



Photonet

National Managed Clinical Network for Phototherapy in Scotland

Guidance for Dermatology Ultraviolet Phototherapy and Photochemotherapy for Children*

NOTE

This guideline is not intended to be construed or to serve as a standard of care. Standards of care are determined based on all clinical data available for an individual case and are subject to change as scientific knowledge and technology advance and patterns of care evolve. Adherence to guideline recommendations will not ensure a successful outcome in every case, nor should they be construed as including all proper methods of care or excluding other acceptable methods of care aimed at the same results. The ultimate judgement must be made by the appropriate healthcare professional(s) responsible for clinical decisions regarding a particular clinical procedure or treatment plan. This judgement should only be arrived at following discussion of the options with the patient, covering the diagnostic and treatment choices available. It is advised, however, that significant departures from the national guideline or any local guidelines derived from it should be fully documented in the patient's case notes at the time the relevant decision is taken.

Background

Skin conditions requiring ultraviolet phototherapy or photochemotherapy in adults can also affect children. Ultraviolet phototherapy and photochemotherapy for children has been in regular use for over 100 years. There is no evidence that children are at greater risk of serious side effects than adults.

An issue that does require consideration when starting ultraviolet photochemotherapy, for what could turn out to be a recurring condition for many years (such as psoriasis or atopic eczema), is that with PUVA there is a skin cancer risk which is related to cumulative number of exposures; thus, those starting PUVA at a young age may sometimes end up with a high lifetime cumulative number of exposures. This is less of an issue with narrowband ultraviolet B (UVB) as there is so far no evidence of any skin cancer risk associated with this treatment in humans.

Nevertheless, with sufficient follow-up it seems plausible that high enough cumulative exposures might turn out eventually to be associated with an increased risk of certain skin cancers. With all treatment interventions we have to consider the likely benefits and risks. Fortunately, PUVA is rarely required in childhood, but is sometimes still appropriate, particularly if the alternatives are treatments that carry much greater adverse effect risks such as systemic immunosuppressants.

Issues to consider

Apart from consideration of potentially high cumulative exposures being required in a lifetime, another precaution regarding PUVA in childhood is that relating to eye protection. This is especially important because the immature lens in a young child can allow some ultraviolet A to reach the retina, raising a theoretical concern about potential for retinal, not just lens, toxicity if PUVA is given to a young child who might not fully comply with eye protection advice. The predominant phototherapy for children is narrowband ultraviolet B (NB-UVB) and the rest of this document concerns this form of ultraviolet phototherapy.

The main issues particular to treating children are that certain young children will not always fully understand the treatment and the importance of some of the advised precautions. In particular, it is important that children and their parents know the importance of advised eye protection while they are in the NB-UVB treatment cubicle. This is because of the risk of a painful keratitis (inflammation of cornea) which could occur with only a few seconds of unprotected open eye exposure during a treatment.

Eye protection means either goggles or keeping eyelids firmly closed throughout each treatment; the latter requires that the child is mature enough for phototherapists

and parents to be confident that they will follow this advice - relying on closure of eyes is sometimes appropriate, particularly in the treatment of atopic eczema as this disease often involves the eyelids.

Suggestions to consider when treating children

Some children are apprehensive about going into the ultraviolet phototherapy cubicle. This anxiety can be reduced by discussion about the treatment, showing the cubicle before the day when the child is expected to enter the cubicle, discussion about the cubicle in language that seems appropriate for the individual child (for example, sometimes, pointing out the similarities between the cubicle and a “tardis”).

If the child is apprehensive, it is often useful on the first formal visit to the phototherapy unit to let them stand in the unit with the door open and the lamps not turned on, before then progressing, either at that visit or at a later visit to standing in the cubicle with the door closed, with a parent observing through the “peep hole”, and only when the child is confident progressing to treating with the lamps turned on.

Some children remain very anxious and treatment in an ultraviolet phototherapy cubicle proves not to be appropriate for them. If ultraviolet phototherapy is otherwise still strongly indicated then sometimes treating with a single panel “home phototherapy” unit, placed in a hospital department, can sometimes work as the child does not feel enclosed, and a parent, with appropriate photoprotection, can stay next to the child without any barrier.

When practicable, in a big enough unit with enough children being treated, it can be useful to “set aside” certain periods when children and not adults are treated. Facilities to play music in a cubicle such as systems that a child can insert his/her own CD, or other music storage device, can for some make having phototherapy less frightening.

For babies and very young children, and sometimes for less young children who are very apprehensive, another approach is to have a parent (photoprotected with clothing, gloves and face shield) going into the treatment cubicle with the child. For babies the parent can hold the child whereas for older children the parent can stand behind the child ensuring that the areas of the child’s skin directly exposed remain approximately the same at each treatment visit.