

# Warfarin Therapy Improved Migraine Headaches with Aura: A Case Report

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## Abstract

Warfarin therapy is indicated for patients generally requiring anticoagulation therapy. Warfarin's common indications include myocardial infarction (MI), deep vein thrombosis (DVT), and stroke. Warfarin is favorable for many clinicians because it allows for direct monitoring. Furthermore, it comes in many doses which offer options for providers to ensure optimal anticoagulation for patients through monitoring of the International Normalized Ratio (INR). Warfarin acts as a vitamin K antagonist, preventing the synthesis of certain coagulation factors. Another benefit of warfarin is that it can be reversed using vitamin K. Literature reports have demonstrated warfarin's benefit in some adult patients for migraine headaches. Although these findings are scarce and incidental, we report a case of a 52-year-old male for whom warfarin was instrumental in maintaining the abortive benefit of migraine headaches and associated visual disturbances. The case report illustrates the possible added benefit of continuing warfarin therapy for patients with migraine headaches regardless of the primary indication for the warfarin therapy.

**Keywords:** Warfarin, Migraines, Visual aura, Abortive therapy, Anticoagulation

## INTRODUCTION

Migraine headaches have been alleviated in patients using warfarin as reported in the literature [1-6]. Although the mechanism of warfarin does not support efficacy for migraines, the finding is usually incidental [7-9]. This is a case report of incidental findings of a 53-year-old male with a history of migraines with aura improved with warfarin therapy.

## Case Report

A 53-year-old male with a history of Type 2 Diabetes Mellitus (T2DM), hypertension (HTN), myocardial infarction (MI), and migraines with aura. The patient had MI with bare metal stent placement in September 2020 for which warfarin was started. A list of patient medications is illustrated in (Table 1).

**Table 1. September 2020 Medication List:**

Vitamin D-3 1000 IU capsule - One capsule by mouth once a day
Vitamin B-12 1000 mcg tablet - One tablet by mouth once a day
Metformin HCl 750 mg extended-release tablet - Two tablets by mouth daily
Warfarin 5 mg tablet - One tablet by mouth as directed once a day
Lisinopril 10 mg tablet - One tablet by mouth once daily
Atorvastatin 40 mg tablet - One tablet by mouth once daily

In September 2021, the patient had a visit with cardiology for which Warfarin and clopidogrel were discontinued and aspirin was started. The patient reported no signs or symptoms of migraine headaches during the preceding 12 months of therapy with warfarin.

At the end of September 2021, the patient reported having episodes of increased headaches with visual field disturbances for which paracetamol 500 mg two tablets twice daily helped alleviate. The patient reported taking daily doses of paracetamol for headaches and was referred to neurology for further assessment. Neurology reported normal computerized tomography (CT) scanning and referred the patient to ophthalmology for an eye exam. The eye examination was normal, and the patient was instructed to follow up with primary care. A list of patient medication during this visit is illustrated in (Table 2).

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**Table 2. September 2021 Medication List**

Vitamin D-3 1000 IU capsule - One capsule by mouth once a day
Vitamin B-12 1000 mcg tablet - One tablet by mouth once a day
Metformin HCl 750 mg extended-release tablet - Two tablets by mouth daily
Lisinopril 10 mg tablet – One tablet by mouth once daily
Atorvastatin 40 mg tablet – One tablet by mouth once daily
Aspirin 100 mg tablet – One tablet by mouth once daily
Paracetamol 500 mg tablet – Two tablets by mouth twice daily

In November 2021, he had an emergency room (ER) visit for fatigue, visual disturbances, and increased migraines without paracetamol and ibuprofen improvement of symptoms. Laboratory values were insignificant with an HbA1c value of 6.3% without hypoglycemia. The patient reported concerns regarding his belief that migraines were controlled on warfarin for 12 months and Warfarin 5 mg tablet once daily by mouth was restarted and the patient was discharged to follow up with his primary care physician. A list of patient medication for this visit is illustrated in (Table 3).

**Table 3. November 2021 Medication List:**

Vitamin D-3 1000 IU capsule - One capsule by mouth once a day
Vitamin B-12 1000 mcg tablet - One tablet by mouth once a day
Metformin HCl 750 mg extended-release tablet - Two tablets by mouth daily
Lisinopril 10 mg tablet – One tablet by mouth once daily
Atorvastatin 40 mg tablet – One tablet by mouth once daily
Aspirin 100 mg tablet – One tablet by mouth once daily
Warfarin 5 mg tablet - One tablet by mouth as directed once a day

In December 2021, the patient reported visual disturbances and migraines had ceased during the three weeks of warfarin restart at the primary care visit. Warfarin therapy was continued with an International Normalized Ratio (INR) goal of 2.5 along with other medications.

During his bimonthly follow-up appointment with the anticoagulation clinic in January 2022, the patient reported no symptoms of migraines, visual disturbances, or bleeding on Warfarin therapy. The INR for December 2021 and January appointments were 2.7, 2.6, 2.7, and 2.5 respectively.

## RESULTS AND DISCUSSION

We report an incidental finding of warfarin efficacy towards migraine headaches with visual aura with relapse of symptoms after warfarin discontinuation. This report illustrates the potential benefit of warfarin for patients with migraines and headaches after 12 months of ceased

symptoms and visual disturbances relapsing due to warfarin discontinuation.

Although evidence for warfarin efficacy for migraine headaches is lacking, similar cases have been reported in the literature with similar patient presentations (1-6). Reported cases of warfarin benefit in migraine headaches have illustrated both complete and partial elimination of migraine symptoms.

In a retrospective observational study, researchers observed the relationship between warfarin therapy and migraine symptoms [10]. The study included patients taking sumatriptan or ergotamine along with acenocoumarol/phenprocoumon or acetylsalicylic acid which are derivatives of coumarin with vitamin K antagonism like warfarin. It concluded that the therapeutic intensity of abortive migraine therapy was significantly reduced by 40% in the vitamin K antagonism group compared to 4.7% in the acetylsalicylic acid group ( $p < 0.004$ ).

A cross-over trial comparing acenocoumarin to propranolol found no difference in efficacy for migraine headaches [11]. Another case series study of two patients on warfarin therapy noted improved migraines but did not note any benefit when the same patients were rechallenged with acenocoumarin [12].

Our case included a male patient for whom warfarin therapy was indicated for MI with a goal INR of 2.5. It is unclear whether targeting lower or higher INR could result in an abortive benefit of migraine headaches in adult patients. Moreover, it is not clear if the abortive benefit of warfarin therapy is longlasting.

## CONCLUSION

Based on our case and other cases reported in the literature, warfarin therapy could improve migraine headaches and associated visual aura in adults. The rapid onset of warfarin therapy in reducing the symptoms of migraines is promising and warrants further analysis.

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