GUIDELINES FOR THE MANAGEMENT OF SKIN CANCER

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Guidelines of Care for Actinic Keratoses

A. Definition:

Actinic Keratoses (AK) are common premalignant skin tumors displaying different clinical morphologic features and histologic configurations. AKs are mainly due to chronic sun exposure and may progress to squamous cell carcinoma (SCC).

B. Rationale:

AKs are the most common premalignant lesions. It has been estimated that 60% of predisposed persons above the age of 40 have at least one AK. Risk factors for development of AK include but are not limited to:

1. Fair skin
2. Excessive UV exposure
3. Ionizing radiation
4. Geographic latitude (Sun belt, High altitude), Reflectants (Sun, Snow, Cement)
5. Occupation
6. Immunosuppression
7. Certain genodermatoses (such as xerodertna pigmentosum)

Without treatment, a significant number of AKs invade the dermis as SCC. Treatment is indicated for the relief of symptoms and to minimize this risk.

C. Diagnostic Criteria:

1. Clinical

AKs most commonly involve sun-exposed areas in the form of reddish-brown to yellowish ill-defined macules, papules, or plaques with dry scales. They range in size from 1-2 mm to several cms and may be symptomatic. Induration, erythema, erosions, pain, hyperkeratosis or increasing diameter are features suggesting progression into SCC.
2. Diagnostic Tests

AKs are generally diagnosed clinically, but a biopsy specimen may be indicated to verify diagnosis or exclude underlying malignancies. Microscopy shows varying degrees of epidermal atypia and abnormal maturation of keratinocytes.
D. Treatment:

Due to the high incidence of AKs, all practitioners must provide efficacious and cost-effective therapy. Both surgical and medical therapies exist. The choice depends on medical status, lesion characteristics such as size, location, duration, and change in growth patterns, previous treatment and certain anatomic locations such as scalp and ear.

1. Medical

Topical therapy includes 5-fluorouracil. It may be applied as 1%, 2%, or 5% solution or cream. Trichloroacetic acid or bichloroacetic acid are alternatives to treat patients with extensive AK.

2. Surgical

Many surgical modalities are used. These are:

One. **Cryotherapy**: destroys abnormal tissue in the epidermis. It is cost-effective and can be used to treat patients with multiple lesions. It is the most popular method of treatment.

Two. **Curettage**: may require local anesthesia. It may be used alone or in conjunction with electrosurgery, cryosurgery or chemical applications. Curettage is advantageous because it provides a specimen for histologic analysis.

Three. **Electrosurgery**: destroys tissue by an electrical mode. Monopolar electrical current is the most commonly used.

Four. **Excision**: It is done in selected patients where a suspected SCC is underneath the skin.

Five. **Dermabrasion**: This is utilized in-patients with extensive thickened keratoses, especially on the scalp.
Six. **Laser surgery**: mainly used in actinic cheilitis.
3. Other Therapies:

a. Alpha-Hydroxy Acids

b. Topical Retinoids

Three. Systemic Retinoids

d. Intralesional Interferon

E. Follow-up:

Routine follow-up is mandatory to exclude new lesions and to avoid the evolution of any AK into an invasive SCC. The frequency of these follow-ups depends on the clinical situation and the medical background of the patient.
Guidelines of Care for Basal Cell Carcinoma

A. Definition:
Basal cell carcinoma (BCC) is a malignant tumor displaying varying clinical appearances and histologic configurations. It is a fibroepithelial tumor having interdependent stromal and epithelial components.

B. Rationale:
BCC is the most common malignant tumor. Its occurrence is etiologically related to exposure to UV light and/or other contributing factors. Most people with fair skin especially those who sunburn easily but tan poorly are at increased risk. Despite the high numbers of new tumors that appear each year, most are treated effectively. However, the possibility of recurrence and/or development of new tumors is a risk factor and difficult to predict. Local tissue destruction may occur leading to disfigurement and impairment of function. Rarely do metastasis to regional lymph nodes or distant organs take place.

C. Diagnostic Criteria:

1. Clinical
Small, nodular, pigmented, cystic or superficial multifocal tumors are commonly seen. Large nodular and noduloulcerative lesions are usually more aggressive. Morpheaform BCC may have a scarlike indurated morphology with indistinct borders. These latter forms may require a more aggressive therapeutic approach.

2. Diagnostic Tests
Histologic examination confirms the diagnosis. The timing of biopsies and treatment are handled differently by different physicians. In some instances, it is appropriate to obtain a partial biopsy including incisional, shave or punch biopsy specimen and wait for the confirmatory pathological diagnosis before proceeding with one of the definitive procedures enumerated later. In other instances, a shave or curettage biopsy is performed and followed immediately with appropriate therapy.
D. Treatment

A wide variety of surgical and nonsurgical modalities are available for BCC. Choosing the modality depends on tumor and patient variables. Variables may include tumor type, size and location. For example, variables may include whether the tumor is primary or recurrent, size greater than 1 to 2 cm, duration, growth rate, indistinct margins, aggressive histologic pattern and certain anatomic locations. High risk sites comprise the nose, eyelids, ears, medial canthus, nasolabial fold, scalp, lip, fingers, toes and genitals. Patient variables may include age, medical status, psychological factors and concomitant medications.

