Dermatologic Applications of Photodynamic Therapy

DESCRIPTION

Photodynamic therapy (PDT) refers to light activation of a photosensitizer to generate highly reactive intermediaries, which ultimately cause tissue injury and necrosis. Photosensitizing agents, administered orally or intravenously, have been used in nondermatologic applications and are being proposed for use with dermatologic conditions such as actinic keratoses and non-melanoma skin cancers.

Two common photosenitizing agents are 5-aminolevulinic acid (5-ALA) and its methyl ester methyl, aminolevulinate (MAL). When applied topically, these agents pass readily through abnormal keratin overlying the lesion and accumulate preferentially in dysplastic cells. 5-ALA and MAL are metabolized by underlying cells to photosensitizing concentrations of porphyrins. Subsequent exposure to photoactivation (maximum absorption at 404-420 nm and 635 nm, respectively) generates reactive oxygen species which are cytotoxic, ultimately destroying the lesion. PDT can cause erythema, burning, and pain. Healing occurs within 10 to 14 days, with generally acceptable cosmetic results. PDT with topical ALA has been investigated primarily as a treatment of actinic keratoses. It has also been investigated as a treatment of other superficial dermatologic lesions, such as Bowen's disease, acne vulgaris, mycoses, hidradenitis suppurativa, and superficial and nodular basal cell carcinoma. Potential cosmetic indications include skin rejuvenation and hair removal.

Actinic keratoses are rough, scaly, or warty premaligant growths on sun-exposed skin that are very common in older individuals with fair complexions, with a prevalence of >80% in fair-skinned people over the age of 60. In some cases, actinic keratosis may progress to squamous cell carcinoma. Available treatments for actinic keratoses can generally be divided into surgical and non-surgical methods. Surgical treatments used to treat one or a small number of dispersed individual lesions include excision, curettage (either alone or combined with electrodesiccation), and laser surgery. Non-surgical treatments include cryotherapy, topical chemotherapy (5-fluorouracil [5-FU] or masoprocol creams), chemexfoliation (also known as chemical peels), and dermabrasion. Topical treatments are generally used in patients with multiple lesions and the involvement of extensive areas of skin. Under some circumstances, combinations of different treatment methods may be used.

Non-melanoma skin cancers are the most common malignancies in the Caucasian population. Basal cell carcinoma (BCC) is the most common cutaneous malignancy in humans and is most often found in light-skinned individuals. Although the tumors rarely metastasize, they can be locally invasive if left untreated, leading to significant local destruction and disfigurement. The most common forms of BCC are nodular BCC and superficial BCC. Bowen's disease is a squamous cell carcinoma (SCC) in situ with the potential for significant lateral spread. Metastases are rare, with less than 5% of cases

advancing to invasive SCC. Lesions may appear on sun-exposed or covered skin. Excision surgery is the preferred treatment for smaller non-melanoma skin lesions and those not in problematic areas, such as the face and digits. Other established treatments include topical 5-fluorouracil, imiquimod, and cryotherapy. Poor cosmesis resulting from surgical procedures and skin irritation induced by topical agents can be significant problems.

In 1999, Levulan® Kerastick™, a topical preparation of ALA, in conjunction with illumination with the BLU-U™ Blue Light Photodynamic Therapy Illuminator, received approval by the U.S. Food and Drug Administration (FDA) for the following indication:

"The Levulan® Kerastick for topical solution plus blue light illumination using the BLU-U Blue Light Photodynamic Therapy Illuminator is indicated for the treatment of non-hyperkeratotic actinic keratoses of the face and scalp." The product is applied in the physician's office.

A 5-aminolevulinic acid patch technology (5-ALA Patch) is available outside of the U.S through an agreement between Intendis (part of Bayer HealthCare) and Photonamic GmbH and Co. KG. The 5-ALA patch is not approved by FDA.

Another variant of PDT for skin lesions are Metvixia® and the Aktilite CL128 lamp, each of which received FDA approval in July 2004. Metvixia® (Galderma, SA, Switzerland; PhotoCure ASA, Norway) consists of the topical application of methyl aminolevulinate (MAL) in contrast to ALA used in the Kerastick procedure, followed by exposure with the Aktilite CL 128 lamp, a red light source (in contrast to the blue light source in the Kerastick procedure). Broadband light sources (containing the appropriate wavelengths), intense pulsed light (IPL), pulsed dye lasers (PDL), and potassium titanyl phosphate (KTP) lasers have also been used. Metvixia® is indicated for the treatment of non-hyperkeratotic actinic keratoses of the face and scalp in immunocompetent patients when used in conjunction with lesion preparation (debridement using a sharp dermal curette) in the physician's office when other therapies are unacceptable or considered medically less appropriate.

POLICY

Photodynamic therapy may be considered **medically necessary** as a treatment of:

- Non-hyperkeratotic actinic keratoses of the face and scalp
- Low-risk (eg superficial and nodular) basal cell skin cancer only when surgery and radiation are contraindicated
- Bowen's disease (squamous cell carcinoma in situ) only when surgery and radiation are contraindicated

Photodynamic therapy is considered **investigational** for other dermatologic applications, including, but not limited to, acne vulgaris, high-risk basal cell carcinomas, hidradenitis suppurativa, and mycoses.

Photodynamic therapy as a technique of skin rejuvenation, hair removal, or other cosmetic indications is considered **not medically necessary.**

POLICY EXCEPTIONS

Federal Employee Program (FEP) may dictate that all FDA-approved devices, drugs or biologics may not be considered investigational and thus these devices may be assessed only on the basis of their medical necessity.

POLICY GUIDELINES

Surgery or radiation is the preferred treatment for low-risk basal cell cancer and Bowen's disease. If photodynamic therapy is selected for these indications because of contraindications to surgery or radiation, patients and physicians need to be aware that it may have a lower cure rate in comparison with surgery or radiation.

