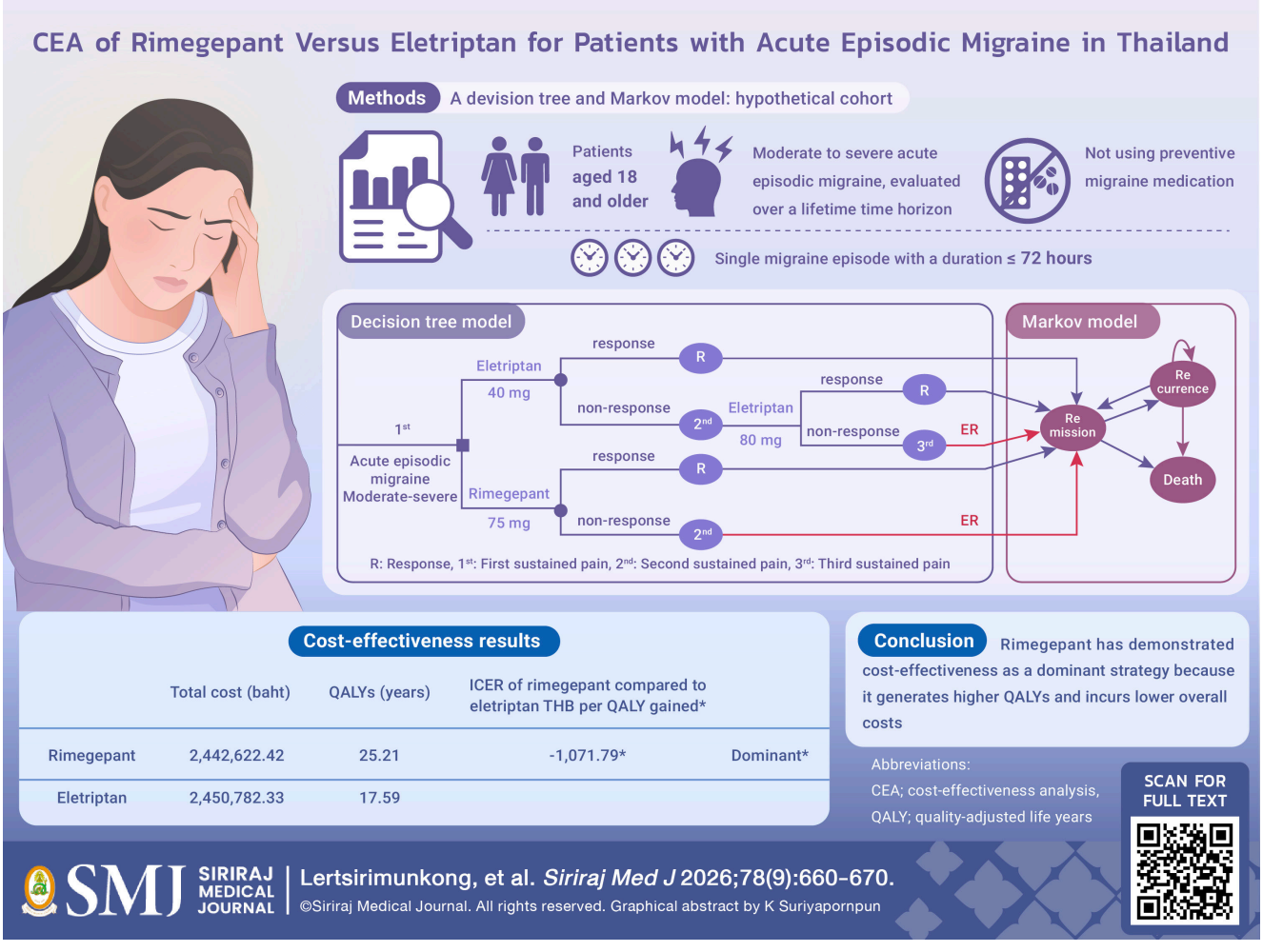
Cost-Effectiveness Analysis of Rimegepant Versus Eletriptan for Patients with Acute Episodic Migraine in Thailand: Establishing Dominance from a Societal Perspective

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ABSTRACT

Objective: For acute migraine patients unresponsive to sumatriptan, the choice is between another triptan, eletriptan, and the novel CGRP antagonist, rimegepant. As of now, no cost-effectiveness analysis comparing rimegepant and eletriptan has been conducted in Thailand. This study aims to evaluate the cost-effectiveness of rimegepant and eletriptan for the treatment of acute episodic migraine in Thailand using data from the Thai healthcare system.