1. Nonsurgical

   a. Radiation therapy:

      This modality is useful for therapy of primary tumors and some recurrent cancers and for the palliation of inoperable tumors.

2. Surgical

   a. Curettage and Electrosurgery:

      This modality is used to alternately debride the soft tissue with a curette and then destroy and extra margin by electrodessication, electrocoagulation or electrocautery. It is best suited for primary tumors.

   b. Cryosurgery:

      Cryosurgery produces tissue destruction by reducing temperature to tumoricidal levels. It is useful in primary lesions and some recurrent lesions and is especially done in patients with multiple lesions.

   c. Excision:

      Excision is the optimal treatment for primary and recurrent lesions and has the advantage of allowing for histologic assessment of surgical margins. This can be done by frozen section or permanent section technique. The wound defect is closed primarily or with flaps, grafts or is allowed to heal by secondary intention.
d. **Mohs Micrographic Surgery:**

This technique is efficacious in dealing with recurrent lesions and primary tumors displaying one or more risk factors discussed before. The procedure entails viewing the entire perimeter and the undersurface of the tumor to ensure a tumor-free margin.

e. **Laser surgery:**

Laser surgery is a recognized and evolving therapy that is used to vaporize tissue. The laser beam may serve as a scalpel blade for excisional surgery or for hemostasis.

3. **Evolving**

One. **Interferon:**

This cytokine has been used in treating BCC but is still presently under evaluation.

Two. **Prophylaxis:**

Prophylaxis with oral retinoids is being studied in an attempt to prevent development of new tumors in high-risk patients.

4. **Other**

Palliation and or observation is indicated in patients where any procedure is not of risk/benefit value.

E. **Miscellaneous**

1. Long-term follow-up is essential. The frequency and duration of follow-up depend on the individual circumstances.
2. Prevention and education are an integral part of the care of a patient with BCC. Sun avoidance, sunscreen with SPF of > 15 and self-examination.
Guidelines of Care for Cutaneous Squamous Cell Carcinoma

A. Definition:

Squamous cell carcinoma (SCC) is a malignant skin tumor of keratinizing cells of the epidermis or its appendages.

B. Rationale:

SCC is the second most common malignant tumor of the skin. It may occur anywhere on the skin as well as on mucous membranes with squamous epithelium. The occurrence of SCC is usually related to UV light. Therefore people with fair skin are at increased risk. Exposure to ionizing radiation, arsenic or other chemical agents may increase the chances of developing cutaneous SCC. SCC may also develop in chronic inflammatory or degenerative conditions including scars, ulcers, sinus tracts and other preexisting dermatologic conditions. Patients with decreased immunologic competence are at increased risk for this tumor. There is evidence that some SCC are associated with human papilloma virus.

C. Diagnostic Criteria:

1. Clinical

   One. SCC and its precursors may have several clinical presentations. These include:

   i. Actinic or radiation keratosis: These are scaly erythematous papules or plaques that arise on sun-damaged skin and / or irradiated skin. With time, these precursors develop into invasive SCC.

   ii. Carcinoma in situ: has three clinical presentations. These are:

       1. Bowen's disease: crusted, keratotic or velvety erythematous plaque.
       2. Erythroplasia of Queyrat: appears on the glans penis as a red, velvety moist patch.
       3. Erythroplakia and malignant leukoplakia: on the mucous membranes other than the glans penis.

   iii. Verrucous carcinoma: This is a warty or cauliflower-appearing tumor that occurs most often on the hands, feet, anogenital area and oral cavity.
iv. Invasive Squamous Cell Carcinoma: These usually present as indurated opaque nodules with or without ulcerations.

2. Risk factors:

Risk factors associated with aggressive biologic behavior, increased incidence of local recurrence and increased incidence of metastasis may include the following:

One. Size greater than 1 cm
Two. Rapid growth
Three. Ulceration
Four. Depth-invasion into deeper tissues such as subcutis, fascia, muscle, bone or cartilage
Five. Immuno-compromised host
Six. occurrence in previous inflammatory or degenerative process or scar
Seven. recurrence
Eight. anatomic location - MMs, temple, scalp and eyelid
Nine. Perineural Invasion
Ten. Histology

3. Diagnostic Tests:

a. Histology

Histologic confirmation is required to establish the diagnosis of SCC.
Assess:

a. Pathologic Pattern
b. Cell Morphology
c. Depth
d. Perineural Invasion
e. Lymphatic Invasion

These can be useful in selecting the therapeutic modality or directing management

Two. Timing of Biopsy and Treatment:
Depends on the discretion of the physician. Biopsy may be performed and a
diagnosis is established and then the lesion is treated. Another option is to
perform the diagnostic and therapeutic excision in the same setting.

