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Headache in pregnancy:

a brief practical guide

Headaches are a common neurological presentation during pregnancy. Though the majority of headaches pregnant women experience (for example, migraine and tension-type headache) can be managed in primary care, some headaches, especially when associated with other neurological or visual symptoms, require urgent investigation to exclude more sinister causes. This article provides a practical guide to headache management with a focus on when to refer to secondary care and what medication is safe during pregnancy and breastfeeding.

SECONDARY HEADACHES: RED FLAGS AND WHEN TO REFER

Pregnancy is an independent risk factor for secondary headaches due to unique physiological changes that occur, such as hypercoagulability.[1] This can be further exacerbated by nausea, vomiting, and dehydration, particularly in the first trimester. Therefore, preferably, all pregnant women with new-onset or worsening headache should be reviewed face-to-face. This allows for neurological examination, a blood pressure reading, and fundoscopy. Urine should always be dipped for protein. Patients who look systemically unwell or display new focal neurological deficits in the context of new headache should be referred for urgent assessment to secondary care.

Fundoscopic examination and identification of papilloedema, either in the GP surgery or by the optician, is mandatory if raised intracranial pressure is suspected. For example, idiopathic intracranial hypertension, which is characterised by migraine-like headaches and visual disturbance, may develop or worsen in pregnancy and require urgent attention. Some dangerous secondary headaches (for example, sinus thrombosis, pituitary apoplexy, and posterior reversible encephalopathy syndrome) may occur in pregnancy and require specialist imaging to exclude.[2] Pre-eclampsia/eclampsia may often result in headache and is frequently associated with hypertension, proteinuria, deranged liver function tests, and thrombocytopenia. Patients with 'red flags' (Box 1) require urgent referral to secondary care.

PRIMARY HEADACHES: GREEN FLAGS AND WHEN TO BE LESS CONCERNED

Most headaches seen in pregnancy are primary (90% migraine or tension-type headache) and, therefore, not dangerous. The presence of 'green flags' (Box 2) indicates that the headache is less likely to be serious.[3]

SAFE ACUTE PAIN MEDICATIONS DURING PREGNANCY AND POSTPARTUM PERIOD

Paracetamol is safe in pregnancy and breastfeeding, and should be used first line. Triptans (especially sumatriptan), which are used for the acute treatment of migraine, are also considered safe, although should not be trialled for the first time during pregnancy. If triptans are consistently required more than twice a week then preventive medication should be considered. Non-steroidal anti-inflammatory drugs (NSAIDs; for example, ibuprofen) should be avoided in the third trimester because of potential premature closure of the fetal ductus arteriosus (the British Society for Rheumatology recommends use of NSAIDs until 30–32 weeks' gestation), but are safe when breastfeeding. Opiates (for example, codeine) should not be used too frequently, principally because of exacerbation of constipation. Overuse of any acute pain medication may result in medication-overuse headache.[4]

The following anti-emetics may be taken in pregnancy: cyclizine; prochlorperazine; ondansetron; domperidone; and metoclopramide. Prochlorperazine, domperidone, and metoclopramide are safe with breastfeeding. Prochlorperazine and metoclopramide may cause an acute dystonic reaction and prolonged used should be avoided. For a summary of other safe medications refer to Table 1.

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Box 1. Red flags

- Sudden-onset (thunderclap) headache
- Clinical signs of raised intracranial pressure (for example, papilloedema)
- Neurological deficits (for example, confusion, reduced level of consciousness, seizure, and limb weakness)
- New visual symptoms (for example, double vision and deteriorating vision)
- Associated pregnancy risk (for example, severe vomiting and dehydration in first trimester, pre-eclampsia, or postnatal—all increase coagulability)
- Systemically unwell (for example, fever or meningism)
- Recent head or neck injury

Box 2. Green flags

- Presence of current headache for many years (for example, migraine)
- Presence of headache-free days
- Headache occurred and stopped >1 week ago

SAFE MIGRAINE PREVENTIVES DURING PREGNANCY AND POSTPARTUM PERIOD

Propranolol and amitriptyline are considered safe in pregnancy and breastfeeding. Propranolol should be avoided in women with asthma and is associated with a small risk of fetal growth restriction. Therefore, growth scan surveillance is recommended and a discussion of induction of labour around 39 weeks had to avoid theoretical risk of late-term stillbirth.

