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EDITORIAL

Beyond Headache: Migraine in Pregnancy and Its Obstetric–Vascular Consequences

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Migraine remains one of the most common and disabling neurologic disorders affecting women of childbearing age, with a substantial and growing global burden that spans the full reproductive window [1].

Pregnancy is often described as a period of improvement for many individuals with migraine, particularly migraine without aura, and this has been attributed in part to rising and more stable estrogen levels across the second and third trimesters [2]. Nevertheless, improvement is not universal, and relapse is common in the early postpartum period, emphasizing how dynamic the clinical course can be across pregnancy and after delivery [3].

Clinicians should therefore anticipate both trajectories: meaningful improvement in some patients and clinically significant persistence or recurrence in others, particularly around delivery and postpartum when sleep deprivation, stress, and hormonal shifts re-emerge [4].

Crucially, improvement in headache frequency does not mean the condition is benign in pregnancy. Population-based registry studies and prospective cohorts have associated maternal migraine with higher risks of several adverse outcomes, especially hypertensive disorders of pregnancy and preterm birth. For example, a large cohort study reported increased risks for pregnancy-associated hypertensive disorders and other adverse outcomes among women with migraine compared

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with women without migraine [5].

In the Nurses' Health Study II, prepregnancy migraine was associated with higher risks of preterm delivery, gestational hypertension, and preeclampsia; migraine with aura appeared to carry a somewhat higher risk of preeclampsia than migraine without aura in that cohort [6].

More recent evidence, including an umbrella review with updated meta-analysis, similarly reports elevated odds of preeclampsia and preterm birth in pregnant individuals with migraine and raises important questions about heterogeneity by phenotype, comorbidity, and treatment exposure [7]. Together, these data suggest that migraine history—particularly phenotype and vascular risk profile—should be considered during obstetric risk assessment rather than treated as an isolated pain complaint [5–7].

The association between migraine and vascular complications is especially important because pregnancy is a prothrombotic and hemodynamically complex state. Earlier large-scale inpatient analyses found strong associations between active peripartum migraine and vascular diagnoses, including stroke and hypertensive disorders, although causality and temporality cannot be established [8].

Systematic reviews and meta-analyses report increased risks of hypertensive disorders of pregnancy (including preeclampsia) and preterm birth among individuals with migraine [9]. In a large U.S. national inpatient analysis, migraine during pregnancy was associated with significantly higher odds of both ischemic and hemorrhagic stroke, particularly migraine with aura [10].

In practice, headache evaluation during pregnancy and postpartum should avoid anchoring to primary migraine when red flags suggest secondary headache aetiologies, and clinicians should escalate the evaluation when the presentation is atypical, severe, sudden-onset, or accompanied by hypertension, neurologic deficits, visual symptoms, or systemic signs [11].

From a treatment standpoint, the priority is balance: minimizing fetal risk while preventing maternal morbidity from migraine and its precipitating factors during pregnancy such as dehydration, hyperemesis, sleep deprivation, and repeated emergency visits. Contemporary obstetric guidelines recommend a stepwise approach: begin with nonpharmacologic measures such as adequate hydration, regular meals, good sleep habits, identification and avoidance of triggers, and relaxation techniques, and add carefully chosen medications only if symptoms persist or become severe [12].

Acetaminophen is commonly used as a first-line acute option; antiemetics may be appropriate when nausea or vomiting is prominent [11, 12]. Nonsteroidal anti-inflammatory drugs require gestational-age caution: the U.S. FDA warns against NSAID use at 20 weeks' gestation or later due to risk of fetal renal dysfunction and oligohydramnios; if use is deemed necessary between 20 and 30 weeks it should be limited to the lowest effective dose for the shortest duration, with consideration of ultrasound monitoring when treatment extends beyond 48 hours [13]. For triptans, the evidence base is larger than for many other migraine-specific agents in pregnancy; systematic review and meta-analytic data report no clear increase in major congenital malformations, while also emphasizing limitations and the need for continued pharmacovigilance [14].

This supports the clinical reality that triptans may be considered for selected patients with disabling attacks not responsive to simpler measures after individualized risk–benefit discussion. Preventive therapy should likewise be individualized; agents with known teratogenicity or inadequate pregnancy data should be avoided, and any preventive option should be started at the lowest dose with careful maternal–fetal monitoring.

Ultimately, migraine in pregnancy should be reframed from a "quality-of-life only" diagnosis to a condition with meaningful implications for maternal safety, obstetric outcomes, and postpartum neurologic risk. A practical, evidence-informed approach includes documenting migraine phenotype (with or without aura), baseline frequency, and medication exposure; screening and managing vascular risk factors and hypertensive disorders; applying a red-flag framework for secondary headache during pregnancy and postpartum; and using a stepwise treatment plan that emphasizes nonpharmacologic care while permitting appropriately selected acute and preventive pharmacotherapy when the benefits outweigh the risks. This integrated approach aligns migraine care with modern ob-

stetric safety priorities and supports healthier pregnancies for a large and often undertreated population.

ETHICAL DECLARATIONS

- **Ethics Approval and Consent to Participate**

  Not required for Editorial articles.

- **Consent for Publication**

  None

- **Availability of Data and Material**

  Not Applicable

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- **Authors' Contributions**

  Taha MA conceived and outlined the article. Taha MA and Mohammed EA wrote the first draft and critically revised the manuscript for important intellectual content. Koçak ÖK managed and formatted the references using EndNote. All authors approved the final version of the manuscript.

- **Peer Review**

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- **Editorial Board Note**

  Mufeed Akram Taha is the Editor of the Kirkuk Journal of Medical Sciences; however, he did not take part in the editorial decision-making process for this manuscript.

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