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Effectiveness of Erenumab and OnabotulinumtoxinA on Acute Medication Usage and Healthcare Resource Utilization as Migraine Prevention in the United States

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The final responsibility for the content lies with the authors.

Results

- This was a retrospective non-interventional analysis
  - ⇒ Adult migraine patients from the US initiating erenumab or onabotA between 1 May, 2018 and 30 September, 2019 identified from Optum's de-identified Clinformatics® Data Mart Database
- Data for 3,171 erenumab and 3,100 onabotA patients assessed before matching
  - ⇒ 1,338 matched patients from each cohort identified post stratified propensity score (PS) matching

Figure 1: Study design

- Demographics and baseline clinical characteristics for the pre-matched erenumab and onabotA cohorts were assessed
- Clinical characteristics to be evaluated were acute medication use (6-month pre-index only) and healthcare resource utilization

- 6-month post-index measures included acute medication usage and healthcare resource utilization following treatment with erenumab or onabotA

Table 1. Demographics and 12-month pre-index clinical characteristics of study patients

n (%)		Pre-matched			Post-matched		
		Erenumab (n=3,171)	OnabotA (N=3,100)	SMD	Erenumab (n=1,338)	OnabotA (N=1,338)	SMD
Age at index, mean (SD)		50.7 (13.6)	49.8 (14.7)	0.07	50.0 (14.2)	50.2 (14.3)	0.01
Female		2,689 (84.8)	2,679 (86.4)	0.05	1,226 (91.6)	1,226 (91.6)	0.00
CM w/o aura		1,982 (62.5)	2,202 (71.0)	0.18	868 (64.9)	868 (64.9)	0.00
Insurance type							
Point-of-service		1,569 (49.5)	1,617 (52.2)	0.05	666 (49.8)	715 (53.4)	0.07
Other		741 (23.4)	576 (18.6)	0.12	291 (21.7)	280 (20.9)	0.02
Health maintenance organization		518 (16.3)	490 (15.8)	0.01	217 (16.2)	208 (15.6)	0.02
Exclusive provider organization		214 (6.7)	290 (9.4)	0.10	109 (8.2)	86 (6.4)	0.07
Preferred provider organization		129 (4.1)	127 (4.1)	0.00	55 (4.1)	49 (3.7)	0.02
Number of preventive drug class used							
0		902 (28.5)	1321 (42.6)	0.30	555 (41.5)	555 (41.5)	0.00
1		1,005 (31.7)	881 (28.4)	0.07	448 (33.5)	448 (33.5)	0.00
2		697 (22.0)	565 (18.2)	0.09	228 (17.0)	228 (17.0)	0.00
3+		567 (17.9)	333 (10.7)	0.20	107 (8.0)	107 (8.0)	0.00
Acute medication used, 6-month pre-index							
Any acute medication use		2,247 70.9)	1,776 (57.3)	0.14	741 (55.4)	742 (55.5)	0.00
Triptans		1,774 (55.9)	1,395 (45.0)	0.07	578 (43.2)	578 (43.2)	0.00
Opioids		625 (19.7)	449 (14.5)	0.14	180 (13.5)	171 (12.8)	0.02
NSAIDs		236 (7.4)	217 (7.0)	0.02	59 (4.4)	64 (4.8)	0.02
Barbiturates		211 (6.7)	220 (7.1)	0.02	66 (4.9)	71 (5.3)	0.02
Ergots		92 (2.9)	38 (1.2)	0.07	19 (1.4)	12 (0.9)	0.05
Proportion of patients who used healthcare resources							
Office visits	All-cause	3,062 (96.6)	2,919 (94.2)	0.11	1,285 (96.0)	1,275 (95.3)	0.04
	Migraine-specific	2,873 (90.6)	2,588 (83.5)	0.21	1,180 (88.2)	1,156 (86.4)	0.05
Other outpatient visits	All-cause	2,913 (91.9)	2,839 (91.6)	0.01	1,228 (91.8)	1,221 (91.3)	0.02
	Migraine-specific	1141 (36.0)	1118 (36.1)	0.00	422 (31.5)	430 (32.1)	0.01
Neurologist/headache specialist visits	All-cause	2,545 (80.3)	2,441 (78.7)	0.04	1,070 (80.0)	1,039 (77.7)	0.06
	Migraine-specific	2,357 (74.3)	2,170 (70.0)	0.10	974 (72.8)	937 (70.0)	0.06
ER/inpatient visits	All-cause	971 (30.6)	916 (29.6)	0.02	349 (26.1)	410 (30.6)	0.10
	Migraine-specific	196 (6.2)	106 (3.4)	0.13	43 (3.21)	41 (3.06)	0.01

CM, chronic migraine; ER, emergency room; onabotA, onabotulinumtoxinA; PS, propensity score; SD, standard deviation; SMD, standardized mean difference; w/o, without.

