PREScribing INFORMATION

OxSoraleN Lotion 1%
(Methoxsalen, USP)

Melanin Repigmentation
Photochemotherapy of Psoriasis and Atopic Dermatitis

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INDICATIONS
Repigmentation of vitiliginous lesions and treatment of psoriasis and atopic dermatitis in combination with high intensity UVA light. Oral route is preferred if extensive repigmentation is desired since topical application can only be applied to a small area at a time.

CONTRAINDICATIONS
Oxsoralen Lotion 1% is contraindicated in patients exhibiting idiosyncratic reactions to psoralens or with a history of a sensitivity reaction to the drug; in patients with diseases associated with photosensitivity (e.g., lupus erythematosus, porphyria cutanea tarda, erythropoietic protoporphyria, varietate porphyria, xeroderma pigmentosum, albinism, hydroa vacciniforme, leukoderma of infectious origin, polymorphous light eruptions), except under special circumstances; in patients with melanoma or history of melanoma; and in patients with invasive squamous cell carcinoma.
Safety in patients 12 years and under, in aphasic people, in pregnant women or in women of childbearing age has not been established. No preparation with any photosensitizing capacity, internal or external, should be used concomitantly with methoxsalen therapy.
WARNINGS

Methoxsalen is a potent drug capable of producing severe burns if improperly used. Oxsoralen Lotion should be applied ONLY by a physician under controlled conditions as to light exposure and subsequent light shielding. **Oxsoralen Lotion 1% should NEVER be dispensed to a patient for home application.**

Oxsoralen Lotion 1% should be applied only to small, well-defined vitiliginous lesions, preferably those lesions that can be protected by clothing or a sunscreen from subsequent exposure to UVA light. It is recommended that the entire brochure be read before prescribing or dispensing the information. Safety during pregnancy or lactation has not been demonstrated. Use in these conditions should be undertaken only when in the judgment of the physician, the probable benefits outweigh the possible risks.

All patients should wear goggles and should close their eyes during treatment with UV light. Eye protection for 24 hours following the application of Oxsoralen Lotion is needed. On a rare occasion, detectable serum psoralen levels have been found in the blood of patients undergoing topical application of psoralen.

PRECAUTIONS

Oxsoralen Lotion 1% should be used only in healthy adults.

Prior to Oxsoralen Lotion 1% administration and UVA exposure, patients should not sunbathe for at least 24 hours, since the presence of sunburn may prevent an accurate evaluation of patient response to photochemotherapy. Following topical treatment with Oxsoralen Lotion 1%, additional exposure to UV light should be avoided for at least 12 to 48 hours. If exposure to sunlight cannot be avoided (face, hands), the patient should wear protective clothing (e.g., hat, gloves) and/or apply sunscreens that filter out UVA radiation (e.g., sunscreens with a sun protective factor greater than or equal to 15). Sunscreens should be applied to all areas of the
body that may be exposed to the sun (including lips). Treated areas may be highly photosensitive for several days and severe burns could result from additional exposure to UVA or sunlight. Oxsoralen Lotion 1% should be used with particular caution in patients receiving topical or systemic therapy with known photosensitizing agents.

There have not been any clinical reports or tests to verify that more severe reactions may result from the concomitant ingestion of furocoumarin containing food while on methoxsalen therapy; but the physician should warn the patient that taking limes, figs, parsley, parsnips, mustard, carrots, and celery, might increase reactions to sun and artificial light exposure.

ADVERSE EFFECTS

The potential adverse effects of long-term PUVA therapy remain to be clearly established but may include accelerated aging of the skin, and cutaneous carcinogenesis.

OVERDOSAGE

The application and dosage of Oxsoralen Lotion 1% must be carefully controlled. Overdosage and/or overexposure of light may result in serious burning and blistering. To prevent harmful effects, the physician should carefully instruct the patient to adhere to the prescribed dosage schedule and procedure. The treatment for severe reactions resulting from overdosage or overexposure should follow accepted procedures for treatment of severe burns.

DOSAGE AND ADMINISTRATION

Methoxsalen therapy must be accompanied by some form of UVA irradiation. Initial UV light exposure times should be based on the minimum phototoxic dose (MPD) for the specific light source being used. MPD can be determined by irradiating several skin areas on the patient's back, 2 cm in diameter with varying light exposure times and determining the exposure time that
produces erythema at 72 hours. Following topical application of methoxsalen, initial exposure to sunlight should not exceed 1 minute; subsequent exposure time may be increased cautiously depending on erythemic response. If a conventional artificial light source is used, exposure time should usually be 50% of that producing erythema after sunlight exposure or should be adjusted according to the MPD and the directions of the manufacturer of the device.

To prevent serious burns following administration of methoxsalen, patients should be carefully instructed not to exceed UV light exposure time.

Oxsoralen Lotion 1% is applied topically; occasionally the lotion may need to be diluted 10- or 100-fold to avoid excessive reactions. Oxsoralen Lotion should be applied only to small, well-defined, vitiliginous lesions (less than 10 cm²) by a physician. Oxsoralen Lotion should NOT be dispensed to a patient for home use.

The hands and fingers of the individual applying the lotion should be protected by gloves or finger cots to avoid photosensitization and possible burns.