Materials and Methods: This study was a health economic evaluation using a lifetime decision tree–Markov model with 30-day cycles, from a societal perspective. Total costs and quality-adjusted life years (QALYs) were projected using effectiveness data from a systematic review, cost data from Thai healthcare databases, and utility values from published literature. The incremental cost-effectiveness ratio (ICER) was evaluated, and uncertainty was assessed through sensitivity analyses.

Results: The results revealed that, using a 3% discount rate and 2025 costs, the total cost of treatment with rimegepant for acute episodic migraine in Thailand was 2,442,622.42 THB, yielding 25.21 QALYs. In comparison, treatment with eletriptan incurred a total cost of 2,450,782.33 THB and yielded 17.59 QALYs. The ICER of rimegepant compared with eletriptan was −1,071.79 THB per QALY gained. Therefore, rimegepant was considered a dominant strategy, as it generated more QALYs while incurring lower overall costs than eletriptan.

Conclusion: Rimegepant has demonstrated cost-effectiveness in treating acute episodic migraine in Thailand, as it is a dominant strategy, generating higher QALYs while incurring lower overall costs. This economic evidence would help policymakers make informed decisions.

Keywords: Migraine; cost-effectiveness; ICER; rimegepant; CGRP; eletriptan (Siriraj Med J 2026;78(9):660-670)

INTRODUCTION

According to the Global Burden of Disease (GBD) 2019 report, the age-standardized incidence rate (ASIR) of migraine across countries ranges from 962 to 1,336 cases per 100,000 population. In Thailand, the ASIR is the highest among Non-High-Income Southeast Asian countries.[1,2] The highest prevalence is observed in individuals aged 30–39 years, and it is significantly more common in females than in males, with prevalence rates of 18% in women, 6% in men, and 4% in children. Moreover, approximately 85% of patients experience moderate to severe pain. The World Health Organization (WHO) therefore recognizes migraine as a major cause of functional disability. If migraine is untreated or inadequately managed, attacks may last from 4 to 72 hours, severely affecting patients' quality of life. In Thailand, the economic burden of migraine has been estimated to amount to several tens of billions of Thai baht annually.

Current acute migraine management guidelines in Thailand (2022) and in other countries[3,4] recommend triptans as first-line therapy for patients with moderate to severe attacks. In Thailand, the triptans commonly prescribed are sumatriptan and eletriptan.[5] However, the effectiveness of sumatriptan has important limitations, with reports indicating that approximately 30–45% of patients[6,7] do not respond to treatment even at the maximum recommended dose. Evidence from a systematic review and network meta-analysis by Karlsson et al. (2024)[8] demonstrates that eletriptan provides several advantages over sumatriptan, including higher therapeutic gain, greater consistency of response[6,8,9], improved sustained response, and higher rates of pain freedom at 2 hours. These findings make eletriptan an attractive option for patients who do not respond to sumatriptan. Nevertheless, all triptans share a key limitation related to their mechanism of action–agonism at the 5-HT1B receptor–which induces vasoconstriction.[8] This effect may increase the risk of cardiovascular or cerebrovascular events and has been associated with chest tightness in 42–78% of patients[8], potentially leading to myocardial ischemia, myocardial infarction, or stroke.[10] Furthermore, the use of triptans on more than 10 days per month for over 3 consecutive months has been associated with medication-overuse headache (MOH).[11]

Recently, newer medications specifically targeting the calcitonin gene–related peptide receptor (CGRP receptor antagonists), known as gepants, have been developed for the acute treatment of migraine. Although several gepants exist, only two–rimegepant and ubrogepant–are currently available in Thailand.[4] Rimegepant is formulated as an oral disintegrating tablet (ODT)[4,5], which helps reduce issues related to nausea or vomiting during attacks. Clinical studies have shown that rimegepant reduces the recurrence of migraine attacks more effectively than other gepants and offers significantly higher rates of sustained 24-hour pain freedom versus placebo. Compared with

eletriptan, rimegepant can reduce the risk of headache recurrence by approximately 71%[8] and demonstrates lower rates of adverse events, such as nausea and vomiting (less than 3%).[12] Importantly, no evidence of hepatotoxicity in long-term use of rimegepant[13], and it has not been associated with MOH, even with repeated use.[12,14,15]

Economic evaluations of rimegepant from other countries have produced inconsistent results. In China, rimegepant was found to be not cost-effective due to its high drug cost relative to its clinical benefits.[16] In contrast, an evaluation conducted in the United Kingdom comparing rimegepant with best supportive care demonstrated that rimegepant significantly improved health outcomes and was considered cost-effective within the UK healthcare context.[15] Conversely, an assessment by the Institute for Clinical and Economic Review 2020 (ICER) in the United States[12] concluded that rimegepant was not cost-effective when compared with triptans. These discrepancies reflect variations in drug costs, healthcare system structures, and time horizons applied in each economic model, highlighting why results from other countries cannot be directly applied to the Thai context.