Results

- 6-month post-index period, post-matching:

⇒ Significantly lower use of acute medications (any acute medication, NSAIDs and opioids) for erenumab users vs onabotA users

⇒ Significantly lower HCRUs for erenumab users compared with onabotA users for most endpoints

Figure 2: Adjusted mean number of claims*

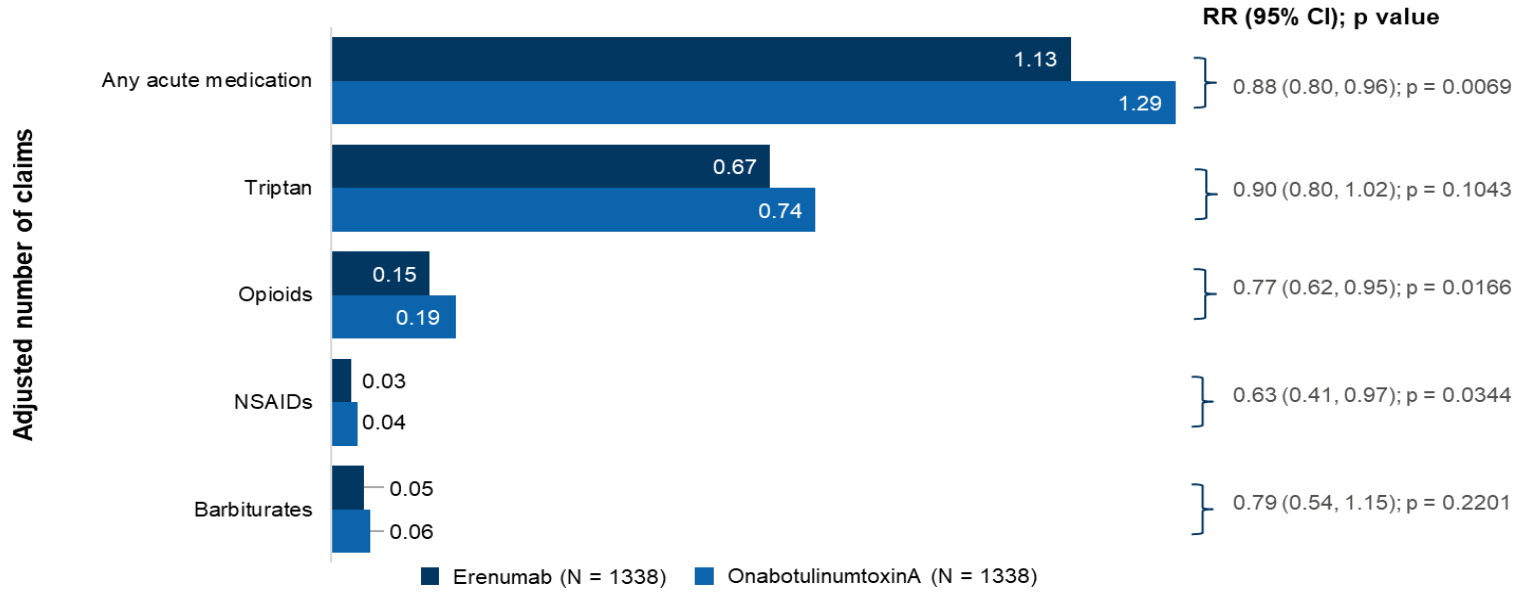
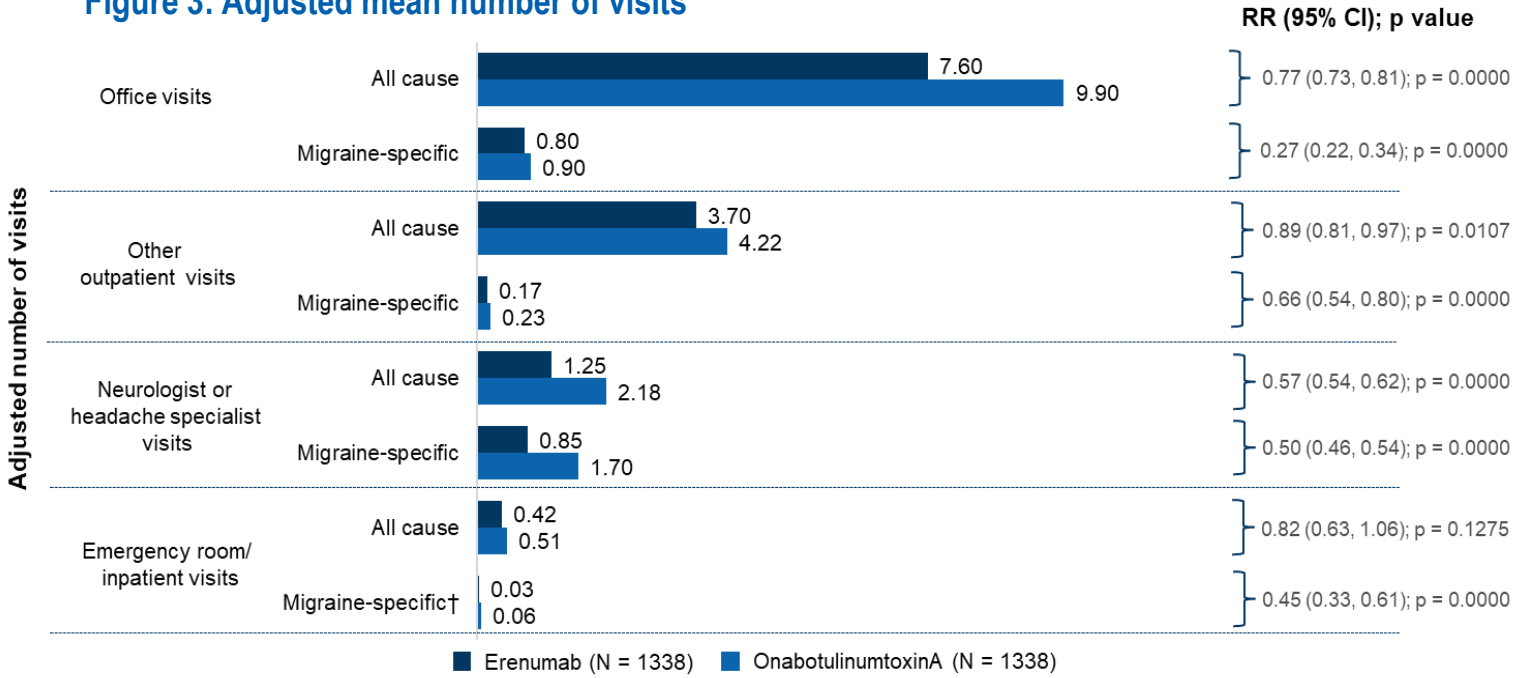


