



## Blood pressure monitoring and worsening in patients with migraine treated with erenumab: a systematic review and meta-analysis

Luana Miyahira Makita<sup>1</sup>, Aishwarya Koppanatham<sup>2</sup>, Angela Maria Sandini Corso<sup>1</sup>, Giovana Schlichta Adriano Kojima<sup>1</sup>, Henrique Alexander Ferreira Neves<sup>1</sup>, Rafael de Freitas Kleimann<sup>1</sup>, Rafael Reis de Oliveira<sup>3</sup>, Vinicius Salles Alves<sup>1</sup>, Elcio Juliato Piovesan<sup>4</sup>

<sup>1</sup>Complex of the Clinical Hospital of the Federal University of Parana, Curitiba, Brazil

<sup>2</sup>Andhra Medical College, Visakhapatnam, India.

<sup>3</sup>Complex of the Hospital João de Barros Barreto of the Federal University of Pará, Belém, Brazil.

<sup>4</sup>Neurology Service, Department of Clinical Medicine, Complex of the Clinical Hospital of the Federal University of Parana, Curitiba, Brazil

### Introduction

The involvement of calcitonin gene-related peptide (CGRP) pathways in vascular resistance regulation has prompted concerns regarding the use of monoclonal antibodies for migraine treatment. Blocking CGRP or your receptor could theoretically increase the risk of vascular issues in migraineurs, particularly considering the higher prevalence of hypertension among migraine patients compared to migraine-free individuals. While prior clinical evidence did not establish a clear association between erenumab use and adverse vascular events, the US Prescribing Information for erenumab was revised in April 2020 to include the risk of hypertension based on postmarketing data.

### Objective

Evaluate changes in systolic and diastolic blood pressure (BP) in patients with migraine before and after treatment with erenumab.

### Methods

We performed a systematic review and meta-analysis of observational and randomized clinical trial data assessing BP changes and worsening in migraineurs initiating treatment with erenumab. Cochrane Library, EMBASE, and PubMed databases were searched for studies published up to June 18, 2024. The data were collected in Mean Difference and number of events. Regarding hypertension outcomes, subanalyses were conducted to worsening blood pressure reports.

### Results

Thirteen studies comprising 5,018 patients undergoing treatment with erenumab were included. Overall, erenumab initiation was not associated with significant increase in systolic (MD 1.31; 95%CI -0.82, 3.44; P>0,05) or diastolic blood pressure (MD 1.33; 95%CI -0.20, 2.86; P>0,05) when compared to baseline values. Subgroup analysis of blood pressure variation restricted to non-randomized studies also showed no significant change in either systolic (MD 2.03; 95%CI -1.34, 5.39; P> 0.05) or diastolic levels (MD 1.27; 95%CI -1.33, 3.87; P>0.05) Subanalyses demonstrated a prevalence of 17.01 events of worsening BP per 100 patients treated with erenumab (95%CI 10.80-25.76; I<sup>2</sup>=94%).

### Conclusion

Our findings suggest that erenumab use as a preventive treatment in adult migraineurs is not associated with an increased systolic or diastolic BP when compared to pre-erenumab values. Further subgroup analyses on pre-hypertensive patients may explain the elevated heterogeneity in the prevalence of worsening blood pressure reported.