The Lotion may be applied with a cotton swab, allowed to dry for 1 to 2 minutes, then reapplied. The borders of the vitiliginous lesion being treated should be protected with petrolatum, zinc oxide and/or a sunscreen to prevent hyperpigmentation.

**Vitiligo, Psoriasis and Atopic Dermatitis**

Small, well-defined lesions may be treated with Oxsoralen Lotion 1%. For optimum effect, the lotion should be applied about 1 to 2 hours before exposure to UV light. Initial dose of UVA may not be skin type related. Beginning dose is usually 0.25 to 0.5 Joules/cm² with increases of 0.25 Joules as tolerated. The treated area may be exposed to UV light for a limited time, then washed with soap and water. Although treatments with topical methoxsalen and UV light exposure are not recommended to be more frequent than once weekly, in some cases treatment every 3 to 5 days, depending on response (grade of erythema), might be needed.
Repigmentation of vitiliginous or atopic dermatitis lesions may begin after a few weeks of treatment, but substantial changes usually require 6 to 9 months of therapy. If follicular repigmentation is not apparent after 3 months of treatment, Oxsoralen lotion 1% therapy should be discontinued.

Grade | Erythema
---|---
0 | no erythema
1 | minimally perceptible erythema - faint pink
2 | marked erythema but no edema
3 | fiery erythema with edema
4 | fiery erythema with edema and blistering

**Schedule of Light Treatments for Psoriasis**

For Skin Type | Frequency depending on erythema response
---|---
I, II, III, IV | 1 to 3 times/week
V, VI | 2 to 3 times/week

Patients should be clear of psoriasis by the 30th treatment. Patients who are not clear by this time should only be subjected to further treatment after reevaluation by the physician. Maintenance therapy will probably be required to maintain the patient clear of psoriasis. The frequency of maintenance therapy will vary from patient to patient and should be determined on an individual basis.

**Extra UVA Exposure to the Lower Legs**

Psoriasis present on the lower legs is slow to clear. After the 6th treatment, if psoriasis is present there, the lower legs may receive "extra" UVA. Initially, 0.5 to 1.0 J/cm², depending on the skin type, should be given but as tanning occurs, this may be gradually increased to a maximum of 1/3 of the whole body-UVA dose. The "extra" UVA may be given either before or after the total
body treatment, with the rest of the body carefully shielded in order to avoid overexposure.

**Maintenance Therapy**

After patients are cleared, they may be assigned a maintenance schedule of treatment once-a-week, once-every-two-weeks, or once-every-three-weeks. The UVA exposure time for the maintenance treatment is the same as the patient's last treatment of the clearing phase and is not changed during maintenance therapy unless the patient develops erythema, psoriasis or atopic dermatitis.

Erythema: during maintenance therapy, the patient's tan and threshold for erythema may gradually decrease. If maintenance treatments produce erythema, the exposure to UVA should be decreased by 0.25 to 0.5 J/cm$^2$ per treatment until treatments no longer produce erythema.

Psoriasis or Atopic Dermatitis: If the patient develops new areas of psoriasis or atopic dermatitis during maintenance therapy, the exposure to UVA is increased by 0.25 J/cm$^2$ per treatment for patients with a Grade 1 to 2 tanning response; by 0.25 to 0.5 J/cm$^2$ per treatment for patients with a Grade 3 to 4 tanning response; and by 0.5 J/cm$^2$ per treatment for patients with skin types V and VI. This is continued until the psoriasis or atopic dermatitis is brought under control and the patient is again clear.

**Tanning Response**

- 0 = no change in pigmentation
- 1 = minimally perceptible tan, light brown
- 2 = moderate tan, medium brown pigmentation
- 3 = dark brown pigmentation
- 4 = black pigmentation
Concomitant Therapy

Emollient creams and bath oils: these are to be used regularly during therapy. They will help to remove scales and also prevent excessive dryness.

Topical steroids, tar preparations, salicylic acid and other keratolytics: these preparations may be used on the scalp but are not to be used on the body, except in areas shielded from UVA exposure (e.g., intergluteal folds, soles of feet when upright unit is used, etc.). After exposure to measured periods of sunlight or UVA listed in the above schedule, the skin should be protected from further exposure by applying sunscreens or sun blocking agents. Sunglasses should be worn during exposure and the lips protected with a light-screening lipstick.

AVAILABILITY

Oxsoralen Lotion 1% is available in rectangular, amber glass bottles of 30 mL containing methoxsalen, USP; alcohol 71% and propylene glycol.

PHARMACEUTICAL INFORMATION

Drug Substance: Methoxsalen, USP

Chemical Name: (1) 7H-Furo[3,2-g][1]benzopyran-7-one, 9-methoxy-;
                (2) 9-Methoxy-7H-furo[3,2-g][1]benzopyran-7-one

Structural Formula:

Molecular Formula: $C_{12}H_{8}O_{4}$
Molecular Weight: 216.19

Description: methoxsalen occurs as white to cream-colored, fluffy, odourless needles insoluble in water, soluble in acetone and chloroform

Stability: Oxsoralen Lotion 1% should be stored in well-closed, light-resistant containers at controlled room temperature (15-30° C)