Investigative service is defined as the use of any treatment procedure, facility, equipment, drug, device, or supply not yet recognized by certifying boards and/or approving or licensing agencies or published peer review criteria as standard, effective medical practice for the treatment of the condition being treated and as such therefore is not considered medically necessary.

The coverage guidelines outlined in the Medical Policy Manual should not be used in lieu of the Member's specific benefit plan language.

POLICY HISTORY

8/2001: Approved by Medical Policy Advisory Committee (MPAC)

11/14/2001: Hyperlink inserted

1/23/2002: "Sources", "Type of Service", and "Place of Service" sections updated; Noncovered codes added

2/14/2002: Investigational definition added

5/2/2002: Type of Service and Place of Service deleted

5/28/2002: Code Reference section updated

3/25/2004: Reviewed by MPAC, remains investigational, Description section aligned with BCBSA policy # 2.01.44, FEP exception added, Sources updated

5/19/2004: Coding reviewed, no changes

7/15/2005: Policy reviewed by MPAC, Description section updated to include verbiage for acne vulgaris and other skin related conditions. Policy section updated to indicate that photodynamic therapy with topical ALA and exposure to blue and red light and photodynamic therapy with methyl aminolevulinate and exposure to red light are considered investigational for acne vulgaris and other skin related conditions. Photodynamic therapy for cosmetic indications is not considered medically necessary. Policy titled "Photodynamic Therapy (PDT) for Actinic Keratoses (AKs)" renamed "Photodynamic Therapy."

10/17/2005: Code Reference table reviewed, diagnosis code 702.0 deleted

8/3/2007: Policy reviewed, description updated to include BCC and change Metvix to Metvixia®. Policy title "Photodynamic Therapy for the Treatment of Actinic Keratoses and Other Skin Lesions" renamed "Dermatologic Applications of Photodynamic Therapy." Policy statement revised: Non-hyperkeratotic actinic keratoses, superficial BCC, and Bowen's disease changed from investigational to may be considered medically necessary; non-superficial BCC is considered investigational. CPT 96567, ICD-9 procedure code 99.83, and HCPCS J7308 moved to covered with note to see POLICY. Added ICD-9 codes173.0-173.9, 232.0-232.9, and 702.0 with note to see POLICY.

11/15/2007: Policy revisions approved by MPAC

8/21/2008: Policy reviewed, no changes

9/28/2009: Verbiage, "* Some covered procedure codes may have multiple descriptions. Coverage will **only** be made for covered codes when used for services outlined within the policy statement section." added to Coding Section.

04/23/2010: Policy description and guidelines updated regarding treatment approaches. Policy statement unchanged. FEP verbiage added to the Policy Exceptions section. Deleted outdated references from the Sources section.

08/03/2010: Policy description updated to add Metvixia® and the Aktilite CL128 lamp as an approved variant of PDT for skin lesions. Policy statement unchanged. Added HCPCS code J3490 for reporting Metvixia®.

03/07/2011: Added new HCPCS code J7309 for reporting Metvixia® and deleted J3490. Added ICD-9 codes 209.31-209.36 to the Code Reference section.

02/24/2012: Policy reviewed; no changes.

04/03/2013: Policy reviewed; no changes.

03/11/2014: Policy reviewed; no changes.

02/12/2015: Policy reviewed; description updated. Medically necessary policy statement updated to change "Superficial basal cell skin cancer" to "Low-risk (eg superficial and nodular) basal cell skin cancer." Investigational statement revised to change "non-superficial basal cell carcinomas" to "high-risk basal cell carcinomas." Policy guidelines updated to change "superficial basal cell cancer" to "low-risk basal cell cancer."

08/25/2015: Code Reference section updated for ICD-10.

SOURCE(S)

Blue Cross Blue Shield Association policy # 2.01.44

CODE REFERENCE

This may not be a comprehensive list of procedure codes applicable to this policy.

The code(s) listed below are ONLY medically necessary if the procedure is performed according to the "Policy" section of this document.

Covered Codes

Code Number	**Description**		
CPT-4			
96567	Photodynamic therapy by external application of light to destroy premalignant and/or malignant lesions of the skin and adjacent mucosa (e.g., lip) by activation of photosensitive drug(s), each phototherapy exposure session.		
HCPCS			
J7308	Aminolevulinic acid HCl for topical administration, 20% single unit dosage form (354 mg) (Levulan Kerastick for topical solution)		
J7309	Methyl aminolevulinate (MAL) for topical administration, 16.8%, 1 g (Metvixia)		
ICD-9 Procedure		**ICD-10 Procedure**	
99.83	Other phototherapy	6A600ZZ, 6A601ZZ	Phototherapy of Skin, Single/Multiple
ICD-9 Diagnosis		**ICD-10 Diagnosis**	

173.01, 173.11, 173.21, 173.31, 173.41, 173.51, 173.61, 173.71, 173.81, 173.91	Other malignant neoplasm of skin	C44.01, C44.111, C44.112, C44.119, C44.211, C44.212, C44.219, C44.310, C44.311, C44.319, C44.41, C44.510, C44.511, C44.519, C44.611, C44.612, C44.619, C44.711, C44.712, C44.719, C44.81	Basal Cell carcinoma code ranges
209.31 - 209.36	Merkel cell carcinoma code range	C4A.0 - C4A.9	Merkel Cell carcinoma (code range)
232.0, 232.1, 232.2, 232.3, 232.4, 232.5, 232.6, 232.7, 232.8, 232.9	Carcinoma in situ of skin	D04.0 - D04.9	Carcinoma in situ of skin (code range)
702.0	Actinic keratosis	L57.0	Actinic keratosis