To date, no cost-effectiveness analysis (CEA) comparing rimegepant with eletriptan has been conducted in Thailand. The availability of such economic evidence would support policymakers in evaluating both the clinical benefits and the economic value of these treatments, which is particularly crucial in the resource-limited Thai healthcare system. A clear understanding of the cost-effectiveness of rimegepant and eletriptan is essential for designing policies that promote equitable access to effective migraine treatments. Such evidence would not only benefit patients but also contribute to reducing the national burden of migraine and improving the overall efficiency of the healthcare system in the long term.

MATERIALS AND METHODS

Study design

This study was a model-based health economic evaluation using a decision tree and Markov model to compare the costs and humanistic outcomes, presented in quality-adjusted life years (QALYs), of different treatment strategies for acute episodic migraine in Thailand. A lifetime horizon with 30-day cycles was implemented with a societal perspective. The incremental cost-effectiveness ratio (ICER) was calculated by taking the difference in the total costs of treatment between rimegepant and eletriptan and dividing it by the difference in QALYs for the same treatments. Future costs and QALYs were discounted at an annual rate of 3%.[17]

This study has been reviewed and approved by the Human Research Ethics Committee of Silpakorn University (COE Number: COE 68.1010-173-9080).

Intervention

This study compared 75 mg of rimegepant (taken as needed) with 40 mg of eletriptan in patients with acute episodic migraine.[18] In the eletriptan group, patients with an inadequate response to the initial 40 mg dose could take a second 40 mg tablet at least 2 hours later.[4]

Decision model

This study employed a hybrid decision tree and Markov model to evaluate the cost-effectiveness through Microsoft Excel 2019. The model was developed based on a previous international cost-effectiveness model for rimegepant[15,16] and was adapted to the Thai context.[4]

The analysis was conducted in a population not using preventive migraine medication to avoid any potential confounding effects from such therapies on the outcomes of the two acute treatments under investigation. The base-case analysis focused on a hypothetical cohort of patients aged 18 and older with moderate to severe acute episodic migraine, evaluated over a lifetime time horizon. The model simulates a single migraine episode, defined as one continuous headache attack with a duration not exceeding 72 hours from onset to resolution. This model focused on a single headache attack.

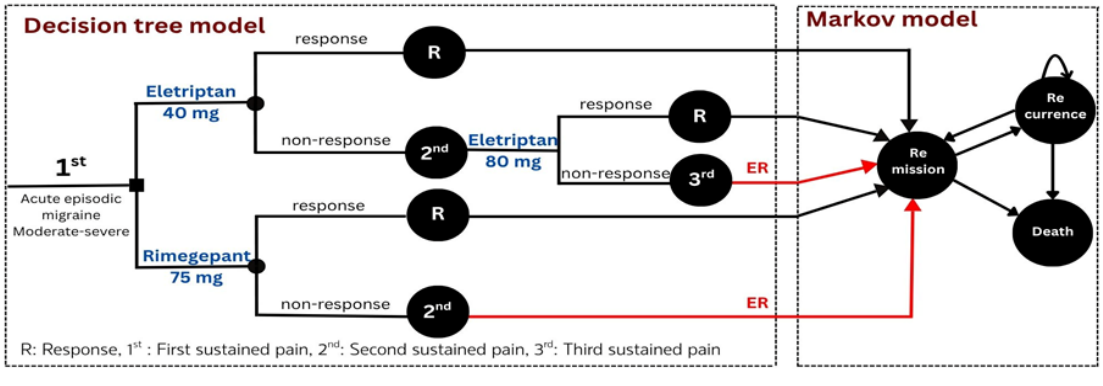


Fig 1. Decision tree and Markov model for health state transitions in moderate to severe acute episodic migraine attack.

This model was validated by three specialists: a neurologist, a clinical pharmacist specializing in neurology, and a pharmacoeconomist. The target population consists of patients who previously had an inadequate response to the maximum daily dose of sumatriptan (200 mg/day).[18] Patients diagnosed with moderate to severe acute episodic migraine entered the model, based on the criteria set by the International Classification of Headache Disorders (ICHD-3).[11] It is assumed that patients entering the model have no comorbidities, are not using other acute or prophylactic medications, and do not receive any other treatments outside of the model's pathways.

