

# Methyl aminolaevulinate photodynamic therapy in practice: Treatment protocol

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## LESION PREPARATION

For solar keratoses and superficial basal cell carcinoma, loose crusts and debris are removed with a small curette or blade, and the lesion surface is roughened by gentle scraping. Damage to the surrounding normal skin should be avoided. For nodular BCC, the epidermal keratin layer (which can impede absorption) is removed with a scalpel blade or curette, and the exposed tumour material gently removed.

Local anaesthesia is rarely used, but if required it should be used without adrenaline. Methyl aminolaevulinate (MAL) PDT treatment relies on the production of reactive oxygen species; adrenaline will cause vasoconstriction, leading to less tissue oxygenation.

If bleeding occurs during lesion preparation, light pressure should be applied. Treatment can be continued once bleeding stops.

## CREAM APPLICATION

As previously mentioned, MAL cream should be applied as a layer approximately 1-mm thick, and a margin of 5–10 mm should be included. Application to the eye should be avoided. The treated area should be covered with an occlusive dressing for 3 hours, and then cleaned with saline prior to illumination.

## ILLUMINATION

The lamp has a guide light to assist with positioning; it should be positioned so that illumination will cover the entire area to be treated, with a distance between the lamp head and lesion surface of 50–80 mm. Protective goggles must be used by patient and operator.

The illumination time is automatically calculated (in the range 7–9 min) and the lamp will automatically shut down at the end of the illumination period. Illumination may be paused during treatment without loss of efficacy. For example, if the patient is feeling uncomfortable, illumination

can be paused, local anaesthetic infiltrated, and then illumination recommenced. Not all patients experience pain, but it should be explained to patients prior to the procedure that a stinging or burning sensation during illumination may occur. In those patients who do experience pain, levels vary greatly. Options for treatment of pain include oral paracetamol 1 hour prior to illumination or local anaesthesia without adrenaline if the lesion is in a sensitive area or if the patient is susceptible to pain. Use of a fan or cool air during illumination reduces the burning sensation.

## AFTERCARE

The patient should keep the treated area clean and in general it is left uncovered. An antibacterial ointment may be applied to the treated area until re-epithelialization occurs; if this is in an area where clothing may be marked by the ointment, a lightweight, nonocclusive dressing can be used.

Approximately one-quarter of patients experience a burning or stinging sensation and some degree of pain post treatment. Such reactions are generally of mild to moderate intensity and transient, usually settling within 24 hours. Pain relief should be offered to these patients. Oedema, erythema and crusting of the treated area may also occur: daily application of petroleum jelly may help if antibiotic ointment is not already used.

A second treatment should be performed 7 days after the first.

## FOLLOW UP

Follow-up assessment should be made 3 months after the second treatment, and a repeat cycle of treatment can be given if a partial response has been achieved. As only two cycles of two treatments have been studied to date, lesions with a non-complete response should be retreated only once (i.e. with a second cycle of two procedures separated by 7 days).