Patient Awareness Leaflet
Actinic Keratosis
What are actinic keratoses?
Actinic (or solar) keratoses arise on the skin’s surface. They are small crusty, scaly, crumbly patches and some may have horns. These changes commonly occur in people that have had a lot of sun exposure to their skin. These lesions (abnormal skin) may be red or light brown or have the same colour as your skin. They might be dry or rough to touch and they are sometimes easier to feel than see. In rare cases, actinic keratoses may itch or produce a pricking or tender sensation. They might also become inflamed or bleed.

Where do they appear?
Actinic keratoses occur most commonly on the exposed parts of the body such as the scalp, face, neck, lips, ears or on the back of hands and forearms. However, other parts of the body are at risk if exposed to sunlight for long periods, for example, the shoulders or the back.

How big are they?
The skin lesions develop slowly and typically reach a size of 2mm to 5mm but they may be larger. Sometimes the lesions disappear for a while only to reappear later.

Do they matter?
Actinic keratoses show that your skin has been damaged by the sun. As actinic keratoses may develop into more dangerous skin cancer, you should discuss this with your doctor. You may also be at a higher risk of developing other types of skin cancers.

Why do actinic keratoses develop?
The main cause of actinic keratoses is exposure of the skin to sunlight. Sun exposure over many years can cause skin cancer. Other factors like personal skin colour influence the development of skin cancer. Many people have exposed their skin to intensive sunshine (UV B radiation) and cells damaged by UV B radiation may take 10 to 30 years to progress to actinic keratoses and skin cancer. People with fair skin, blonde or red
Multiple Actinic Keratoses of early stages on a scalp

Multiple UV induced Actinic Keratoses of different stages on a scalp

Hair and older than 50 years are the most likely to be affected. The risk is particularly high for people with a weak immune system or taking drugs that suppress the immune system such as organ transplant patients. The number of people suffering from actinic keratoses and other skin cancers is increasing worldwide.

**Why should actinic keratoses be treated?**

Actinic keratoses are an early form of skin cancer and have the potential to progress into the more advanced squamous cell carcinoma (SCC). Unfortunately, there is no way of knowing which ones may develop into SCC. In general, SCC is not life-threatening when diagnosed and treated in the early stages. However, they can grow and invade the surrounding tissue. In rare cases, metastasis or the spread into internal organs may occur. Therefore, broad agreement exists that actinic keratoses should be treated early.

**Treatment options**

**Which treatment options are available?**

There are many effective ways of treating actinic keratoses. Patient and doctor should decide together the best treatment option.
Often used are the following treatments:

**Cryotherapy (freezing with liquid nitrogen)**
This method is used for single or limited numbers of actinic keratoses. There are two methods of using nitrogen to freeze the lesions. One using a spray device or by a cotton tipped applicator for some seconds; anaesthesia is not usually required. Following this procedure, the lesions shrink or become encrusted and fall-off. Side-effects of treatment include blisters, temporary redness, and swelling; scarring and skin colour changes may also occur.

**Surgery**
This approach is recommended for more advanced lesions and where other treatments may not have worked. This may involve shaving the lesion off or scraping it with a spoon shaped instrument (curette) or cutting it out with stitches. This procedure needs local anaesthetic injections and may cause scarring. Your doctor will send the specimen to a pathology laboratory.

**Laser therapy**
Two kinds of laser are used, in some countries, to treat actinic keratoses - carbon dioxide or erbium YAG laser. Laser therapy is best used for lesions in small or narrow areas and for those on the lips (actinic cheilitis). Sometimes, a local anaesthetic may be needed. Side effects include pain and inflammation of treated area, hypopigmentation and light scarring may also occur.
Photodynamic therapy (PDT)
This method combines the application of a cream with a strong light application by a specific device and is performed in some dermatological centres. The active ingredient of the cream targets the abnormal cell making them more sensitive to the light. The light treatment, some hours later, destroys the abnormal cells. Pain may be experienced during treatment and can be severe. After the treatment, patients should avoid natural sunlight and there may be skin reddening for a few days.

Creams and gels (topical treatments)
There are a number of topical medications which are used to treat actinic keratoses. These are helpful in removing visible and invisible actinic keratoses especially when the lesions are numerous. All topical treatments need several weeks to effectively clear the lesions and they must be applied according to the information given by your doctor. Advantages are that they can be applied easily and be used at home. They work in different ways and side-effects vary from mild to moderate or in some cases severe although the risk of scarring is minimal.

• 5-fluorouracil 5% cream
This cream, based on an anti-cancer agent, has been used for many years but redness, swelling and crusting is usual which can continue for some days after treatment; it should be used in smaller areas.

• Imiquimod cream
Imiquimod cream works by stimulating the skin’s defence mechanism which produces inflammation. In the treated area, this inflammation results in redness and crusting and pain may occur which can continue for some days after treatment. In general, treatment should be continued for 4 to 16 weeks.

• Diclofenac 3% gel
Diclofenac gel is a specific gel formulation of diclofenac 3% with hyaluronic acid (this should not be confused with other diclofenac products used for treating pain). Diclofenac 3% gel works by helping the skin’s defence system to destroy damaged cells, leaving healthy cells to take their place. Treatment is usually needed for three months. Side effects may include tingling sensations, dry skin and mild redness.
Prevention

Today, it is clearly known that sunlight (UV B radiation) is the most important factor in skin cancer. Increased exposure to the sun due, for example, to increased outdoor activities, moving to sunnier countries and taking holidays in places with a lot of sunshine along with the fashionable trend to be suntanned is contributing to the worldwide growth of in skin cancer.

When outdoors, the following recommendations should be observed:

- Always use a broad-spectrum sunscreen with a sun protection factor (SPF) of 20 or higher. Particular attention should be paid to certain areas which are exposed to the sun – ears, neck, scalp and back of the hands.
- Always wear appropriate clothing like a broad-brimmed hat, a long-sleeved shirt and UV-blocking sunglasses if you are staying in the sun.
- Avoid sun exposure between 11am and 3pm when the sun is at its peak period
- Sit in the shade
- Avoid getting sun burned!
The only way to avoid any kind of skin cancer is to protect the skin against excessive sunlight. For all skin cancers, including actinic keratoses, early detection is the most critical factor for treatment success.

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