

MENTHODERM®: HELPING TO MANAGE THAT ITCH

Linzi Malcolm

This product review highlights a recently developed formulation, MenthoderM®, an aqueous cream containing menthol, which is free from sodium lauryl sulfate (SLS) and available in strengths of 0.5%, 1% and 2% menthol. Therapy to help patients manage heated, dry, irritated and itchy skin is supported by NICE guidelines¹ and guidelines from the British Association of Dermatologists.² Good practice in prescribing should be guided by clinical need and informed patient choice, based on whether the itch has an underlying cause which itself is treatable, or if there is no identifiable underlying cause. Healthcare professionals treating patients with itchy skin and advising patients should aim to understand the choices available and use this knowledge in helping the patient choose the right product for their condition.

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The problem of pruritus

Itchy skin, otherwise known as 'pruritus' can be both acute (less than six weeks) and chronic (lasting more than six weeks), with the latter proving to be a common problem in a significant cohort of patients.³ Pruritus can be localised to certain areas of the body (e.g. scalp, genitals) or generalised, affecting the entire skin surface. The incidence appears to increase with age and is particularly common in elderly patients, as the aging process depletes the skin of water.⁴

A complex condition, chronic pruritus can have multiple causes including common dermatological conditions, e.g. atopic eczema, contact dermatitis and psoriasis.⁵ Pruritus may also be a symptom of underlying pathology, e.g. chronic kidney disease, hepatic disease, thyroid function, blood disorders and malignancy.² Neuropathic itch can also be experienced, such as nostalgia paresthetica and brachioradial pruritus (itch of the arms thought to be linked to spinal-nerves).³ Psychogenic

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causes include anxiety, depression and delusional infestation.⁶ Pruritus may also be due to certain medications, e.g. opioids, or idiopathic where there is no identifiable cause.²

Whatever the cause, we know this is a problem which significantly impacts a patient's quality of life and can lead to poor sleep, low mood and associated behaviours which may make scratching worse.³

Mechanisms involved

Pruritus involves a number of mediators found in the skin which are involved in the itch sensation. Both histamine and non-histamine triggered neurons may be at play.³ The itch signal is transmitted from these neurons via very specific C-nerve fibres in the skin to other neurons in the brain. The cerebral neurons are responsible for interpretation of sensation, evaluative

processes and memory of itch. This mechanism sometimes includes pain sensation.⁷ In some patients the itch fibres are extremely sensitive to stimuli and can become overactive. This can result in prolonged and incessant itch.⁸

Management of pruritus

The management of pruritus will ultimately depend on the underlying cause, and clinical assessment should include a detailed medical and skin history (including medications, prescribed and OTC), physical examination of the patient, and appropriate blood investigations such as standard pruritus screen (FBC, ferritin, CRP, U&E, creatinine, LFT, bone, TFT and glucose), anti-mitochondrial antibody (to rule out primary biliary cirrhosis), urinalysis, and a CXR to help exclude lymphoma and bronchial carcinoma.

If itch has a systemic underlying cause (for example hyperthyroidism, iron deficiency anaemia, or Hodgkin's lymphoma) the itching usually improves as the primary condition resolves or is managed.¹

Topical menthol is a treatment found to be successful in reducing itch, as nerve fibres which transmit the cold sensation are stimulated, with the menthol acting as a coolant on the skin

There may or may not be evident skin changes, and often the origin of the problem is unclear. For this, there are several recommended topical treatments.

Emollients are considered first line and frequently prescribed in the management of pruritus.²

The use of emollients with the addition of the active ingredient menthol is based on expert opinion in a review article.¹ Topical menthol is a treatment found to be successful in reducing itch, as nerve fibres which transmit the cold sensation are stimulated, with the menthol acting as a coolant on the skin.

Recent guidelines for the management of pruritus and clinical experience suggest use of menthol at low concentrations (1-5%) is effective.² It is also considered safe in pregnancy which is useful, as pruritus can be a common complaint for expectant mothers.⁹

Other topical treatments which are still sometimes, or have been, prescribed in the past are detailed below.

In the past, topical capsaicin has been considered an antipruritic agent but is not currently recommended in management of generalised pruritus with an unknown cause.

Topical doxepin (an antihistamine) has found to be successful in various trials but there are concerns over allergic contact dermatitis and toxicity.²

Topical anaesthetics such as lidocaine formulations have been reported to be successful, although their benefits appear to be more short-term and limited to specific areas such as ano-genital itch. Their long-term safety is also in question with limited data to support their use.¹⁰

Topical corticosteroids, with their anti-inflammatory properties, can be more useful when secondary skin changes are present and are deemed useful by clinicians based more on their experience and not objective evidence.

What is menthol?

Menthol is a naturally occurring alcohol compound derived from plants, such as peppermint. It has a distinctive smell and flavour and has been used for medicinal purposes for hundreds, if not thousands, of years. Today, because of worldwide demand, menthol has to be synthesized. It is used in copious amounts for products like oral hygiene products, chewing gum, cosmetics and flavourings. Medicinally, it is commonly used in indigestion remedies, cold remedies and treatments for musculoskeletal pain. Given its antipruritic properties, its use in dermatology is also prevalent.

