Non pigmented lesions

Dr Pawel Bogucki
Consultant Dermatologist
Major risk factors for skin cancer

• Exposure to UV light/radiation via sunlight or sun beds

• Skin damage (sunburn) at any age

• Outdoor occupation

• Personal or family history of skin cancer

• Lowered immunity (e.g. transplant patients)
• 1.7% primary care consultations are related to diagnosis/management of skin lesions

• Dermatology OPD: 35-45 % of referrals relate to skin lesions (up to 60% in some areas)

• Approximately 88% 2-week wait urgent referrals for suspected skin cancer turn out to be non-malignant
Actinic Keratosis

- Epithelial dysplasia
- No dermal invasion
- 15-25% spontaneous regression over 1 year
- Risk of transformation?
  - < 1/1000 per annum
  - 10% risk of at least 1 transforming over 10 years
Pre-malignant skin lesions  AK

• Lifetime sun exposure and fair skin are the most important risk factors for AK

• AK is an indicator of cumulative UV exposure

• Initial lesion in the majority of invasive cutaneous SCCs
  – Studies carried out in Australia and the US showed that approximately 60–65% of SCCs arose in lesions that were previously diagnosed as AK

  – In patients aged 65 years or older, AK is associated with a greater than 6-fold increased risk of developing skin cancer versus those without AK
Lesion vs. field therapy

- Lesion-directed treatment does not address the problem of actinic changes in the surrounding sun-damaged skin.

- AK can lead to new lesions developing in the vicinity of the original tumour if the field is left untreated.

  - 25% of tumour resection margins of histologically proven AK show genetic changes that may be responsible for local recurrences of AK.
  - The field change may be as large as 7 cm around tumours, resulting in genetically similar secondary tumours.
  - For every AK that can be seen, there are likely several that are subclinical and not visible but will be so in a few months.
Treatment in primary care

• Pre-malignant and benign lesions may be managed in primary care

• The majority of AKs should be managed in the community, and preferably by GPs otherwise consultant and GPwSI clinics will become overburdened, and patients with more serious skin problems will wait longer to be seen by a specialist

• Referral to a specialist is recommended for patients with:
  – A suspicious pigmented skin lesion
  – A skin lesion that may be a BCC, SCC or MM
  – An uncertain diagnosis
AK and Dermoscopy

• Pigmented or non-pigmented

• Rosette structure - 4 white points arranged as a 4-leaf clover or as leaves radiating out from a central stem

• Strawberry pattern
  • erythematous pseudo network
  • prominent yellowish hair follicles with white halo

• Surface scale

• Linear-wavy vessels or dotted vessels
Actinic keratosis, Treatment

• General measures

• Observation

• Single lesions, lesion specific

• Filed change
# AK Treatment Options

<table>
<thead>
<tr>
<th>Lesion-directed treatments</th>
<th>Field-directed treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Surgical removal</td>
<td>• Photodynamic therapy (PDT)</td>
</tr>
<tr>
<td>– Excision</td>
<td>◦ With 5-aminolevulinic acid (ALA)</td>
</tr>
<tr>
<td>– Curettage/electrodessication</td>
<td>◦ With methyl aminolevulinate (MAL)</td>
</tr>
<tr>
<td>• Physically-destructive methods</td>
<td>• Imiquimod</td>
</tr>
<tr>
<td>– Cryotherapy</td>
<td>◦ Imiquimod 5% cream</td>
</tr>
<tr>
<td>– Laser treatment</td>
<td>◦ Imiquimod 3.75% cream</td>
</tr>
<tr>
<td>• Topical treatments</td>
<td>• 5% 5-FU cream</td>
</tr>
<tr>
<td>– 0.5% 5-fluorouracil (5-FU)</td>
<td>• 3% diclofenac in 2.5% hyaluronic acid gel</td>
</tr>
<tr>
<td>+ 10% salicylic acid solution</td>
<td>• Actikerall (fluorouracil, salicylic acid)</td>
</tr>
<tr>
<td></td>
<td>• Picato</td>
</tr>
<tr>
<td></td>
<td>◦ Ingenol mebutate 150 mcg/g gel</td>
</tr>
<tr>
<td></td>
<td>◦ Ingenol mebutate 500 mcg/g gel</td>
</tr>
</tbody>
</table>
Actinic (Solar) Keratosis – Primary Care Treatment Pathway

What is an AK
An actinic keratosis is a common, UV induced, scaly or hyper-keratotic lesion which has a very small potential to become malignant. There is a high spontaneous regression rate and low rate of transformation - less than 1 in 1000 per annum, but with an average of 7.7 AKs the risk of one transforming in 10 years is 10% * (See over)

