Mirvaso: first treatment for erythema in rosacea

Steve Chaplin BPharm, MSc and Noreen Cowley MRCP

Mirvaso is the first selective alpha_2 agonist to be licensed in the UK for the management of the erythema of rosacea. Here we present the clinical data relating to its efficacy and adverse events and Dr Noreen Cowley comments on its place in therapy.

**KEY POINTS**

- Brimonidine gel (Mirvaso) is licensed for the treatment of erythema associated with rosacea in adults
- The recommended dose is up to 1g once daily for as long as facial erythema is present; a 30g tube costs £33.69
- After administration, improvement is evident after 30 minutes
- In clinical trials, with assessment lasting for 12 hours after application, about 40 per cent of patients were satisfied or very satisfied with the efficacy (vs about 20 per cent with vehicle alone)
- The most frequent adverse effects are flushing, erythema, pruritus and a burning sensation
- It appears to be effective in reducing non-transient facial redness in patients with rosacea, and as such provides an unmet medical; however, it does not replace the need for other rosacea therapies

**Steve Chaplin**

The management of erythema associated with rosacea in primary care has relied on lifestyle advice, cosmetic camouflage or referral to specialist care. A recent US guideline recommended skin care, photoprotection and a topical alpha agonist for diffuse, persistent and distressing erythema. Brimonidine (Mirvaso), a selective alpha_2 agonist that causes cutaneous vasoconstriction, is the first such agent to be licensed in the UK for this indication.

**Brimonidine gel**

Brimonidine is formulated as 3.3mg/g gel and licensed for the symptomatic treatment of facial erythema of rosacea in adults. The recommended dose is up to 1g (five pea-sized amounts applied to the forehead, chin, nose and each cheek) once daily for as long as facial erythema is present. Application to the eyes, eyelids, lips, mouth and membrane of the inner nose should be avoided and hands should be washed after application. Other topical drugs and cosmetics may be applied after the gel has dried.

Brimonidine gel should not be used during treatment with an MAOI or a tricyclic or tetracyclic antidepressant and it should be used cautiously in patients with vascular dermatological conditions or cardiovascular disorders (a full list is provided in the SPC).

**Clinical trials**

Brimonidine gel has been evaluated in two four-week randomised vehicle-controlled trials of similar design in 553 adults with moderate or severe facial erythema (defined as a clinical diagnosis of facial rosacea with moderate or severe erythema, excluding specific forms such as rosacea fulminans and rosacea-like disorders such as acute lupus erythematosus). The primary end-point was the change in a composite score of clinicians’ and the patients’ assessments of erythema based on overall appearance, whitening, telangiectasia and inflammatory lesion count.

Brimonidine was significantly more effective than the vehicle alone when rated on days 1, 15 and 29. The response rate was approximately doubled by active treatment, on day 29 reaching 23 per cent after six hours (vs 10 per cent with vehicle) and 19 per cent after 12 hours (vs 11 per cent) in one study. A lesser response was achieved by 50–70 per cent with brimonidine and 30–40 per cent with vehicle alone.

Improvement was evident 30 minutes after application. The proportion of patients who were satisfied or very satisfied with their appearance on day 29 was 36–43 per cent compared with about 20...
per cent with the vehicle. The proportion of days on which patients were satisfied or very satisfied with their appearance was about 40 per cent (vs 14–20 per cent with vehicle). There was no tachyphylaxis after 28 days’ use. 2

**Adverse effects**

In clinical trials, flushing, erythema, pruritus and a burning sensation were reported by 1–3 per cent of patients treated with brimonidine gel compared with 0–2 per cent using the vehicle. Cases of rebound erythema 6–12 hours after applying the gel have been reported but not after discontinuing treatment. 3

**References**


**Declaration of interests**

Steve Chaplin none to declare.

Steve Chaplin is a pharmacist who specialises in writing on therapeutics.

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**Place in therapy**

**Noreen Cowley MRCP**

While there are many effective medications approved for the treatment of the inflammatory lesions of rosacea, until recently, there had been none directly targeting the erythema of rosacea. Visible facial redness, common to all rosacea subtypes, is a source of daily frustration and social embarrassment for those affected. Although the aetiology of rosacea is not entirely clear, dysregulation in the cutaneous vasomotor responses is thought to play a significant role, leading to abnormal dilatation of the facial blood vessels with resulting erythema. 1

Brimonidine works by constricting otherwise dilated facial blood vessels, reducing the appearance of redness. Approval for brimonidine as a therapy for non-transient erythema of rosacea was largely based on two randomised, vehicle controlled double-blind trials. 2

In both studies, brimonidine was shown to be more effective in reducing erythema in rosacea compared to the control gel. The reduction in erythema was observed after 30 minutes, with peak activity at 8–10 hours. Tachyphylaxis was not seen, and in a subsequent year-long, open-labelled post marketing study, reduction in erythema was maintained until the end of the treatment at month 12. 3 In the latter, quality-of-life measures were shown to have improved at three months of treatment. Although these studies were well designed and conducted, measurements of improvement in erythema were subjective, and patients with mild erythema were not included.

Side-effects were cutaneous and experienced by 9.5–11.6 per cent in the brimonidine group. These included erythema, flushing, facial skin burning sensation and contact dermatitis. The incidence of related adverse effects however decreased over the course of the one-year study. 4,5 Significantly, the authors reported no rebound or worsening erythema in the four-week post treatment follow-up period study. Concernedly, however, case reports of rebound erythema occurring in patients using brimonidine are appearing in the literature. 6,7 In the USA, where brimonidine has been available for longer, negative reports from online forums are at odds with the comparatively low rate of adverse effects in the formal studies.

Brimonidine appears to be effective in reducing non-transient facial redness in patients with rosacea, and as such provides an unmet medical need in the management of erythema in patients with rosacea. However, it is not effective in all patients and needs to be tailored to the individual patient’s needs. The adverse effects of erythema – flushing and burning – while not medically serious, may be distressing for patients with rosacea who seek medical intervention for these very symptoms. Patients should be counselled on the possible effects and be advised that brimonidine is a temporary measure only to address redness. It does not provide a cure for their rosacea, or influence the progress of their disease, and does not replace the need for other rosacea therapies.

Experience in the larger population with the more widespread use of brimonidine is needed to determine how prevalent side-effects are, which individual patients will benefit, and where it best fits into the overall management of rosacea.

**References**


**Declaration of interests**

Dr Cowley has none to declare.

Dr Cowley is consultant in dermatology at St Helier Hospital, Carshalton.