How does menthol work to treat itchy and heated skin?

Menthol can help treat itchy, heated, irritated dry skin for patients experiencing pruritus, and also for skin suffering from seasonal conditions.

We know that menthol elicits a cooling sensation on the skin when applied topically. Until fairly recently, the mechanism of its action was unclear.

In 2002, McKemy et al and Peier et al recognised that menthol works by activating a thermo-receptor (or ion channel) called 'transient receptor potential cation channel sub family member 8' or TRPM8.¹¹

This receptor TRPM8 is stimulated by thermal stimuli in the cool to cold temperature range of 8-28 degrees Centigrade, and belongs to a family of excitatory ion channels responsible for thermo-sensation.¹¹

With this in mind, the explicit action by which menthol reduces pruritus continues to cause clinical and scientific debate. Some clinicians and patients believe that itch perception is simply reduced in response to feeling a cooling sensation on their skin, similar to when some patients report cold showers help their itch.

It has also been postulated that menthol can interfere with certain opioid receptors which reduces pruritus and is another feasible explanation.¹¹

There is a limited evidence base as to what the optimal concentration of topical menthol is required for managing pruritus. Concentrations of 1-5% are currently recommended.¹¹

Yosipovitch et al suggests low doses such as this are safe and tolerable for the patient, whilst concentrations above 10% have been found to be no more effective.¹¹

Where else is menthol used topically?

Pain: Menthol can be found in a variety of topical pain relief medications because of its counter-irritant and local anaesthetic properties. In concentrations of 1% or less, menthol depresses cutaneous sensory receptors, while at

concentrations between 1.25% and 16%, stimulates sensory receptors and thus acts as a counter-irritant.¹¹

Local anaesthetic: In a recent study, Haeseler et al concluded that menthol blocks voltage-gated neuronal and skeletal muscle sodium channels in a concentration-dependent manner in resting and inactivated states. Furthermore, the authors suggested that this effect provided a molecular basis for the antinociceptive and local anaesthetic properties of this compound.¹¹

Antibacterial and antifungal: Menthol also has antibacterial and antifungal activity. Both peppermint oil and menthol have been shown to be active against a variety of microorganisms, including both gram-positive and -negative bacteria, as well as fungi. The toxic effects on the membrane structure and function microorganisms have generally been used to explain the antimicrobial activity of peppermint oil and menthol, although the exact mechanism of action is not fully understood.¹¹

Menthoderm®

Menthoderm® is a menthol in aqueous cream, which does not contain sodium lauryl sulfate (SLS) and is available in strengths of 0.5%, 1.0% & 2%.

The addition of Menthol helps soothe and cool the skin of patients experiencing heated, dry and irritated itchy skin.

In 2017, Derma UK introduced three pack options, for each strength – 100g tubes, 500g pots and 500g pumps. The 100g tubes are available in many pharmacies and are ideal for homecare and daily use. The 500g airless pump dispensers dispense 98% of the product and are best used in situations where cross contamination is a risk. The 500g pots are ideal for patients who need to apply large amounts of the product or who may have manual dexterity issues with a pump dispenser.

Rather than just one preservative, Menthoderm® is unique as it has been formulated to contain two preservatives – phenoxyethanol and also undecylenic acid. These two preservatives help

provide double the protection against cross contamination, and is ideal for those patients who may have compromised hygiene in their home environment.

The additional preservative, undecylenic acid, is a derivative of castor oil, and helps to inhibit the growth and reproduction of fungal cells.¹²

Undecylenic acid and its calcium and zinc salts also help to cleanse the skin and prevent odour by destroying or inhibiting the growth of microorganisms.¹²

Menthoderm® is available on prescription and listed on the NHSBSA dm+d database, has a lower cost than the Drug Tariff Menthol in aqueous cream¹² and is available from many pharmacies.

The well-established safety profile for menthol makes Menthoderm® an even more attractive choice for healthcare professionals who are seeking the best outcomes for their patients when treating heated and dry itchy skin

Samples

Derma UK provide a healthcare professional sample scheme in order to promote patient choice and encourage compliance with the prescribed treatment.

10g Patient Tester Pack Sachets, available in 0.5%, 1% and 2% strengths, can be requested by the healthcare professional and then given to the patient. This activity offers a good patient experience, supports patient choice and provides enough product for the patient to establish an opinion on their preferences. Healthcare professional samples are available to request via <https://dermauk.co.uk/team/>

Conclusion

Given a review of the literature, Menthoderm® appears to be a useful adjunct for the management of patients experiencing pruritus.

Menthol works as an antipruritic, analgesic, local anaesthetic, antiseptic and cooling preparation. Although its precise action in alleviating itch is complex, there is evidence to support menthol's action on the TRPM8 receptor to elicit a cooling sensation on the skin which helps with the symptom of itch. In addition to the above, the well-established safety profile for menthol makes Menthoderm® an even more attractive choice for healthcare professionals who are seeking the best outcomes for their patients when treating heated and dry itchy skin. **DN**

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