This cohort enters the model at the initial state, first sustained pain, and is subsequently divided into two treatment arms. The medication is to be taken as early as possible at the onset of a migraine headache, or within one hour of symptom onset. Following medication administration, the treatment outcome is assessed using the pain score. Patients were divided into two groups based on their pain scores. Those with a pain score of 0 were classified as the response group, while those with a pain score greater than 0 were placed in the no response group. The response group is defined as individuals who became completely pain-free (pain score = 0/10) within 2 hours of taking the medication. In contrast, the no response group consists of individuals who did not achieve a pain-free state within the same timeframe.[4,19] This classification aligns with the standard primary endpoint outlined in ICHD-3, and the guidelines from the International Headache Society (IHS).[3]

Rimegepant treatment pathway: patients in the first sustained pain state received 75 mg of rimegepant. If they did not respond, they transitioned to the second sustained pain state and were advised to proceed to the emergency room (ER), which consists of a single intravenous (IV) dose of ketorolac 30 mg.[4] Rimegepant was administered as a single maximum recommended daily dose.[18] Eletriptan treatment pathway: patients in the first sustained pain state are initiated on 40 mg of eletriptan. If they did not respond, they transitioned to the second sustained pain state and received an additional 40 mg of eletriptan (the maximum recommended daily dose is 80 mg).[4] If there was still no response, it was considered a treatment failure, and they transitioned to the third sustained pain state, which leads to seeking ER service.[4]

Patients who responded to treatment at any stage entered remission, defined as complete headache relief after responding to medication or treatment, without any adverse events. They remained in this state until experiencing a recurrence of migraine, at which point they returned to the initial first sustained pain state in the model. The model also included a death state that accounts for all-cause mortality, which was not directly linked to migraine or its treatments.[19] This assumption was consistent with previous findings indicating no significant association between migraine and all-cause mortality.[4,15] To inform this model, we utilized the mortality rate[4,15] from the Thai population, which was 8 deaths per 1,000 people per year.[20] In this model, the death state can be reached from any health state.

Model assumptions

1. The baseline number of monthly migraine days (MMD) is assumed to be 6 days per month based on studies in the Thai context.[21] In the second year, it was assumed that patients taking eletriptan would experience 6 migraine episodes per month, while those taking rimegepant would have a reduced frequency of 3 migraine episodes per month. This is consistent with clinical studies showing an approximate 50% reduction in MMD within one year, provided that patients use rimegepant for every migraine attack.[22] It is also assumed that eletriptan does not affect the frequency of migraines.[23]

2. Eletriptan adverse events include mild asthenia, somnolence, dizziness, nausea, chest symptoms, and vomiting.[8]

3. Rimegepant adverse events include nausea, dizziness, and urinary tract infection (UTI).[8]

4. Chest symptom-related adverse events include sensations of tightness, heaviness, or discomfort in the chest and arms, shortness of breath (dyspnea), palpitations, and occasionally chest pain. These are assumed to be generally mild, transient, and self-resolving without requiring treatment.[24]

5. Management of nausea and vomiting was one tablet of 10 mg domperidone taken up to three times daily as needed when symptoms occurred.

6. Management of UTI was one tablet of 250 mg ciprofloxacin taken twice daily for 3 days.[25]

7. ER service was assumed to be effective for all patients with sustained pain.

8. Patients were assumed to have full adherence to their prescribed medication.

Time horizon

As most clinical trials evaluating acute migraine treatments included patients aged 18 years and older,[12] the decision tree and Markov model in this study were developed to follow the treatment of acute migraine over a lifetime, from a starting age of 18 until death. The average life expectancy in Thailand was 75.6 years.[26] A cycle length of 30 days was considered appropriate to align with the standard assessment of MMD.

TABLE 1. Parameters used in the model.

Parameters	Distribution	Mean	SE	References
Transition probabilities				
Eletriptan 40 mg				
Pain free at 2 hours	Beta	0.31942	0.0087	8,27
Non-response	Beta	0.6806	0.0087	8,27
ADR* of eletriptan 40 mg				
Nausea	Beta	0.0331	0.0032	8,27
Somnolence	Beta	0.0157	0.0022	8,27
Asthenia	Beta	0.0228	0.0027	8,27
Dizziness	Beta	0.0098	0.0018	8,27
Vomiting	Beta	0.1110	0.0057	8,27
Chest symptoms	Beta	0.0144	0.0026	8,27
Eletriptan 80 mg				
Pain free at 2 hours	Beta	0.3325	0.0115	8,27
Non-response	Beta	0.6675	0.0115	8,27
ADR of eletriptan 80 mg				
Nausea	Beta	0.0499	0.0050	8,27
Somnolence	Beta	0.0317	0.0041	8,27
Asthenia	Beta	0.0620	0.0056	8,27
Dizziness	Beta	0.0215	0.0034	8,27
Vomiting	Beta	0.0467	0.0049	8,27
Chest symptoms	Beta	0.0247	0.0036	8,27
Rimegepant 75 mg				
Pain free at 2 hours	Beta	0.1996	0.0072	8,27
Non-response	Beta	0.8004	0.0072	8,27
ADR of rimegepant 75 mg				
Nausea	Beta	0.0171	0.0023	8,27
Dizziness	Beta	0.0047	0.0012	8,27
UTI	Beta	0.0084	0.0017	8,27
Cost (THB)				
Medicine cost				
Rimegepant 75 mg (per tablet)	Gamma	743.99	74.40	28, 29
Eletriptan 40 mg (per tablet)	Gamma	89.23	8.92	30
Eletriptan 80 mg (per tablet)	Gamma	178.45	17.85	30
Direct medical cost				
Cost of domperidone	Gamma	0.3200	0.0320	30
Cost of ciprofloxacin	Gamma	2.4100	0.2407	30
Cost of ketorolac	Gamma	99.3700	9.9371	30
Cost of 0.9% NSS 1000 ml	Gamma	32.1000	3.2100	30
Cost of OPD service	Gamma	120.0000	12.0000	31
Cost of IV administration	Gamma	150.0000	15.0000	31
Cost of IV set	Gamma	69.9000	6.9902	30
Cost of IV cannulation	Gamma	1000.0000	100.0000	31
Cost of ER service	Gamma	250.0000	25.0000	31