Figure 3: Adjusted mean number of visits



†Matched model did not converge (results from inverse probability of treatment weighting model are shown)

*Use of non-migraine specific acute medications (NSAIDs, opioids, and barbiturates) required a migraine diagnosis on or before 7 days of the medication claim to proxy migraine-specific acute medication

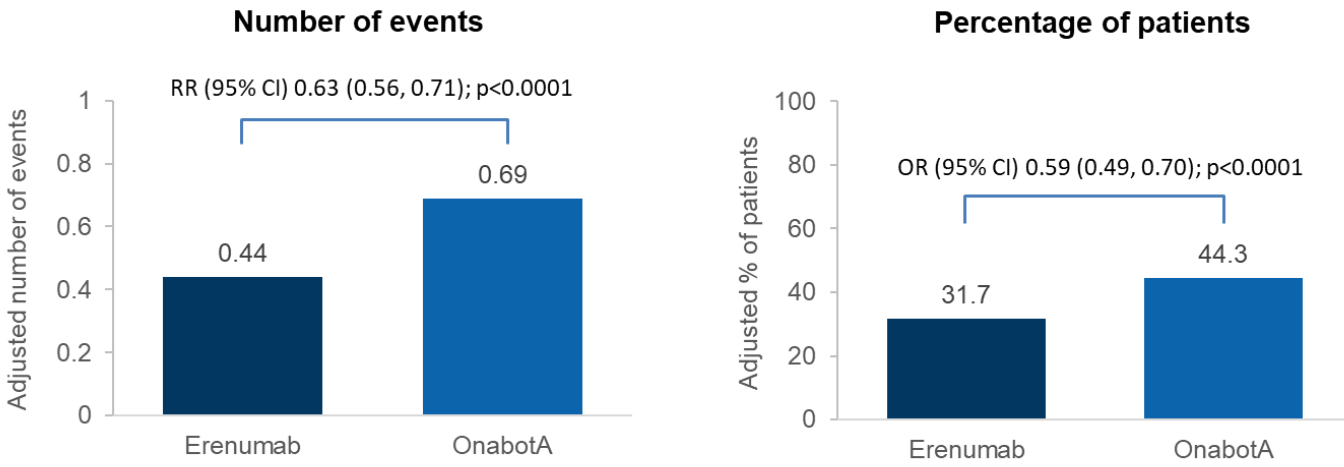
CI, confidence interval; HCRU, healthcare resource utilization;

NSAID, nonsteroidal anti-inflammatory drug; onabotA, onabotulinumtoxinA; RR, rate ratio.

Results and Conclusions

- Composite endpoint: outpatient visit with a diagnosis of migraine and associated acute medication claim, hospital admission or ER visit with a primary diagnosis for migraine was evaluated
  - ⇒ Significantly lower mean number of events observed for the erenumab cohort than for the onabotA cohort (37% reduction)
  - ⇒ Significantly lower proportion of patients with any of the three events observed for erenumab vs onabotA (41% reduction)

Figure 4: Composite endpoint event



Conclusions

- Erenumab as a migraine prevention significantly reduces acute medication use (NSAIDs and opioids, and any acute medication) and HCRU among migraine patients in a real-world setting, hence significantly reducing the burden of the disease
- The magnitude of reductions was higher in erenumab than onabotA-treated patients, showing that erenumab may be more effective as a migraine-preventative treatment in this population and time period
- There was no difference in the use of triptans between cohorts

CI, confidence interval; ER, emergency room; HCRU, healthcare resource utilization; NSAID, nonsteroidal anti-inflammatory drug; onabotA, onabotulinumtoxinA; OR, odds ratio; RR, rate ratio.