PUVA

PUVA stands for psoralen combined with ultraviolet A (UVA) treatment. Psoralens are found in plants and can be sensitised when taken either orally or when applied topically. Interestingly, they were used for this purpose in ancient Egypt but have only been commercially manufactured in the last four to five decades. When used with UVA (long-wave radiation) they allow for a lower dose of UVA.

PUVASOL is the use of psoralens with natural sunlight in areas such as India - research so far suggests it may be as good as conventional therapy.

Indications

- Eczema
- Psoriasis
- Vitiligo
- Mycosis fungoides
- Photodermatoses
- Localised scleroderma
- Skin changes associated with systemic lupus erythematosus (SLE)

Method of action

It remains a mystery as to why psoralens with UVA work in the above conditions but it has been postulated to relate to modulation of the skin's immune system. [1]

How is PUVA administered?

- Psoralen is taken orally one hour before UVA treatment.
- If the patient is unable to tolerate oral psoralens some hospitals provide a bathing system or topical psoralens - eg, gel-based preparations.
- Topical therapy with psoralens is not associated with adverse effects such as nausea and vomiting seen with oral psoralens.
- During sessions patients need to wear protective goggles, and UVA protective goggles must be worn for 24 hours following the treatment.
- Clothes only need to be removed from the area to be treated, but groin protection is required.
- UVA treatment is given 2-3 times per week for about 12 weeks - in a light box.
- Once the course has finished, the patient may need maintenance therapy with one session per week.
- Avoid exposure to sunlight for 24 hours after the session.

Summary of special precautions required before PUVA treatment (see above)

- Eye protection - wear goggles.
- Groin protection - wear protective shield/garment.
- Skin and eye protection for 24 hours following the session of PUVA.

Adverse effects

Adverse effects from oral psoralen

- Nausea and vomiting - caused by psoralens and reduced if taken with food; this is a common reason for stopping treatment.
• Headache and dizziness.

Adverse effects from PUVA
• Sunburn (phytotoxic erythema) and blistering - occurs 2-3 days after treatment and more often in fair-skinned patients.
• Dryness of skin with itching.
• Tanning - lasts months (all patients).
• Keratitis - the eyes need to be shielded during therapy.
• Malignancy - some reports of increased risk of non-melanoma skin cancer.[2]

Adverse effects resulting from recurrent treatments
• Enhancement of ageing changes of the skin - this includes freckling and wrinkling and occurs with extensive or prolonged treatments.
• Increased skin neoplasia risk - eg, melanoma and non-melanoma; again, the risk is higher with extensive and prolonged treatments.

Use in specific conditions

Psoriasis
• Used in older patients and those with severe psoriasis.
• Chronic plaque-type psoriasis is associated with up to 100% clearance.
• Efficacy is enhanced when combined with ultraviolet B (UVB) or medications such as methotrexate (especially pustular and erythrodermic forms).
• PUVA therapy has been compared with narrow-band UVB therapy in a randomised controlled trial which reported that the former is more effective.[3]
• Home phototherapy is likely to become an option for selected patients.[4, 5]

Eczema or dermatitis
• Moderate-to-severe eczema only - clearance in up to 75%.

Mycosis fungoides
• This is a rare form of cutaneous T-cell lymphoma.
• PUVA can clear the disease but recurrence occurs in half of patients - with 30-50% remaining free of neoplasia at ten years. [6]
• It requires ongoing treatment over many years and thus may be associated with skin damage and neoplasia. [6]

Vitiligo
PUVA can lead to repigmentation in areas where there is complete loss of pigmentation - but results are variable. A recent Cochrane study suggests that combination therapy regimens where light therapy is used are most likely to produce beneficial work, but more studies are needed.[7]

Further reading & references

• British Association of Dermatologists and British Photodermatology Group guidelines for the safe and effective use of psoralen–ultraviolet A therapy 2015; British Journal of Dermatology (2016)
