

Migraine and cardiovascular risk contemporary views and prevention.**Mustayev Shohjahon, Haydarov Umarbek, Sagatov Ikrom.****Neurology Intern at Samarkand State Medical University****Abstract**

Migraine is increasingly recognized not only as a disabling neurological disorder but also as a marker of vascular vulnerability, particularly when aura is present. Contemporary evidence from large population datasets, cohort studies, and reviews shows the most consistent association between migraine with aura and ischemic stroke, while links with broader cardiovascular disease (CVD)—such as myocardial infarction, atrial fibrillation, and cardiovascular mortality—are generally smaller and more heterogeneous across studies. The elevated risk is only partly explained by classic risk factors, suggesting shared mechanisms (endothelial dysfunction, inflammation, prothrombotic changes, and neurovascular dysregulation). Prevention is therefore best approached in two parallel tracks: aggressive control of modifiable vascular risk factors and (2) risk-aware migraine management, especially in patients with known CVD and in women considering estrogen-containing contraception when aura is present.

Keywords

migraine; migraine with aura; cardiovascular risk; ischemic stroke; primary prevention; endothelial dysfunction; inflammation; thrombosis; triptans; cgrp pathway; hormonal contraception; women's health

Introduction

Migraine affects a large share of adults and is a leading cause of disability. Historically considered a “benign” episodic headache disorder, migraine is now viewed as a brain–vascular disorder in which neurogenic inflammation and altered vascular reactivity interact. A major shift in the last decade is the recognition that migraine—especially migraine with aura—correlates with higher risk of ischemic

stroke and may be associated with broader cardiovascular outcomes. The most consistent vascular signal in migraine research is ischemic stroke, with the association strongest for migraine with aura. Large datasets and modern analyses continue to show higher stroke risk among individuals with migraine, and higher still among those with aura, even after adjusting for vascular comorbidities. The magnitude of absolute risk varies by age and baseline profile, but the pattern is stable: aura matters, and risk compounds with smoking, hypertension, and estrogen exposure. Broader cardiovascular disease associations are increasingly reported but are more variable. Recent comprehensive reviews describe links between migraine with aura and outcomes such as myocardial infarction, atrial fibrillation, and cardiovascular mortality, though effect sizes are generally smaller than for stroke and depend on population and methodology. A clinically important nuance is that migraine can coexist with “relatively healthy” traditional risk-factor profiles—so routine lipid/BP/diabetes screening alone may underestimate overall vascular susceptibility in some migraine patients. Mechanisms (why this relationship may exist) No single mechanism explains the association; current thinking is multifactorial: Endothelial dysfunction and impaired vascular reactivity (including altered nitric oxide signaling and microvascular responsiveness). Inflammatory and prothrombotic tendencies, potentially increasing susceptibility to thrombosis or microembolism in vulnerable settings. Neurovascular coupling changes related to aura physiology and cortical spreading depolarization, which may influence cerebral perfusion and vascular stability. Shared genetics/comorbidities and, in selected patients, structural or embolic pathways that may contribute to both migraine phenotype and ischemic events (an area still under active study).

Conclusion

Modern evidence supports migraine—especially migraine with aura—as a clinically meaningful marker of elevated ischemic stroke risk, with more modest and variable associations with other cardiovascular outcomes. Importantly, migraine can signal vascular risk even when traditional risk-factor profiles appear

favorable, highlighting the need for comprehensive prevention rather than reliance on standard calculators alone. The most effective prevention strategy is dual: optimize classic cardiovascular risk factors according to current stroke prevention guidance and choose migraine therapies with cardiovascular safety in mind, including respecting FDA contraindications for triptans in patients with relevant cardiovascular disease and providing careful contraception counseling for women with aura.

Literature.

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