TABLE 1. Parameters used in the model. (Continued)

Parameters	Distribution	Mean	SE	References
Direct non-medical cost				
Cost of food (per day)	Gamma	66.3900	6.6389	31
Cost of transportation (round trip)	Gamma	180.2300	18.0228	31
Utility				
Response	Beta	0.8420	0.0119	32
Non-response	Beta	0.7730	0.0087	33
Nausea	Beta	0.6700	0.0816	34
Dizziness	Beta	0.8100	0.0194	35
Chest pain	Beta	0.6700	0.0306	36
Asthenia	Beta	0.7700	0.0245	35
Somnolence	Beta	0.7600	0.0107	37
Vomiting	Beta	0.6700	0.0816	34
UTI	Beta	0.9000	0.0222	23

Abbreviation: *ADR; Adverse drug reaction

Clinical effectiveness and transition probabilities

This systematic review was conducted to derive clinical outcome probabilities and transition probabilities for the cost-effectiveness model in acute episodic migraine, following a structured and predefined protocol consistent with standard methodological guidance for systematic reviews. A comprehensive literature search was performed across electronic databases, including PubMed, Scopus, and the Cochrane Library. The search aimed to identify relevant randomized controlled trials (RCTs) evaluating rimegepant and eletriptan in adults with acute migraine. Furthermore, meta-analysis and network meta-analysis based on systematic reviews with protocols similar to the aforementioned protocol was also be included if they report clinical outcome probabilities and transition probabilities relevant to the cost-effectiveness model of acute episodic migraine.

Eligible studies included RCTs with parallel, cross-over, or factorial designs, as well as systematic reviews with meta-analysis published in Thai or English that reported quantitative outcomes suitable for estimating transitions between response and non-response states. Non-RCTs, non-original articles, animal studies, studies involving ineligible populations, studies with insufficient data, and duplicate publications were excluded. The model population comprised adults (≥18 years) diagnosed with acute episodic migraine of moderate-to-severe intensity according to ICHD-3 criteria, with a diagnosis duration of at least one year. Patients with chronic migraine, mild attacks, other primary headache disorders, contraindication or intolerance to triptans, use of migraine prophylaxis, pregnancy or breastfeeding, significant drug–drug interactions, or allergy to triptans or gepants were excluded.

Finally, the Risk of Bias 2 (RoB 2) tool was used to assess the risk of bias in the included study before its data were used in the analysis.

Costs

All costs were expressed in Thai baht as presented in Table 1. Drug costs for rimegepant and eletriptan were obtained from official procurement prices and median drug prices in Thailand. The unit cost of rimegepant 75 mg was derived from pricing data from tertiary care hospitals[28,29] while the cost of eletriptan 40 mg and other drugs were obtained from national reference prices.[30,31] Costs of outpatient visits and ER services were derived from 2025 standard service charge schedules of public hospitals affiliated with the Ministry of Public Health, Thailand.[29] Direct non-medical costs, including food and transportation expenses incurred during healthcare utilization, were obtained from the standard cost lists for health technology assessment in Thailand.[38] All costs were adjusted to 2025 values using the consumer price index (CPI) from the Bureau of Trade and Economic Indices, Ministry of Commerce, Thailand.

