of visits to diverse types of healthcare providers (HCPs) among those with ≥1 such visit in the past six months
 - Health-related quality of life (HRQoL)**, as measured by the RAND 36 and EQ-5D-5L^{4,5}
 - Work productivity and activity impairment (WPAAI)**⁶
 - Migraine Disability Assessment Scale scores (MIDAS)**⁷

Data Analysis

- NHWS survey weighting was applied before comparing demographic and health-related characteristics in the rimegepant and triptan groups
- Inverse probability of treatment weighting (IPTW) was then applied to balance the two study groups:
 - Propensity scores (PS) were estimated using logistic regression with variables in **Table 1**
 - Stabilized IPTW weights were calculated for average treatment effect among the treated (ATT) in the rimegepant group
 - NHWS sampling weights were combined with IPTW to compute the final weights
 - Standardized mean differences (SMDs) were used to assess any remaining differences in means between groups after IPTW
- Demographics and health-related characteristics for each group were summarized using counts and percentages or means and standard deviations (SDs) both pre- and post-IPTW
- Comparisons between study groups based on the weighted methodology described above were conducted using two-sample t-tests (continuous data) and chi-square tests (proportions); Fisher's exact test was used when observed cell counts were <5

RESULTS

Distribution of demographics and health-related characteristics

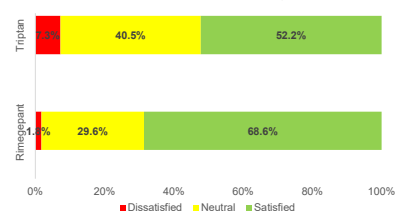
- A total of 1,363 participants met the inclusion criteria (rimegepant group: n=105, triptan group: n=1,258)
- Before IPTW, individuals in the rimegepant group were younger (43.0 vs. 49.2 years), more likely to be female (93.3% vs. 80.8%), had higher rates of private insurance (70.5% vs. 59.3%), were less likely to smoke (6.7% vs. 14.9%) or drink alcohol (6.1% vs. 69.5%), had a lower prevalence of cardiovascular risk factors (49.5% vs. 70.0%), fewer years since their migraine diagnosis (14.5 vs. 19.8), experienced more headache days in the past 30 days (9.5 vs. 7.7), and had a lower risk of medication overuse headache (17.1% vs. 31.2%) than those in the triptan group (**Table 2**)

Table 2: Demographics and health-related characteristics prior to IPTW	Rimegepant N=105	Triptans N=1,258	SMD
Age (mean, SD, years)	43.0	49.2	0.431
Female (% N)	93.3	80.8	0.381
Race (% N)			0.052
Black	7.6	9.1	0.114
White	85.7	84.4	0.052
Other	6.7	6.5	0.052
Hispanic/Latino (% N)	13.3	14	0.114
Health insurance (% N)			0.244
Private insurance	70.5	59.3	0.244
Public insurance	28.7	38.5	0.244
No insurance	1.9	2	0.003
Unsure	1.0	1	0.003
University education or higher (% N)	49.5	52	0.003
Annual household income (% N)			0.003
Below median income	32.4	34	0.003
Median income	15.2	16	0.003
Above median income	48.6	51	0.003
Decline to answer	3.8	4	0.003
Employed (% N)	61.0	64	0.006
Charlson comorbidity index ⁴ (% N)			0.218
0	59.0	62	0.006
1	22.9	24	0.006
≥2	18.2	19	0.006
Mean BMI (kg/m ²) (mean, SD)	28.6	28.5	0.013
Drink alcohol (% N)	61.9	69.5	0.160
Smoking behavior (% N)			0.287
Never smoked	72.4	76	0.287
Former smoker	21.0	22	0.287
Current smoker	6.7	14.9	0.287
Any contraindication (% N)	19.0	20	0.087
Any cardiovascular risk factor (% N)	49.5	70.0	0.426
Time since migraine diagnosis (mean, SD, years)	14.5	19.8	0.369
Migraine days in the past 30 days (mean, SD, days)	5.0	6.0	0.132
Headache days in the past 30 days (patients with >0 migraine days only) (mean, SD)	9.5	7.7	0.235
Medication overuse (% N)	17.1	31.2	0.334
Experience migraines related to menstrual cycle (female patients only) (% N)	33.7	33	0.013

Note: BMI: Body mass index; SD: standard deviation; SMD: Standardized mean differences

- After IPTW, all SMDs between the rimegepant and triptan groups were below 0.1, indicating that demographic and health-related characteristics were balanced between the two groups (e.g., post IPTW, mean age was 43.0±13.6 years for rimegepant group vs. 42.9±13.5 years for triptan group)
- Post-IPTW comparisons of the outcomes**
- Once this balance was achieved with IPTW, individuals in the rimegepant group were found to have higher treatment satisfaction than those in the triptan group (68.6% vs. 52.0% satisfied, p=0.010) (**Figure 2**)

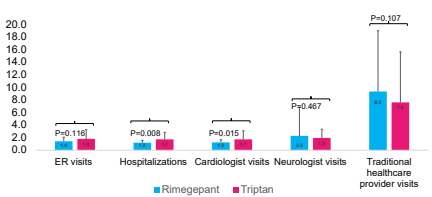
Figure 2: Satisfaction with Rimegepant among Rimegepant users vs. Satisfaction with triptans among triptan users



RESULTS, continued

- When examining satisfaction with other migraine medications (i.e., not rimegepant or triptans), no statistically significant (SS) differences were found between the rimegepant and triptan groups
- No SS differences were found between the rimegepant group and triptan group in HRQoL, WPAAI, or MIDAS
- A higher proportion of individuals in the rimegepant group had a visit to a neurologist in the past 6 months than in the triptan group (57.3% vs. 28.4%, p<0.001)
- Individuals in the rimegepant group had fewer hospitalizations (1.2±0.4 vs. 1.7±1.5, p=0.008) and visits to a cardiologist (1.2±0.4 vs. 1.7±1.4, p=0.015) in the past 6 months than in the triptan group; no SS differences were found between groups in the number of visits to the emergency room (ER) or traditional HCPs in the past 6 months (**Figure 3**)

Figure 3: Number of visits per care setting among those who had ≥1 visit in the past 6 months for Rimegepant or Triptan groups



Limitations

- This study relied on self-reported data from a patient survey, which may introduce recall bias
- As a cross-sectional survey, this study is limited to reporting associations, and no causal relationships between treatments and patient-reported outcomes can be inferred
- Comparisons between groups may have been underpowered for certain patient-reported outcomes (e.g., work productivity loss among employed participants) due to the small number of individuals in the rimegepant group

Strengths

- IPTW for ATT was used to balance demographic and health-related characteristics between the rimegepant and triptan groups
- NHWS sampling weights were used to provide robust national estimates of population-level effects on patient-reported outcomes.

Conclusions

These results suggest that individuals in the US who are diagnosed with migraine by a physician and used rimegepant had a significantly higher rate of treatment satisfaction and fewer hospitalizations and ER visits than those who used triptans