Subject: Phototherapy and Excimer Laser for Vitiligo		Original Effective Date: 11/20/08
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Medical Coverage Guidance Approval Date: 6/25/14		

PREFACE

This Medical Guidance is intended to facilitate the Utilization Management process. It expresses Molina's determination as to whether certain services or supplies are medically necessary, experimental, investigational, or cosmetic for purposes of determining appropriateness of payment. The conclusion that a particular service or supply is medically necessary does not constitute a representation or warranty that this service or supply is covered (i.e., will be paid for by Molina) for a particular member. The member's benefit plan determines coverage. Each benefit plan defines which services are covered, which are excluded, and which are subject to dollar caps or other limits. Members and their providers will need to consult the member's benefit plan to determine if there are any exclusions or other benefit limitations applicable to this service or supply. If there is a discrepancy between this policy and a member's plan of benefits, the benefits plan will govern. In addition, coverage may be mandated by applicable legal requirements of a State, the Federal government or CMS for Medicare and Medicaid members. CMS's Coverage Database can be found on the following website: http://www.cms.hhs.gov/center/coverage.asp.

FDA INDICATIONS

Phototherapy for the treatment of vitiligo is a procedure, and is therefore, not subject to regulation by the FDA. However, the UVA & UVB devices used in this procedure are regulated by the FDA. A number of different phototherapy devices indicated for the treatment of psoriasis, atopic dermatitis, seborrheic dermatitis, vitiligo, and leukoderma have been approved by the FDA. Several phototherapy devices received 510(k) approval and are classified as Class II phototherapy units. [5]

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

The coverage directive(s) and criteria from an existing National Coverage Determination (NCD) or Local Coverage Determination (LCD) will supersede the contents of this Molina medical coverage guidance (MCG) document and provide the directive for all Medicare members. The directives from this MCG document may be followed if there are no available NCD or LCD documents available and outlined below.

There is no National Coverage Determination (NCD) that addresses UVB therapy for the treatment of vitiligo. [6]

INITIAL COVERAGE CRITERIA

Phototherapy and Excimer Laser treatment for vitiligo are not considered medically necessary because these treatments are generally performed for improvement in appearance or for cosmetic purposes.

CONTINUATION OF THERAPY

N/A

COVERAGE EXCLUSIONS

Phototherapy and Excimer Laser treatment for vitiligo are not considered medically necessary because these treatments are generally performed for improvement in appearance or for cosmetic purposes.

DESCRIPTION OF PROCEDURE/SERVICE/PHARMACEUTICAL

Phototherapy/Actinotherapy-is used to treat various dermatological skin conditions and has been defined by the American Academy of Dermatology as "exposure to nonionizing radiation for therapeutic benefit. It may involve exposure to ultraviolet B (UVB), ultraviolet A (UVA) or various combinations of UVB and UVA radiation."[1]

Photochemotherapy (PUVA) is the therapeutic use of radiation in combination with a photosensitizing chemical for various skin conditions. It currently involves the use of psoralens (typically oral or topical) prior to exposure to UVA radiation. Treatment with these modalities may involve partial or whole-body exposure.[1] Photochemotherapy includes psoralens (P) and Ultraviolet A (UVA) radiation, known as PUVA photochemotherapy.

Photodynamic Therapy (PDT)-PDT uses a laser or light energy to activate a photosensitizer or photosensitizing agent. The agent is topically applied to the skin. A light source is then used to activate the photosensitizer. This procedure allows specific areas of the skin to be treated.

Excimer Laser- A highly concentrated beam of ultraviolet light that provides targeted delivery of UV exposure to specific vitiligo patches or spots. The targeted delivery prevents exposure of adjacent skin to UV light.

Vitiligo- an acquired idiopathic dermatological disorder characterized by depigmentation of the skin and mucus membranes. It is characterized by depigmented macules, which have a predisposition to form larger lesions. These lesions may occur on the face, genitals, mucus membranes, hands, feet, and extensor or periorificial surfaces. Vitiligo occurs during childhood or in young adults between ages 10 to 30 years, but research studies indicate that it may occur at any age. It occurs equally in both men and women in all racial groups. [5]