Utility values

QALYs were used as a measure of humanistic outcomes, which were calculated by utility weight multiplied by life years. Utility weight reflected health-related quality of life associated with different health states and adverse drug reactions in patients with acute episodic migraine. Utility values ranged from 0 (death) to 1 (perfect health). This approach allowed the model to capture changes in quality of life associated with both migraine symptoms and treatment-related outcomes during an acute migraine episode. Utility values for migraine-related health states and adverse drug reactions were obtained from previously published studies. All utility values used in the analysis are summarized in Table 1.

Sensitivity analysis

The one-way sensitivity analysis involves varying individual parameters with their highest and lowest values to observe their effect on the ICER, which was presented in a tornado diagram. The probabilistic analysis examines the combined uncertainty of multiple parameters through 1,000 random iterations using Monte Carlo simulations. The result was presented by a cost-effectiveness plane between incremental cost and incremental QALYs.

RESULTS

Cost-effectiveness analysis

The cost-effectiveness analysis of rimegepant compared with eletriptan for patients with acute episodic migraine in Thailand showed that the total costs of rimegepant and eletriptan treatments were 2,442,622.42 baht and 2,450,782.33 baht, respectively. Regarding health outcomes, the QALYs gained from rimegepant and eletriptan were 25.21 and 17.59, respectively. The rimegepant strategy is considered a dominant strategy because it yields more QALY and has lower overall treatment costs. Therefore, rimegepant can be considered the more cost-effective option for treating acute episodic migraine in the Thai context.

Sensitivity analysis

The one-way sensitivity analysis presented as a tornado diagram in Fig 2 demonstrated that the parameter with the greatest influence on the ICER was the cost of rimegepant. When the cost of rimegepant 75 mg increased, the ICER also rose, as the drug cost is the primary direct cost component. The next most influential parameters were the probabilities of non-response to eletriptan 80 mg and eletriptan 40 mg, followed by the probability of non-response to rimegepant 75 mg.

TABLE 2. Cost-effectiveness results.

	Total cost (Baht)	QALYs (Years)	ICER of rimegepant compared to eletriptan THB per QALY gained*	
Rimegepant	2,442,622.42	25.21	-1,071.79*	Dominant*
Eletriptan	2,450,782.33	17.59		

*Negative ICER due to higher effectiveness and lower costs of rimegepant compared to eletriptan

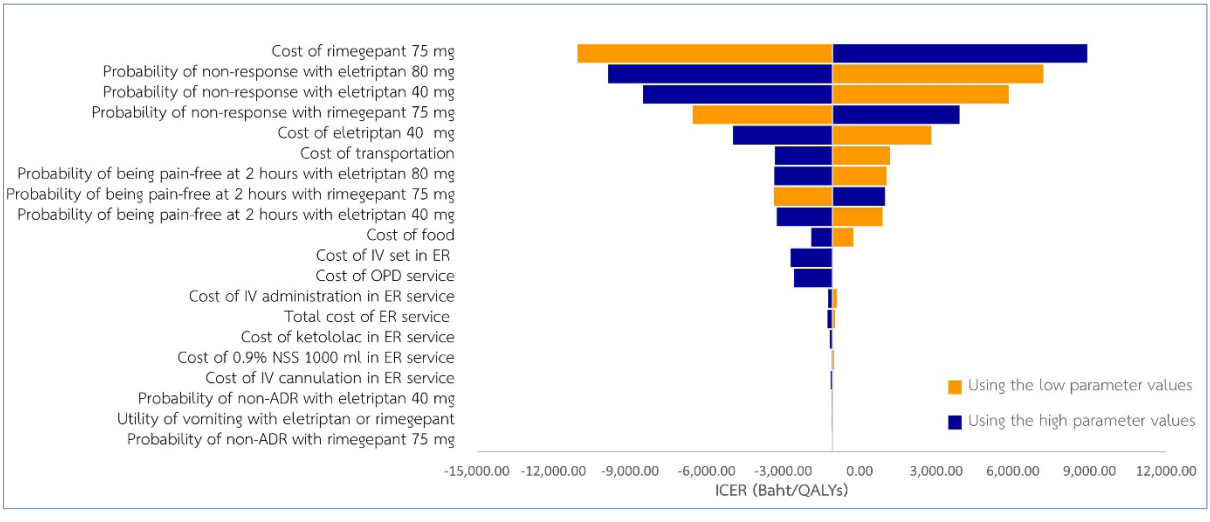


Fig 2. Tornado diagram depicts the results of a one-way sensitivity analysis

The probabilistic sensitivity analysis results are shown in Fig 3 as a cost-effectiveness plane illustrating the relationship between incremental costs and incremental QALYs of rimegepant compared with eletriptan. All parameters were randomized 1,000 times using Monte Carlo simulation. The blue dot indicated the base-case ICER. The simulation results primarily fell within the quadrants of the cost-effectiveness plane indicating incremental gains in quality-adjusted life years (QALYs) with rimegepant. Regarding incremental costs, 52.7% of the simulation results fell in the fourth quadrant, indicating lower costs and greater QALYs with rimegepant, while 47.3% fell in the first quadrant, indicating higher costs and greater QALYs. These results imply a 52.7% probability that the total cost of treatment with rimegepant would be lower than that with eletriptan and a 47.3% probability that it would be higher.

