

What is the most suitable treatment for acne in a person with acute porphyria?

Background

There are two main types of porphyria:

- acute (mainly affects the nervous system and people have 'acute attacks')
- non-acute (mainly affects the skin) (1)

This advice is for people with acute porphyria (acute intermittent porphyria, aminolevulinate (ALA) dehydratase deficiency porphyria, hereditary coproporphyrin and variegate porphyria) who can have painful acute attacks, sometimes caused by taking certain medicines (1). The UK Porphyria Medicines Information Service (UKPMIS) publishes a [list of medicines](#) that are safe for people with acute porphyria to take (2). People with non-acute porphyria can take most medicines safely. The Q&A: '[What are the restrictions on prescribing for patients with non-acute porphyria?](#)' provides further information (3).

In people with porphyria there is a problem with making haem (4). Haem is part of the haemoglobin in your blood that carries oxygen from your lungs to other parts of the body. Attacks occur in people with acute porphyria when events (e.g. taking certain medicines) mean that more haem has to be made in the liver, or when ALAS [5-aminolaevulinic acid synthase] 1, an enzyme (chemical catalyst) involved early in the haem making process is 'switched on' (5). To be broken down, absorbed and used, some medicines need enzymes known as cytochrome P450 enzymes, which contain haem. Most of the medicines that cause acute attacks in porphyria increase the need for haem in the liver by 'switching on' cytochrome P450 enzyme activity (5).

Medicines taken by mouth (oral) and those applied to the skin (topical) are commonly prescribed for acne. The Q&A '[Are topical medicines safe in people with porphyria?](#)' (6) provides further information on the safety of topical preparations in acute porphyria.

Answer

Because the body does not absorb topical medicines as well as oral ones, topical medicines are usually thought to be safer than oral medicines in people with acute porphyria, provided they are not applied to broken skin. In acne, however, the skin is more likely to be broken so more of the topical medicine may be absorbed than if the skin was intact.

See the table below for information on the safety in acute porphyria of various common acne medicines:

Table 1: Safety in acute porphyria of medicines prescribed for acne (7, 8)

First Choice	Alternatives	Use with caution
Topical benzoyl peroxide	Topical adapalene Topical tretinoin Topical isotretinoin	Topical azelaic acid
Topical clindamycin	Topical erythromycin (avoid oral use)	
Oral doxycycline	Oral tetracycline Oral lymecycline	

First choice: no precautions necessary

Alternatives: use when first choice is not tolerated or ineffective; no additional precautions are necessary

Use with caution: only consider where first and second choices are ineffective or not tolerated. Justify the need for the drug. Precautions are warranted in vulnerable patients - seek advice from a porphyria expert.

The National Institute for Health and Care Excellence (NICE) [Clinical Knowledge Summary \(CKS\) on Acne Vulgaris](#) (9) provides management guidelines for mild-to-moderate acne, moderate acne not responding to topical treatment and severe acne, but not all of the treatments mentioned are suitable for people with acute porphyria. For instance, combined oral contraceptives are commonly prescribed for acne and oral erythromycin is sometimes used, but oestrogens progestogens and oral erythromycin are generally considered to be unsafe in acute porphyria (7, 8, 10).

Various factors including a person's age, sex and history of previous drug-induced or other acute attacks are important in determining the most suitable treatment for a person with acute porphyria and acne; however the following suggestions for prescribing may serve as a guide. This information has been compiled using the NICE CKS summary (9) together with current understanding of medication safety in porphyria (7, 8):

Table 2. Management options for the treatment of acne for a person with an acute form of porphyria (9, 11)

<p>Mild (predominantly blackheads and whiteheads) to moderate (predominantly papules and pustules) acne</p>
<p>Topical retinoid (adapalene, tretinoin or isotretinoin), alone or with topical benzoyl peroxide OR Topical clindamycin or erythromycin (avoid oral use) combined with topical benzoyl peroxide</p>
<p>Moderate acne not responding to topical treatment</p>
<p>Oral lymecycline or oral doxycycline PLUS: Topical retinoid (adapalene, tretinoin or isotretinoin) or benzoyl peroxide If no improvement after 3 months/acne worsens/side effects are intolerable, switch to other oral antibiotic (oral lymecycline/oral doxycycline, depending on antibiotic used initially) for one further course.</p>
<p>Severe acne (numerous papules and pustules, often with numerous blackheads and whiteheads, with large, nodular lesions)</p>
<p>Oral isotretinoin is an effective option for the treatment of severe acne. This medicine should be started by a specialist. Oral isotretinoin has been classified as ‘possibly porphyrinogenic’, meaning that there is a potential risk of the medicine causing an acute attack. This risk appears to be theoretical with isotretinoin but there are only a few reports of safe use with this medicine.</p>

Completely avoiding drugs not known to be safe in acute porphyria when treating acne is an approach likely to prove too restrictive. Bear in mind the risk profile of individual patients when prescribing in porphyria. Collaboration with a specialist porphyria information centre and/or a specialist porphyria clinician is recommended.

Summary

Topical (applied to the skin) treatments for acne are considered to be safer than oral treatments in people with an acute form of porphyria, provided they are applied to intact skin.

Topical retinoids, benzoyl peroxide and topical antibiotic creams are known to be safe in acute porphyria for people with mild and moderate acne.

Oral erythromycin and oral contraceptives (oestrogens and progestogens) are known to be porphyrinogenic (cause acute attacks) and should be avoided in people with an acute form of porphyria who require treatment for acne.

Limitations

The optimal treatment for an individual with acute porphyria is dependent on various factors, including age, sex, and history of drug-induced or other acute porphyria attacks. For further information on the safety of medicines in acute porphyria, and a [list of medicines that are safe in the acute porphyrias](#) contact the UK Porphyria Medicines Information Service (UKPMIS); Tel: 029 2074 2251 or 029 2074 2979, or at: <https://www.wmic.wales.nhs.uk/specialist-services/drugs-in-porphyria/>.

References

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Search strategy

Embase: (exp porphyria/ AND exp acne/)

Medline: (exp Porphyrias/ AND Acne Vulgaris/)

IDIS (for previous version): Disease(s): ("DISORDER, PORPHYRIN METAB 277.1" and "ACNE 706.0")

Martindale: (Porphyria (looked at hits for isotretinoin, benzoyl peroxide, oxytetracycline, lymecycline, adapalene, clindamycin, tretinoin, azelaic acid, erythromycin, nicotinic acid)

In-house database/ resources: (Porphyria AND acne)

Internet Search: (Google; Porphyria acne)

NHS Evidence: (Porphyria AND acne)

SPS: (Porphyria)

NAPOS: isotretinoin (oral/topical); topical: benzoyl peroxide, azelaic acid, clindamycin, erythromycin adapalene, tretinoin, erythromycin, erythromycin with zinc; oral: oxytetracycline, tetracycline, doxycycline, lymecycline, trimethoprim, erythromycin, nicotinamide.

CKS: acne

[Mae'r daflen hon hefyd ar gael yn Gymraeg.](#) This leaflet is also available in Welsh.