Contributors
Dr Chris Bower
Dr Steve Keohane
Dr Stephen Kownacki
Dr George Moncrieff
Dr Colin Morton
Dr Julian Peace
Dr Neil Shroff

Important Information about Treatments
A. Expect local skin reactions which can be severe with several of these treatments. This can be very severe especially if large areas are being treated. These should be regarded as an effect of the treatment. Patients should be warned to expect this effect rather than regarding it as an unwanted side effect.
B. Complete clearance of lesions can be delayed several weeks beyond completion of topical therapies.
C. Please refer to SPCs for further information regarding these products
D. Local formulations and regional guidance may exist for individual products
E. It may be preferable to divide larger areas into smaller ones and treat them sequentially

Identify High Risk Patient
Past history of skin cancer, those with extensive UV damage, immunosuppressed patients or the very young, consider referral to secondary care or accredited GPs. If not high risk then consider treatment as below

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Brand Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3% Diclofenac with HA</td>
<td>Solaraze</td>
</tr>
<tr>
<td>5% Fluorouracil (5-FU)</td>
<td>Efudix</td>
</tr>
<tr>
<td>5% Imiquimod</td>
<td>Aldara</td>
</tr>
<tr>
<td>0.5% 5-FU+10% Salicylic acid</td>
<td>Actikerall</td>
</tr>
<tr>
<td>3.75% Imiquimod</td>
<td>Zyclara</td>
</tr>
<tr>
<td>0.015% Ingenol mebutate – face &amp; scalp</td>
<td>Picato</td>
</tr>
<tr>
<td>0.05% Ingenol mebutate – trunk &amp; limbs</td>
<td></td>
</tr>
<tr>
<td>Liquid Nitrogen</td>
<td></td>
</tr>
<tr>
<td>Photodynamic Therapy</td>
<td>Metvix &amp; Ameluz</td>
</tr>
<tr>
<td>Curettage</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
✓ general recommendation
✓✓ Strong recommendation
X Not recommended in Primary Care

Please note these recommendations do not take into consideration the cost of treatment and are based on the clinical expertise of the guideline contributors with the products

Red Flag
Lesions that:
- Are rapidly growing
- Have a firm and fleshy base and/or are painful
- Are not responding to treatment

Refer urgently as Priority Cancer Referral to secondary care

# Actinic (Solar) Keratosis

## General Measures

- Applicable to all patients and may be all that is needed for management:
  1. AKs are a marker of UV damage: examine other areas of the skin
  2. Encourage prevention: sun screen and protection
  3. Advise patients to report change
  4. Consider use of emollients for symptom control

## Clinical Grading (according to Olsen 1991)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade I</td>
<td>Flat, pink maculae without signs of hyperkeratosis and erythema often easier felt than seen. Scale and possible pigmentation may be present</td>
</tr>
<tr>
<td>Grade II</td>
<td>Moderately thick hyperkeratosis on background of erythema that are easily felt and seen</td>
</tr>
<tr>
<td>Grade III</td>
<td>Very thick hyperkeratosis, or obvious AK, differential diagnosis includes thick IEC (intra-epidermal carcinoma or SCC)</td>
</tr>
<tr>
<td>Field damage</td>
<td>Large areas of multiple AKs on a background of erythema and sun damage</td>
</tr>
</tbody>
</table>

## Suggested Treatment Regimes

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Protocol</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solaraze</td>
<td>Twice daily for 60-90 days</td>
<td>Because of the length of treatment needed, compliance may be an issue</td>
</tr>
<tr>
<td>Efudix</td>
<td>Once or twice daily for 3-4 weeks</td>
<td>Early &amp; severe inflammatory reaction is normal, typically peaking in the second week</td>
</tr>
<tr>
<td>Actikerall</td>
<td>Once daily for 6-12 weeks</td>
<td>Apply with brush applicator &amp; peel off existing coating before reapplication</td>
</tr>
<tr>
<td>Aldara</td>
<td>Apply three times a week for 4 weeks</td>
<td>Flu like symptoms are occasionally reported</td>
</tr>
<tr>
<td>Zy Clara</td>
<td>Two treatment cycles of two weeks, separated by 2 treatment free weeks</td>
<td>Flu like symptoms are occasionally reported</td>
</tr>
<tr>
<td>Picato 150μg/g gel – face &amp; scalp</td>
<td>Once daily for 3 consecutive days</td>
<td>Skin reaction may occur from day one and usually resolves within 2 weeks</td>
</tr>
<tr>
<td>Picato 500μg/g gel – trunk &amp; extremities</td>
<td>Once daily for 2 consecutive days</td>
<td>Skin reaction may occur from day one and usually resolves within 4 weeks</td>
</tr>
</tbody>
</table>
SCC in situ, Bowen’s disease (BD)

- An intraepidermal (in situ) squamous cell carcinoma (SCC) with a small potential for invasive malignancy

- Occurs mainly on the lower legs, but can almost anywhere on the skin

- The risk of progression to invasive cancer is in the order of 3%.
Numerous glomerular vessels, and scale-crusts
BD, Dermoscopy

- Glomerular vessels (90%)
- Scaly surface (90%).