Three. Histologic Types

i. Well-Differentiated and keratinizing

ii. Spindle SCC: Special stains may be required to establish diagnosis

iii. Verrucous carcinoma: a well-differentiated tumor with minimal atypia or
individual cell keratinization

iv. Adenoid SCC: characterized by acantholysis, anaplasia and dyskeratosis
with tubular or adenoid appearance

Four. Histologic risk factors

i. Undifferentiated histologic pattern

ii. Depth into and beyond the subcutis

iii. Perineural invasion

iv. Lymphatic invasion

D. Staging:

The following may be helpful in defining the extent of disease, if suspected

1. Lymph nodes: Clinically palpable nodes may be histologically confirmed by fine needle aspiration or open biopsy.

2. X-ray

3. MRI

4. CT scan

5. Ultrasound

E. Treatment:

There exists a wide array of surgical and nonsurgical therapeutic modalities. Successful treatment depends on the clinician's skill and familiarity with the technique as well as tumor type and patient selection.

1. Surgical
a. **Curettage and electrosurgery:** This modality is used to scrape away the tumor with a curette and then destroy an extra margin by electrodessication, electrocoagulation or electrocautery. These steps may be repeated several times in the same treatment session. It may also be combined in selected patients with cryosurgery or ionizing radiation. Small lesions on sun-exposed parts of the skin are amenable to this technique. Deep and or recurrent lesions are not effectively treated and are cosmetically suboptimal if this modality is used.

b. **Cryosurgery:** It is used in primary lesions and some recurrent lesions in patients with bleeding disorders and in those in which other forms of surgery are contraindicated.

c. **Excision:** This is the optimal therapy for primary and recurrent lesions because margins can be microscopically assessed. Frozen sections or permanent sections may be done. The wound is closed primarily or flaps, grafts can be performed to close the defect.

d. **Mohs micrographic surgery:** This procedure is efficacious in dealing with recurrent lesions or some primary tumors displaying one or more of the risk factors associated with biologic aggressiveness.

e. **Laser surgery:** When available

2. **Nonsurgical**

   a. **Ionizing Radiation:** Used in selected patients with primary or recurrent tumors. It is palliative for patients with inoperable lesions. Combining this modality with others is used in aggressive tumors. It is contraindicated in verrucous carcinoma because of evidence that it may enhance its metastatic potential.

   b. **Intalesional therapy:** Interferon and other biologic response modifiers are reserved for tumors that are not manageable by the above recommended modalities.

F. **Miscellaneous:**

   1. Long-term follow-up is essential and is dependent on the individual case.
2. Prevention and education is an 'integral part of the care. Examples include, but are not limited to, sunscreen protection and self-examination. Tobacco products are significant risk factors for HPV and oral SCC and should be discouraged.
**Guidelines of Care for Malignant Melanoma**

**A. Definition:**

Cutaneous Malignant Melanoma is a potentially lethal tumor arising most often from epidermal nevomelanocytes and rarely from dermal nevomelanocytes. It is rare before puberty. Most cases are nonfamilial. However, there exist a small but significant number of cases that appear to be genetically determined. Some pigmented lesions may be precursors to melanoma.

**B. Rationale:**

Melanoma is the most frequent cause of death of diseases arising in the skin. An exponential increase in the incidence has been documented during the past 50 years. The lifetime risk of a person developing a melanoma was 1:150 in 1985. It is estimated to become 1:90 by the year 2000 if the trend of increase continues. There has been a gradual increase in the 5-year survival rate, from 41% to 83% between 1940 and 1980. This improvement is ascribed to early detection and surgical excision of early primary lesions.

**C. Risk factors:**

Risk factors include:

1. Family history and / or personal history of melanoma
2. Light complexion
3. Tendency to sunburn
4. History of severe sunburn
5. Many nevi
6. Presence of clinically atypical or dysplastic nevi
7. Tendency to freckle

**D. Diagnostic Criteria:**

1. **Clinical**

   a. **Patient History**

      i. Growth or change in size, shape or height of a pigmented skin lesion
      ii. Change in color - lightening, darkening, redness, shades of blue or gray to black
iii. Itching, crusting, bleeding, erosion and ulceration
iv. Personal and / or family history of melanoma and nonmelanoma cancers
v. Personal and / or family history of atypical or dysplastic nevi

b. Physical examination

i. Record location of lesion
ii. Note appearance of lesion - Acronym is ABCDE
   A= Asymmetry
   B= Border irregularity
   C= Color variegation
   D= Diameter
   E= Elevation
iii. Inspect and palpate around the lesion and over lymphatic drainage area
iv. Examine cutaneous surface for other melanomas, congenital and or atypical nevi
v. Examine pigmentation of nail fold and nail plate

E. Diagnostic Tests:

1. Biopsy

The biopsy technique of choice is excisional biopsy with narrow margins since further management is dependent on tumor thickness. Sometimes, a punch or an elliptical specimen may be performed taking care to sample what appears clinically the thickest, darkest part of the lesion.