Pregnant women should avoid other commonly prescribed migraine preventives, including: candesartan, topiramate, pizotifen, and sodium valproate. Candesartan can be used in breastfeeding but used with caution in the early newborn or preterm infants because of theoretical risk of hypotension. Topiramate is safe in breastfeeding, though there have been reports of infant diarrhoea, irritability, and sedation. Though not licensed, botulinum toxin (botox) is considered safe in pregnancy. New therapies that target calcitonin gene-related peptide pathways (for example, fremanezumab) should be avoided.

OTHER TREATMENT OPTIONS

Though migraine improves in two-thirds of pregnant women, some remain symptomatic and require alternative treatments.[5] Acupuncture is well tolerated and may be useful. Techniques such as mindfulness and meditation, biofeedback, and cognitive behavioural therapy may be considered in some patients with chronic migraine. Though not available on the NHS, some patients may benefit from the Cefaly supraorbital nerve stimulator. If the patient remains very symptomatic, consider urgent referral to the local headache or pain team for a greater occipital nerve block, which often results in several months of reduced headache.

OTHER COMMON PRIMARY HEADACHE DISORDERS

Tension-type headache is milder than migraine and often only requires simple analgesics. Cluster headache and other trigeminal neuralgias are considerably rarer and more severe than migraine, and best managed by the local neurology or headache team.

CONCLUSION

Pregnancy is a risk factor for dangerous secondary headaches and identification of red flags remains important when deciding whether to refer urgently to secondary care. In many cases, migraine and tension-type headache can be managed in primary care with the knowledge of what medications are considered safe. When prescribing any medications in pregnancy or during breastfeeding, potential risks should always be weighed up against benefits.

Table 1. Safe acute headache and migraine preventive medication in pregnancy and breastfeeding

Medication	Pregnancy	Breastfeeding
Acute medication		
Paracetamol	✓	✓
NSAIDs	✓ Stop by 30 weeks	✓
Aspirin (600–900 mg)	x	✓
Opiates	✓ Use sparingly	✓ Use sparingly
Triptans (for example, sumatriptan)	✓	✓
Anti-emetics		
Cyclizine	✓	x
Prochlorperazine	✓	✓ Use sparingly
Ondansetron	✓	x
Domperidone	✓	✓
Metoclopramide	✓	✓ Use sparingly
Migraine preventives		
Amitriptyline	✓	✓
Propranolol	✓	✓
Candesartan	x	✓ With caution in early newborns
Topiramate	x	✓
Pizotifen	x	x

NSAID = non-steroidal anti-inflammatory drug.

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Benjamin Wakerley is founder of Ceftronics Limited.

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REFERENCES

1. O'Neal MA. Headaches complicating pregnancy and the postpartum period. *Pract Neurol* 2017; **17(3):** 191–202.
2. Jamieson DG, McVige JW. Imaging of neurologic disorders in pregnancy. *Neurol Clin* 2020; **38(1):** 37–64.
3. Pohl H, Do TP, García-Azorín D, *et al.* Green flags and headache: a concept study using the Delphi method. *Headache* 2021; **61(2):** 300–309.
4. Wakerley BR. Medication-overuse headache. *Pract Neurol* 2019; **19(5):** 399–403.
5. Wells RE, Beuthin J, Granetzke L. Complementary and integrative medicine for episodic migraine: an update of evidence from the last 3 years. *Curr Pain Headache Rep* 2019; **23(2):** 10.