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Real-world healthcare costs and resource utilization (HRU) among patients treated with erenumab in the United States: A retrospective claims database study

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Objective: To evaluate costs and HRU among migraine patients treated with erenumab in the US.

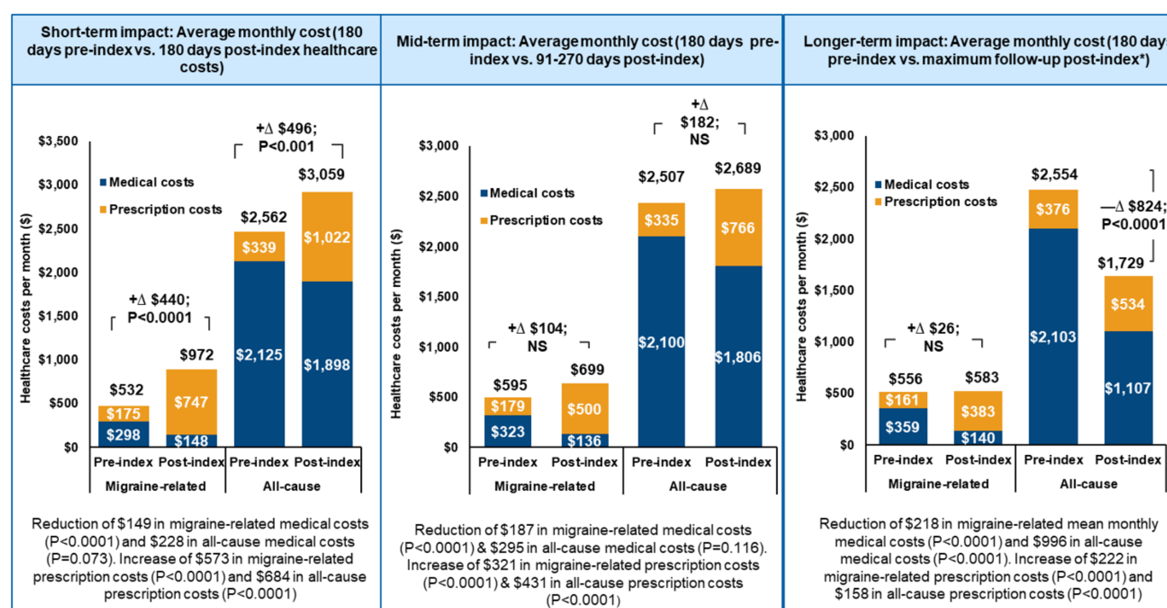
Methods: Adults with ≥3 consecutive monthly claims for erenumab (11/01/2017–09/01/2019) were identified from the Komodo Health database (index date=first erenumab claim). Mean monthly migraine-related and all-cause healthcare costs ($2019) during 180 days pre-index were compared over varied follow-up periods to assess the short- (180 days post-index), mid- (91-270 days post-index), and longer-term (maximum available follow-up time) impact of the treatment. HRU was compared over 180 days pre- vs. 180 days post-index periods. Outcomes were adjusted for patient characteristics.

Results: Overall, 1,839 patients were included (mean age 47 years; 86% females). Following erenumab initiation, a reduction in mean monthly migraine-related (P<0.0001) and all-cause medical costs (P=0.07) during the 180-day post-index period was observed, which was associated with significant increase in migraine-related (P<0.0001) and all-cause prescription costs (P<0.0001). However, with increase in follow-up time, up to 98% of the increased migraine-related and >100% of the all-cause prescription costs were offset by the reduced medical costs (Fig. 1). A significant reduction in HRU during the 180-day post-index period was observed (Table 1).

Conclusion: Erenumab treatment has an entrance cost that gets mitigated by reduced medical cost over a long-term follow-up suggesting an improved disease management.

Figure 1

Fig. 1: Impact of erenumab on migraine-related and all-cause costs during the short-term (180 days post-index), mid-term (91-270 days post-index), and longer-term (maximum available follow-up period) follow-up



Abbreviations: NS: Non-significant; Δ indicates change in costs following erenumab treatment. *Mean maximum follow-up period: 8.9 months
The individual sum of medical and prescription costs slightly vary from the total costs reported (values above each column). This is because the results are based on separate regression analyses for each cost-type (total, medical, and prescription costs), where the impact of the same group of covariates may differ

(MLR ID: 150385)

Figure 2

Table 1: HRU* among patients treated with erenumab (180 day pre-index vs. 180 day post-index period)

	Migraine-related HRU (N=1,839)			All-cause HRU (N=1,839)		
	Pre-index, mean (SE)	Post-index, mean (SE)	Odds ratio pre-index vs. post-index (95% CI)	Pre-index, mean (SE)	Post-index, mean (SE)	Odds ratio pre-index vs. post-index (95% CI)
Hospitalizations	-	-	-	0.10 (45.07)	0.07 (33.65)	0.76 (0.57-1.02)
Emergency room visits	0.06 (38.18)	0.04 (23.77)	0.60 (0.44-0.82)	0.34 (0.02)	0.27 (0.03)	0.77 (0.66-0.89)
Outpatient visits**	0.22 (0.02)	0.14 (0.01)	0.64 (0.55-0.75)	1.43 (0.06)	1.32 (0.05)	0.93 (0.83-1.05)
Office visits	1.48 (0.06)	1.05 (0.06)	0.58 (0.53-0.64)	8.26 (0.21)	7.37 (0.18)	0.94 (0.80-1.11)
Neurologist visits	0.68 (0.03)	0.50 (0.02)	0.69 (0.63-0.75)	0.99 (0.04)	0.71 (0.03)	0.67 (0.62-0.73)

Abbreviations: CI: Confidence interval; HRU: Healthcare resource use; SE: Standard error

Cells highlighted in green represent statistically significant ($P<0.05$) reduction during the 180-day post-index period. Migraine-related hospitalizations are not presented due to small observation counts resulting in non-valid statistical testing

*HRU data are reported as mean visits and odds ratios for 180 day pre-index vs. 180 day post-index period. Mean (SE) data represent average number of visits per patient during the 180 day period, while odds ratio <1 represents reduction in odds of having hospitalization or other HRU visits during 180 day post-index period (post initiation of erenumab)

**Outpatient visits include the following places-of-service: Walk-in retail health clinic, off campus-outpatient hospital, urgent care facility, on campus-outpatient hospital, independent clinic, public health clinic, and rural health clinic

Conflict of interest

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(MLR ID: 150385)