2. Histopathology

The report for melanoma should include the diagnosis, tumor thickness in mms and the status of the margins if the nature of the specimen permits such an evaluation. In doubtful cases, another opinion and immunohistochemical stains may be requested.

3. Others

The following may be indicated at times:
a. Radiographic studies
b. Hematologic and / or chemistry studies
c. CT or MRI scan
d. Technetium scan
e. Ultrasound
f. Aspiration or open lymph node biopsy  
g. Scintigraphy to determine the direction of lymph flow  
h. Radionuclide scans using gallium - 67 citrate as well as monoclonal ABS

F. Staging Criteria:

A thorough history and physical examination is usually sufficient. A practical, clinically useful system is as follows:

**Stage I**: Absence of clinical and / or histologic evidence of tumor in regional lymph nodes or distant sites. This stage may also 'include cases of local recurrence, satellitosis and / or in-transit metastasis.

**Stage II**: Clinically and / or histologically positive regional lymph nodes.

**Stage III**: Distant metastases as determined by history, physical examination, radiographic studies, laboratory profile and / or histologic documentation at sites beyond regional lymph node basin.

G. Prognostic Evaluation

The prognosis of stage I melanoma is based on Breslow thickness and can be categorized as follows:

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Thickness of Primary lesion (mm)</th>
<th>Five year survival %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum risk</td>
<td>&lt; 0.76</td>
<td>96-99</td>
</tr>
<tr>
<td>Low risk</td>
<td>0.76-1.50</td>
<td>87-94</td>
</tr>
<tr>
<td>Intermediate risk</td>
<td>1.51-4.0</td>
<td>66-77</td>
</tr>
<tr>
<td>High risk</td>
<td>&gt;4.0</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>

Prognosis of stage II melanomas depends on the number of nodes involved. Prognosis for stage III disease is guarded. For stage III melanoma, prognosis is influenced by the number of metastatic sites, visceral and / or nonvisceral involvement- and resectability of metastases. Prognosis is grave.

H. Treatment:

1. **Surgery**

   This is the treatment of choice for primary melanoma and for some operable metastases. For melanoma in-situ and melanomas of less than 1.0 mm thickness, a margin of 1 cm is usually adequate. This may be modified
according to the anatomic location, proximity to vital structures and other patient considerations.

For tumors of more than 1.0 mm thickness, margins are usually larger than 1.0 cm but no uniform standard exists at present.

For elective node dissection (END), this procedure is not of value in the patients whose tumors are less than 0.76 mm. For tumors thicker than 0.76 mm there is no uniform standard at this time.

Mohs micrographic surgery is used as a tissue-saving technique especially on the face. Cryosurgery is recommended by some for certain lentigo maligna lesions.

Therapeutic lymph node dissection is done when clinically suspect nodes are identified except in patients with uncontrolled distant metastasis or other medical contraindication.

Surgery for metastatic disease is effective palliative for some isolated, operable metastases.

Chemotherapy with dacarbazine (DTIC) is currently regarded as the most effective single drug. Combination chemotherapy is used but its benefits are not clear. High dose chemotherapy followed by autologous bone marrow transplantation shows some promise but needs further evaluation.

Isolation perfusion is used in selected patients with in-transit metastases on the limbs.

Radiotherapy may be used in large lentigo maligna in the elderly or for palliative treatment of metastases or for local recurrences.

BCG and other immunostimulants injected into the intradermal metastases may result in tumor regression. However, BCG has been disappointing for visceral metastases.

Biologic response modifiers such as interferons, interleukins and tumor necrosis factor is evolving but is not presently a standard treatment. Other modalities include melanoma vaccines, lymphokine activated killer cells, tumor infiltrating lymphocytes. Hormonal therapies in the form of Tamoxifen, MSH conjugated to monoclonal antibodies have been tried but their success is limited.
I. Follow-up:

Patients should be followed up regularly by the primary physician, surgeon, dermatologist and / or oncologist. Long-term follow-up is essential to detect recurrences and / or new primary lesions. Complete skin exam to screen for atypical nevi is recommended along with photographic documentation.

Patients of all risk categories should be educated as to what constitutes suspect lesions. Self examination as well as photoprotection should be reinforced and should be considered part of a public screening program and education.