- In addition, in pigmented BD
- small brown globules regularly packed in a patchy distribution (90%)
- structureless grey to brown pigmentation (80%)
Typical dermatoscopic picture of an area of SCC in situ on the scalp. A superficial BCC would have serpentine or linear branched vessels.
BD

- Often multiple lesions

- 30-50% of patients have other previous or subsequent skin malignancies (mainly basal cell carcinoma)

- Genital, and particularly perianal, BD have higher risks of invasive cancer.
BD, Treatment

- **Cryotherapy**, optimal freeze duration is between 1 x 15 sec and 2 x 20 sec, simple to administer

- **Curettage with cautery**, has advantages over cryotherapy of quicker healing and less pain

- **Excision**, low recurrence rates but limited by tight skin at some sites. Excision is the treatment of choice for perianal BD.
BD, Treatment

- **Photodynamic therapy**, the treatment of choice for large lesions or at sites of potential poor healing

- **5 Fluorouracil (5FU)**, usually applied once or twice daily as a 5% cream for 1 week to 2 months to achieve disease control, and repeated if required at intervals

- **Radiotherapy**, High cure rate is offset by poor healing of larger lesions, should be avoided on the lower leg
BD, Treatment

- **Laser Tx**: anecdotal reports

- **Imiquimod**: open studies only, some using combined treatment

- Systemic retinoids and interferon – few case only

- No treatment – an option for slow growing lesions where poor healing is a concern
Squamous Cell Carcinoma (SCC)

“A malignant tumour arising from the keratinising cells of the epidermis or its appendages. It is locally invasive and may metastasise”
SCC

• The second most common type of skin cancer in the UK

• Can develop on any part of your body, but is most common on areas that are exposed to the sun

• Can also develop where the skin has been damaged by X-rays, ulcers, burns and on persistent chronic wounds and old scars
SCCs

- Increased risk of metastasis includes:
  
  - Site High risk sites include lip & ear, non sun-exposed sites, areas of radiation or thermal injury, chronic draining sinuses, chronic ulcers, chronic inflammation or Bowen’s disease.
  
  - >2cm in diameter
  
  - Depth Tumours >2mm in depth or extending to the subcutaneous tissue
  
  - Histological differentiation - Poorly differentiated tumours have double the local recurrence rate and triple
  
  - Host immunosuppression
SCCs
SCC?
SCC, Marjolin’s ulcer
## SCC and Dermoscopy

<table>
<thead>
<tr>
<th>Lesion</th>
<th>Seborrheic Keratosis</th>
<th>Hypopigmented actinic keratosis</th>
<th>Bowen Disease</th>
<th>Squamous Cell Carcinoma</th>
<th>Sebaceous Hyperplasia/Molluscum contagiosum</th>
<th>Dermatofibroma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of vessels</td>
<td>Hairpin with peripheral whitish halo</td>
<td>Dotted</td>
<td>Glomerular</td>
<td>Hairpin</td>
<td>Crown</td>
<td>Dotted (30%)</td>
</tr>
<tr>
<td>Distribution</td>
<td>Regular</td>
<td>Regular</td>
<td>Clustered</td>
<td>Radial</td>
<td>Radial</td>
<td>Not defined</td>
</tr>
<tr>
<td>Additional criteria</td>
<td>- Milia-like cysts</td>
<td>- Raspberry pattern</td>
<td>- Superficial scaling</td>
<td>- Whitish peripheral halo</td>
<td>- Whitish peripheral halo</td>
<td>- Pigmented peripheral network</td>
</tr>
<tr>
<td></td>
<td>- Comedo-like openings</td>
<td>- Rosette sign</td>
<td>- Erythematous background</td>
<td>- Hyperkeratosis</td>
<td>- Hyperkeratosis</td>
<td>- Central white patch</td>
</tr>
<tr>
<td></td>
<td>- Fissures and crests</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Fingerprint structures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Sharp demarcation</td>
<td></td>
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</tbody>
</table>

### Diagrams

- **Seborrheic Keratosis**: [Image]
- **Hypopigmented actinic keratosis**: [Image]
- **Bowen Disease**: [Image]
- **Squamous Cell Carcinoma**: [Image]
- **Sebaceous Hyperplasia/Molluscum contagiosum**: [Image]
- **Dermatofibroma**: [Image]
SCCs, Treatment

• Excision

• Curettage and Cautery of small (<1cm), well-differentiated, primary, slow growing SCCs on sun-exposed selected and treated by experienced physicians

• Cryosurgery of small histologically confirmed SCC may be an appropriate technique for selected cases in specialised centres.

