

Comparing traditional treatment vs Calcitonin gene-related peptide (CGRP) treatment on Mean Migraine Days (MMD)

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Objective	Result	
- The study aims to compare impact of traditional (anticonvulsant and beta blocker) and CGRP treatment on mean migraine days (MMD) in migraine patients. - The study also provides demographic distribution (age and gender) of migraine in the US.		
Method	Fig 1: Age distribution of migraine patients Fig 2: Gender distribution of migraine patients Fig 3: Patients on preventive therapy Fig 4: % of patients w/ migraine frequency compared to before starting respective treatment	- Out of 516,485 patients identified for migraine, 227,417 were taking preventive medications for migraine. - Patients aged 31-50 years are more likely to experience migraine in comparison to other age groups. (p value <0.0001) (Fig 1). - Females were found to be more affected by migraine than males (p value<0.0001) (Fig 2). - Maximum percentage of patients were on anticonvulsants (42.4%), followed by beta-blockers (36.83%) and then CGRP (20.77%). A statistically significant difference was observed for the utilization (p value <0.0001 (Fig 3). - Patients on CGRP treatment reported a significant reduction in number of headache days per month (>50%) as compared to anticonvulsant and beta-blocker treatment (p value <0.0001) (Fig 4). - Among patients treated with anticonvulsant medication, 24% experienced a rise in migraine frequency compared to their baseline. - Among patients who received anticonvulsants and beta- blockers, 27% reported no change in migraine frequency compared to their baseline. 79% of patients who received CGRP treatment experienced an average of <=1 migraine episode per month. Furthermore, 5% of patients reported no change in migraine frequency compared to their baseline, and none of the patients reported an increase in migraine frequency from baseline.
- Optum's de-identified Market Clarity database which links EHR data with claims data, was used to identify migraine patients aged ≥ 18 years, using ICD 10 code (G43*). - Patients with at least 2 claims or/and EHR with migraine diagnosis at least 30 days apart were considered for analysis. - Index period for analysis is from 1st Apr 2019 to 31st Mar 2022. - Index date was confirmed diagnosis of migraine. Continuous eligibility was considered for 6 months pre- and 12 months post index date. - Patients with migraine or associated epilepsy syndrome in the baseline were excluded from the study. - Patients were grouped into three groups: - Cohort 1: Patients on anticonvulsants - Cohort 2: Patients on beta blockers - Cohort 3: Patients on CGRP - Patients identified through market clarity data were mapped to unstructured (physician notes) data. We utilized NLP to extract MMD from clinical notes. Initially, we examined a small sample (5%) of notes that contained mentions of mean migraine days, including their natural variations used by the physicians. Subsequently, we manually identified the pattern associated with MMD and their respective frequencies in a subset of these clinical notes. Finally, we employed NLP on the remaining set of notes to identify MMD for these patients. - Mean migraine days were defined as the average number of days per month, during which a patient experienced a migraine headache. - The study extracted MMD frequencies from unstructured physician notes at 6 months after initiating respective treatment. These frequencies were used to classify the patients' change in MMD from baseline to current status of headache episodes - Patients were categorized into average frequencies of <=1/month, 2/month, or >2/month, while also capturing cases with no change or an increase in frequency compared to the baseline. - Pearson's Chi-square Test was performed to measure if the difference between demographics, utilization of preventive medication group, and MMD were significantly different or not.		
Conclusion	- Migraine has a significant impact on the personal, social, and professional lives of affected patients. - MMDs are established markers to assess quality of life. - Anticonvulsants and beta-blockers are the traditional treatment for migraine prophylaxis, however, their impact on MMD has not been significant as per our analysis. - CGRP are new line of therapy that demonstrates lesser MMD compared to traditional therapies and improves the quality of life for migraine patients.	