DISCUSSION

This study represents the first economic evaluation to compare the cost-effectiveness of rimegepant and eletriptan for the treatment of moderate to severe migraine. The findings demonstrate that rimegepant is a more cost-effective option than eletriptan within the context and cost structure of the Thai healthcare system.

In comparison with international studies, the cost-effectiveness outcomes of rimegepant are dependent on several factors, such as the model type, comparator, time horizon, and differing costs. Our results are not consistent with studies from China[16] and the United States.[12] The Chinese study, which compared rimegepant to a placebo using a decision tree model with a 2-hour time horizon, was too short to capture long-term factors such as the impact of adverse events and the reduction in monthly migraine days. In terms of cost, it only included drug costs, omitting other relevant expenses like physician consultation fees and emergency room visits. Meanwhile, the study from the United States (ICER) utilized a semi-Markov model with a 48-hour cycle over a 2-year time horizon, comparing rimegepant against triptans. While it considered the quality-of-life impact from adverse events, it did not incorporate the benefit of rimegepant in reducing MMD.[23] Its cost analysis was comprehensive, including drug costs, physician visits, and ER service visits, but it lacked the costs associated with managing adverse events.

Conversely, our findings align with a study from the United Kingdom[15], which found rimegepant to be cost-effective compared to best supportive care. That study used a long-term Markov model and included comprehensive costs beyond just the drug itself, although it similarly lacked costs for managing adverse events.

This study's distinction lies in being the first economic evaluation model for the gepants class developed to specifically reflect the costs and structure of the Thai healthcare system. Critically, it employs a hybrid model, combining a short-term (2-hour) decision tree to simulate the acute attack with a long-term Markov model to capture the impacts of recurrence and ADRs. The cost analysis is more comprehensive, including drug costs, physician visits, emergency room visits, ADR management costs, travel, and food expenses, making it more thorough than the aforementioned studies. Most importantly, it integrates the benefit of rimegepant in reducing monthly

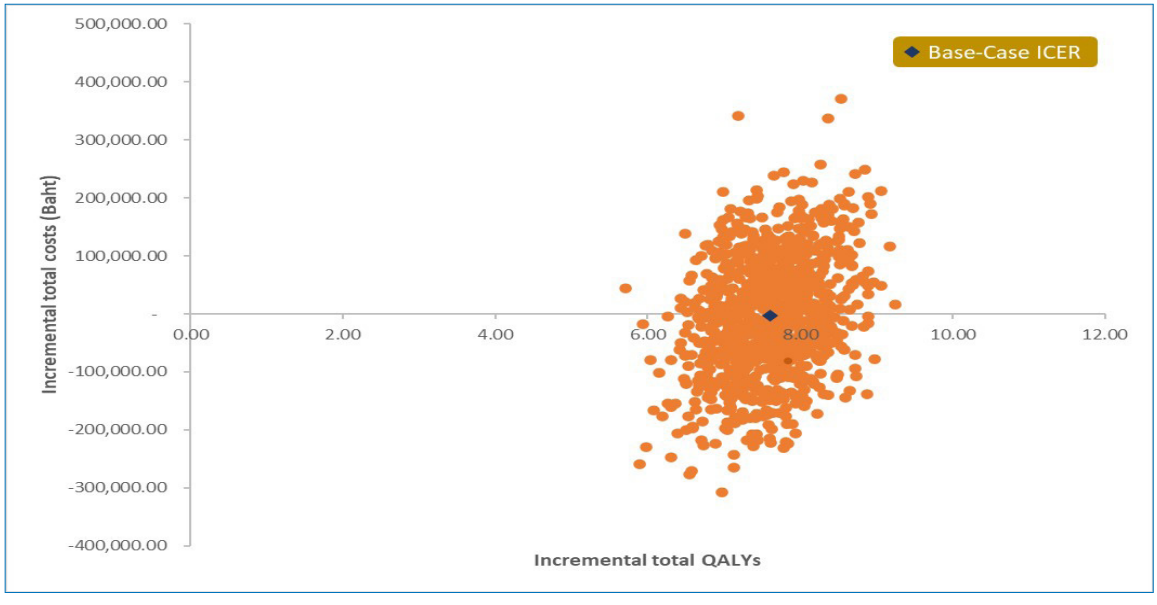


Fig 3. Cost-effectiveness plane of treatment with rimegepant compared eletriptan for patients with acute episodic migraine in Thailand

migraine days, allowing it to reflect the true value of a drug with both acute and preventive properties. This gives the study a significant advantage for direct application in policymaking within the Thai context.