• Radiotherapy gives 5 year cure rates of 90% and excellent cosmetic results at specific sites
Keratoacanthoma

- A common low-grade skin tumour that is believed to originate from the hair follicle. Many pathologists consider it to be a form of SCC.

- It grows rapidly and can resolve by itself.

- Tx: surgical
Kerathoacanthoma
Nodular BCC
Superficial BCC
Superficial BCC
Morphoeic BCC

- Arborising vessels
- Linear serpentine
- Pale BCC stroma
Morphoeic BCC

The linear serpentine vessels help to confirm this is a morphoeic BCC
Morphoeic BCC
Pigmented BCC
Pigmented BCC
BCCs and dermatoscopy

• **Negative Feature:** no pigment network

• **Positive Features:**
  
  – **Leaf-like areas:** brown to gray/blue discrete bulbous extensions forming a leaf-like pattern.

  – **Spoke wheel areas:** well circumscribed radial projections, usually tan in color but sometimes blue or gray

  – **Large blue-gray ovoid nests:** well circumscribed, confluent or near confluent pigmented ovoid or elongated areas, larger than globules

  – **Multiple blue-gray globules:**

  – **Arborising vessels:** telangiectasia with distinct "tree-like" branching.

  – **Ulceration**
BCCs and dermatoscopy

Leaf-like areas in a pigmented basal cell carcinoma
BCCs and dermatoscopy

Multiple blue-gray globules in a pigmented BCC
BCCs and dermatoscopy

Spoke wheel areas are well circumscribed radial projections
BCCs and dermatoscopy

Arborising vessels are telangiectasia with distinct "tree-like" branching

Ulceration
Management of BCCs

- Depends on:
  - High vs. low risk tumours
  - Ease of access to treatment
  - Patient’s preferences
High risk BCCs

- Size >2 cm and high risk anatomical areas
- Poorly defined edges, morphoeic
- Perineural or perivascular invasion
- Recurrent or previously incompletely excised BCCs
- Host factors (immunosuppression)
Centrofacial, periorcular, “H zone,” and embryological fusion zones of face
Management of BCCs

- Referrals to a member of LSMDT or SSMDT
  - High risk BCCs
  - BCCs in children and those aged 24 and below
  - BCCs in immunocompromised and patient’s with Gorlin’s syndrome
https://www.nice.org.uk/guidance/csgstim/resources/management-of-lowrisk-basal-cell-carcinoma-
Management of superficial BCCs

• They are usually classified as low risk cancers

• Should be referred to doctors with experience of the full range of medical treatments (including PDT)

• Doctors in the community should have experience and knowledge of this condition
Management of BCCs

- Monitoring
- Surgical excision
- Curettage and cautery
- Cryotherapcy
- Topical treatment
- Photodynamic therapy (PDT)
- Radiotherapy
- Carbon dioxide (CO2)
Surgical excision

- **Wide local excision:**
  - 4 mm surgical margin: clearance > 95%
  - 3 mm surgical margin: clearance about 85%

- **MOHs micrographic surgery:**
  - Curate rate for primary lesions about 98%
Curettage and cautery

- Operator dependent

- For benign skin lesions one cycle, for cancer two to three cycles are needed

- Three cycles of curettage cure rate of 93.5%

- Recurrence rates in some studies range from 6% to 19%, and are significantly higher in the central facial areas
Cryotherapy

• Destructive method of treatment using liquid nitrogen

• Operator technique, length of treatment, and number of freeze-thaw cycles vary

• Recurrence rates vary from 39% at two years to as low as 1% at five years

• Cryotherapy is not recommended as a first line treatment for facial lesions
Photodynamic therapy (PDT)

• Methylaminolaevulinate (MEL) plus red light at 630 nm

• BAD recommends it for sBCCs, AKs, SCC in situ

• Good cosmetic outcome but painful !!!

• Complete response rate of 78% after two years, and a five year recurrence rate of 38%.
PDT