



## A Short on Ubrogapant

**S. Padmaja<sup>a</sup> and J. Mohan<sup>a\*</sup>**

<sup>a</sup> *Department of Pharmacology, Chettinad Hospital and Research Institute, Chettinad Academy of Research and Education, Kelambakkam-603103, Tamil Nadu, India.*

### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i56A33888

### **Open Peer Review History:**

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/76639>

**Short Communication**

**Received 06 October 2021**  
**Accepted 13 December 2021**  
**Published 13 December 2021**

## **ABSTRACT**

Migraine is a mysterious disorder characterized by pulsating head ache, which is actually characterized to one side and comes in attacks which will be lasting for about 3-48 hours and can be associated with nausea, vomiting, sensitivity to sound, flashes of light, vertigo and diarrhoea [1]. Most of the drugs which are in current use for acute migraine like triptans, treats the disorder symptomatically. A novel group of drugs has been in research for the migraine which treats the disorder pathologically. Calcitonin gene – related peptide (CGRP) has a major role in the pathophysiology of the disorder and hence CGRP receptor antagonist, known as Gepants are in the research process [2]. Gepants are being studied for the efficacy of treating acute migraine [2]. This article will be a review article about the drug – Ubrogapant, which is approved for treatment of migraine with acute attacks in adults [3].

*Keywords: Ubrogapant; migraine, hepatotoxicity.*

## **1. INTRODUCTION**

Migraine is a mysterious disorder characterized by pulsating head ache, which is actually characterized one side and comes in attacks which will be lasting for about 3-48 hours and can be associated with nausea, vomiting,

sensitivity to sound, flashes of light, vertigo and diarrhoea [1]. In spite of many other causative factors for migraine like activation of trigeminovascular system, Calcitonin Gene-related peptide also has a major role in migraine attacks [4]. Though previous CGRP antagonist drugs like Telcagepant produced increased liver

\*Corresponding author: E-mail: [adrilthecute1@gmail.com](mailto:adrilthecute1@gmail.com);

enzymes [5], a newer CGRP – Ubrogепant was approved by the FDA on 23<sup>rd</sup> December 2019 by the ALLERGAN COMPANY, is a promising and more potent drug with reduced risk of hepatotoxicity [3].

**Clinical trial [2]:** A phase III, multicentric, randomized, open label with 52 weeks extension trial was conducted. Patients diagnosed with Migraine and either with or without aura was recruited in the trial after the completion of Phase II trials. Participants were again randomized to 1:1:1 for standard treatment, ubrogепant 50mg and ubrogепant 100mg. The dose of ubrogепant was blinded. The primary outcomes were safety and tolerability. The study population included 1230 participants (404 for Ubrogепant 50mg, 409 for Ubrogепant 100mg and 417 for usual care). All through the study, 21454 migraine attacks were treated with 31968 doses of ubrogепant. On long duration with intermittent usage of Ubrogепant 50mg and 100mg when administered as either with 1 or 2 doses for a single attack, the acute treatment of migraine was considered to be safe and well tolerated, with lower incidence of treatment related Treatment-emergent adverse effects and serious adverse events [2].

**Pharmacokinetics [3]:** After oral administration, ubrogепant is absorbed with maximum plasma levels reaching in 1.5 hours approximately. High fat meal delays and reduces absorption. It has 87% of plasma protein binding capacity. Mainly metabolized by CYP3A4. The elimination half-life is 5-7 hours. Most of the drug is eliminated via feces and renal elimination is only a minor pathway.

**Dosage [3]:** Oral tablets – 50mg or 100mg of Ubrogепant.

**Mechanism of action [3]:** The drug acts by blocking the receptors of the Calcitonin gene-related peptide

## 2. USE IN SPECIFIC POPULATION

**Renal impairment [3]:** For patients with severe renal disorders the doses of ubrogепant has to be reduced due to the possibilities of increased levels of the drug.

**Hepatic impairment [3]:** Patients with severe hepatic impairment or disorders requires dose adjustments.

**Pregnancy [3]:** There is no proper adequate information about the developmental risks with

Ubrogепant use in pregnant women. Embryofetal developmental risks were observed in the animals with the use of Ubrogепant.

**Geriatric [3]:** Elderly patients who are above 65 years of age, the dose has to be altered and to be started with lower doses.

**Adverse effects [3]:** Nausea, dry mouth and somnolence.

**Nonclinical toxicology [3]:** Carcinogenicity – There is no evidence for any drug related tumours in animals or humans.

**Indication [3]:** It is indicated only in the treatment of acute migraine attack and not for preventive therapy.

**Drug interactions [3]:** Ubrogепant should not be given along with CYP3A4 inhibitors (ex: ketoconazole, ciprofloxacin, cyclosporine, etc.) which will increase the drug exposure. Co-administration with CYP3A4 inducers (ex: phenytoin, rifampicin, barbiturates) leads to loss of efficacy of ubrogепant and leads to significant reduction in the drug exposure. Use of BCRP/P-gp inhibitors (ex: quinidine, carvedilol) will lead to increased drug levels since Ubrogепant is a substrate for BCRP/P-gp.

## 3. CONCLUSION

A new drug Ubrogепant, which treats the disorder pathologically for the acute attacks of migraine is considered to be safe and better tolerated with reduced risks of hepatotoxicity.

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

Ethical Clearance for this study was got approved from the Institutional Human Ethical Committee (IHEC).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Arnold M. Headache classification committee of the international headache society (IHS) the international classification

- of headache disorders. Cephalalgia. 2018; 38(1):1-211.
2. Ailani J, Lipton RB, Hutchinson S, Kniewel K, Lu K, Butler M, Yu SY, Finnegan M, Severt L, Trugman JM. Long-Term Safety Evaluation of Ubrogepant for the Acute Treatment of Migraine: Phase 3, Randomized, 52-Week Extension Trial. Headache: The Journal of Head and Face Pain. 2020;60(1):141-52.
  3. Available:[https://www.accessdata.fda.gov/drugsatfda\\_docs/label/2019/211765s0001bl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2019/211765s0001bl.pdf) accessed on 08/12/2021
  4. Akerman S, Holland PR, Goadsby PJ. Diencephalic and brainstem mechanisms in migraine. Nature Reviews Neuroscience. 2011;12(10):570-84.
  5. Ho TW, Connor KM, Zhang Y, Pearlman E, Koppenhaver J, Fan X, Lines C, Edvinsson L, Goadsby PJ, Michelson D. Randomized controlled trial of the CGRP receptor antagonist telcagepant for migraine prevention. Neurology. 2014;83(11):958-66.

---

© 2021 Padmaja and Mohan; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*  
*The peer review history for this paper can be accessed here:*  
<https://www.sdiarticle5.com/review-history/76639>