

## Cost effective emollients with no, or low paraffin content

In November 2007 the National Patient Safety Agency (NPSA) issued an alert to all healthcare staff involved in the prescribing, dispensing or administration of paraffin based skin products. The NPSA highlighted that the topical administration of paraffin based skin-products, for example, emulsifying ointment or 50% liquid paraffin + 50% white soft paraffin (WSP) ointment have a potential fire risk as bandages, dressings and clothing that come in to contact with them are easily ignited with a naked flame or cigarette. The risk is greater when these preparations are applied to large areas of the body and clothing or dressings become soaked with the ointment. Patients should be told to keep away from fire or flames, and not to smoke when using these preparations.<sup>1</sup>

This bulletin aims to highlight emollient products which have low or no paraffin content to support healthcare professionals who are optimising emollient treatment in line with the NPSA alert and for patients on oxygen therapy. Before prescribing, clinicians should weigh up the risks vs. benefits of prescribing.

### Recommendations

- Many CCGs have formularies with a range of preferred emollient products. Formularies should aim to have at least 1 product which:
  - » takes in to account the warnings in the NPSA alert - use cream preparations with the smallest paraffin content possible, rather than an ointment.
  - » is suitable for patients using medical oxygen therapy - use a non-paraffin based emollient.

### Background

Following a patient safety incident, the NPSA<sup>1</sup> commissioned the Health and Safety Executive to undertake fire hazard testing with WSP at concentrations of over 50% on a variety of bandages, dressings and clothing. The results showed the ability to reproduce the fire hazard in a controlled environment. Paraffin products are also constituents in some commonly prescribed 'specials' creams and ointment, for example emulsifying ointment is often used as a diluent to lower the strength of a ready prepared ointment. The following commonly prescribed products contain WSP at concentrations of 50% or more:

Product	Concentration of WSP
White Soft Paraffin	100%
Zinc ointment BP	72.25%
Diprobase ointment	95%
Emulsifying ointment	50%
Liquid paraffin 50%/WSP 50% ointment	50%
Emollient aerosol spray	50%
Zinc and salicylic acid paste BP	50%

The evidence currently only relates to WSP and there is no data to show that there is a fire hazard risk with preparations containing concentrations of WSP lower than 50%, however, the NPSA took the view that this risk could apply to any paraffin 'based' product. In this respect the NPSA guidance also applies to the products on the following page.

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- Dithranol Ointment = contains yellow soft paraffin
- Epaderm = contains emulsifying wax, liquid paraffin and yellow soft paraffin
- Hydromol Ointment = contains emulsifying wax, liquid paraffin and yellow soft paraffin
- Imuderm Liquid = contains liquid paraffin

All patients and their families should be warned regarding the following risks:

- **The risk of fire should be considered when using large quantities of any paraffin-based emollient (e.g. application of 100g or more at once or over a short period of time).**
- **Bedding and clothing should be washed regularly to minimise the build up of impregnated paraffin.**
- **Patients should be told to keep away from open or gas fires or hobs and naked flames, including candles etc. and not to smoke when using these paraffin containing preparations.**

Emollients are available as creams, ointments and lotions. Creams contain a mixture of fat and water. Ointments have a high fat content and can be very greasy. Lotions contain more water and less fat than creams, but are not very effective at moisturising the skin.<sup>2</sup>

To implement the NPSA alert, patients who require large quantities of emollient (100g or more) should use a water based product (e.g. cream or lotion) rather than a paraffin based one (e.g. ointment) to reduce the fire risk. The cream and lotion emollients listed in the BNF contain varying amounts of paraffin.<sup>4</sup>

Patients who use nasal cannulae (prongs) for oxygen administration can apply a water based moisturiser (such as KY jelly) to the lips and nose to prevent drying and cracking. Paraffin based products are not recommended as they can plug air holes and are a fire hazard.<sup>5</sup>

Medical oxygen is non-flammable but strongly supports combustion (including some materials that do not normally burn in air). It is highly dangerous in the presence of oils, greases, tarry substances and many plastics due to the risk of spontaneous combustion with high pressure gases. Therefore patients on medical oxygen who require an emollient should not use any paraffin based product. Naked flames and smoking are prohibited when medical oxygen is in use.<sup>3</sup>

### Price of emollients with no paraffin content

Product	Price for 100g (500g if available)
Calmurid cream	£8.83 (£34)
Eumocream (Eumobase)*	£7.13
Neutrogena dermatological cream*	£6.32
Nutraplus (10% urea) cream	£4.37

\*Not listed in the BNF 66, September 2013

Info from BNF 66, September 2013 and Chemist & Druggist price list January 2014. Products are listed in alphabetical order and inclusion in the table is not an endorsement for use as a general first line emollient.

## Cost effective preparations with low paraffin content

Product	Paraffin content		Price for 500g
Aquamax cream	light liquid paraffin 8% white soft paraffin 20%	28%	£3.99
E45 cream	light liquid paraffin 12.6% white soft paraffin 14.5%	27.1%	£4.89
E45 lotion	light liquid paraffin 4% white soft paraffin 10%	14%	£4.50 (500ml)
Oilatum cream & Oilatum Junior cream	light liquid paraffin 6% white soft paraffin 15%	21%	£4.99
ZeroAQS cream	liquid paraffin 6% white soft paraffin 15%	21%	£3.29
Zerocream cream	liquid paraffin 12.6% white soft paraffin 14.5%	27.1%	£4.08

Info from BNF 66, September 2013. Products are listed in alphabetical order and inclusion in the table is not an endorsement for use as a general first line emollient.

## Summary

Paraffin based products are effective emollients. Many CCGs have formularies with a range of preferred emollient products. Formularies should aim to have at least 1 product which takes into account the warnings in the NPSA alert and an emollient suitable for patients using medical oxygen therapy.

## References

1. NPSA. Rapid Response Report 4. Fire hazard with paraffin-based skin products. November 2007 <http://www.nrls.npsa.nhs.uk/resources/?EntryId45=59876>
2. National Eczema Society. Emollients factsheet, 2013 <http://www.eczema.org/documents/240>
3. Medical Gas Data Sheet (MGDS). Medical oxygen (liquid). BOC, Date of renewal: 21/07/1992. [http://www.boconline.co.uk/internet.lg.lg.gbr/en/images/medical\\_liquid\\_oxygen410\\_55834.pdf](http://www.boconline.co.uk/internet.lg.lg.gbr/en/images/medical_liquid_oxygen410_55834.pdf)
4. Joint Formulary Committee. British National Formulary (online) London: BMJ Group and Pharmaceutical Press; September 2013. Accessed 25/11/13 via <http://www.medicinescomplete.com>
5. NHS Birmingham East and North & Heart of England NHS Foundation Trust. Using oxygen at home. A patient and carers guide. November 2011 <http://www.nhs.uk/Conditions/home-oxygen/Documents/Oxygen%20leaflet%20printer%20friendly.pdf>

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