The key factor driving the superior cost-effectiveness of rimegepant over eletriptan is the gain in the QALYs, resulting from better overall quality of life outcomes. This is primarily due to a lower incidence of adverse events, such as nausea, vomiting, and somnolence[8], which leads to higher utility values during treatment. Additionally, rimegepant's ability to reduce MMD[23] shortens the time patients spend in a migraine state. Although rimegepant has a significantly higher per-treatment unit cost than eletriptan[28-31], when considering the entire treatment pathway, it reduces overall costs. The lower rate of adverse events decreases expenditures on managing them, while the reduction in MMDs leads to less frequent medication use and a lower risk of treatment failure, which in turn reduces subsequent costly ER service visits.[4,29] Considering the reduction in MMDs as a treatment benefit is crucial, given that the frequency of migraine days directly impacts treatment costs and is a primary determinant of patients' quality of life. However, if the reduction in MMDs is less than 34% from baseline—resulting in more than four migraine days per month—the cost-effectiveness outcomes may differ from those reported in this study.

The uncertainty analysis in this study was conducted to validate the model's economic findings. The PSA, which involved 1,000 Monte Carlo simulations simultaneously varying all parameters, demonstrated that rimegepant consistently remained the more cost-effective option. This indicates that the cost-effectiveness of rimegepant is not solely dependent on its price but is a result of the model's overall cost and effectiveness structure. Nevertheless, the drug response rates for both rimegepant and eletriptan remain critical variables. If future large-scale studies were to show lower efficacy for rimegepant or a higher non-response rate than assumed in this model, it could increase the number of patients entering more costly treatment pathways and potentially alter the cost-effectiveness conclusion.

However, the application of these findings must consider certain limitations. First, the MMD reduction benefit of rimegepant was established in studies lasting approximately one year. It is possible that long-term use could lead to tolerance or diminished efficacy, which would mean our study might overestimate its benefits. Conversely, if the drug's preventive effect remains stable over the long term, its true cost-effectiveness could be even higher than estimated here. Another key limitation is that our model directs patients with treatment failure to the emergency room. In practice[4], some patients may manage failure by using a triptan combined with an NSAID, a lower-cost alternative. The exclusion of this pathway might have overestimated the costs in the eletriptan arm. Although guidelines recommend combining a triptan with an NSAID (specifically sumatriptan with naproxen)[4], a literature review found no direct efficacy data for the combination of eletriptan and naproxen. Therefore, this option was not included to avoid introducing further uncertainty into the model. Finally, the calculation of utility was simplified. In reality, a patient can experience multiple ADRs simultaneously, which would have a cumulative impact on quality of life and QALYs, potentially causing our model to over- or underestimate the true cost-effectiveness.

In conclusion, the evidence presented demonstrates that rimegepant is a more cost-effective option than eletriptan for the treatment of moderate-to-severe migraine within the Thai context. The uncertainty analyses, both one-way and probabilistic, confirm this result, with outcomes consistently clustering in the quadrant representing a net health benefit. These findings are therefore reliable for informing healthcare policy decisions in Thailand, particularly for migraine patients for whom triptans are not a suitable option. Nonetheless, the collection of long-term, real-world effectiveness data is recommended to confirm these findings.

CONCLUSIONS

Rimegepant has demonstrated cost-effectiveness in treating acute episodic migraine in Thailand, as it is a dominant strategy, generatings higher QALYs while incurring lower overall costs. Therefore, rimegepant should be a treatment option for acute episodic migraine in patients who have previously experienced an inadequate response to the maximum daily dose of sumatriptan.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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DECLARATIONS

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Conflict of Interest

The authors declare no conflict of interest.

Registration Number of Clinical Trial

Not applicable.

Author Contributions

Conceptualization and Design study protocol, J.L., W.T.; Methodology, J.L., W.T.; Collecting information and Data interpretation. W.T., J.P., J.K., K.K., N.P.; Analysis and results interpretation, J.L.; Visualization and writing, J.L., W.T., J.P., J.K., K.K., N.P.; Original draft, J.L., W.T.; Writing – review and editing, J.L., W.T. All authors have read and agreed to the final version of the manuscript.

Use of Artificial Intelligence

Artificial intelligence tools were used for language editing and grammar refinement. All scientific content, interpretation, and conclusions were developed and verified by the authors.

Institutional Review Board Statement

This study has been reviewed and approved by the Human Research Ethics Committee of Silpakorn University (COE Number: COE 68.1010-173-9080).

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