GENERAL INFORMATION

Summary of Medical Evidence

Meta-analysis and Systematic reviews

A Cochrane review (2010) was conducted to assess all interventions used to manage vitiligo. 57 trials were assessed with 3139 participants. Most of the RCTs, which covered a wide range of interventions, had fewer than 50 participants. All of the studies assessed repigmentation, 6 measured cessation of spread, and 5 investigated the effect of treatment on quality of life. The majority of analyses showing statistically significant differences were from studies that assessed combination interventions which generally included some form of light treatment. Topical preparations, in particular corticosteroids, reported most adverse effects. Most of the studies assessed combination therapies which generally reported better results. This review found some evidence from individual studies to support existing therapies for vitiligo, but the usefulness of the findings is limited by the

different designs and outcome measurements and lack of quality of life measures. There is a need for follow-up studies to assess permanence of repigmentation as well as high quality randomised trials using standardised measures and which also address quality of life. [16]

A 2007 meta-analysis was conducted to compare the effectiveness of various treatment modalities used for vitiligo.[6] Phototherapy and photochemotherapy were both included in the analysis. A total of 63 studies of localized vitiligo and 117 studies for generalized vitiligo were evaluated and analyzed statistically. The authors concluded "UVB or PUVA therapy show the best results with the least side effects and are therefore treatments of first choice." [6] The analysis also evaluated the effectiveness of treatment based upon the location of depigmented lesions. The authors concluded "results of any treatment are better on the face and neck, less so on the trunk and poorest on the distal extremities.[6]

A 2006 systematic review of the excimer laser for vitiligo was conducted.[7] The authors indicate that 57% to 100% of plaques with repigmentation were noted by the end of treatment. The results are esthetically satisfactory plaques reaching 75% repigmentation. Typically, only 20% to 30% of treated plaques reach this level. Series reports show conflicting reports ranging from 0% to 75%. The authors concluded that excimer laser "appears to be a useful treatment of dermatologic disorders, especially for psoriasis and vitiligo…it should not be matched against conventional phototherapy but be considered as a complementary treatment option. Several prospective studies haves shown its efficacy and good tolerance; however, long-term follow-up is lacking and optimal parameters for treatment have not been fully determined." [7]

Phototherapy

Sapam et al (2012) performed a parallel-group, assessor blinded, randomized, controlled trial to compare the efficacy and adverse effects of narrowband UVB (NBUVB) with oral psoralen UVA (PUVA) therapy in the treatment of vitiligo. 56 patients aged 13-70 years with vitiliginous lesions involving more than 5% body surface area were randomized in a 1:1 ratio to oral PUVA or NBUVB phototherapy groups. The median repigmentation achieved at the end of the six-month therapy course was 45% in the NBUVB group and 40% in the oral PUVA group. The authors concluded that there was no significant difference in the mean degree of repigmentation; however, NBUVB carried a greater response rate and might be superior to oral PUVA with better tolerance and color match with the surrounding normal skin, as well as fewer side effects in the treatment of vitiligo. [13]

El-Zawahry et al (2012) conducted a small prospective, randomized controlled comparative clinical trial of UVA1 vs. narrow-band UVB phototherapy in the treatment of vitiligo. Twenty patients received NB-UVB and 20 received UVA1 three times weekly for 12 weeks. The UVA1 group was divided into two subgroups. Ten patients received moderate and 10 received low dose of UVA1. After 12 weeks NB-UVB was superior to UVA1. Response to UVA1 in vitiligo seems to be dose dependent and seems to be of limited value in treatment of vitiligo as a monotherapy. Further studies combining it with other lines of therapy such as systemic steroids may prove beneficial. [14]

A randomized controlled study was conducted by Abd El-Samad et al (2012) to evaluate the efficacy and safety of intradermal injection of 5-flurouracil (5-FU) combined with narrow-band ultraviolet B (NB-UVB) as a treatment option for vitiligo. The study included 60 vitiligo patients with overall symmetrical lesions affecting less than 30% of body surface area. For each patient, one side of the body was treated with NB-UVB alone (control side) while the other side was treated with NB-UVB therapy in addition to intradermal injection of 5-FU (50 mg/ml), 0.01-0.02 ml per injection with 1 cm apart in skin of vitiligo, every 2 weeks for 4 months. The overall repigmentation was significantly higher in the 5-FU side compared with control side in all body parts ($p < 0.001$) except for the acral lesions where the difference was not significant ($p = 0.561$). No systemic side effects of 5-FU were detected, and the majority of the patients reported pain during injections. Intradermal 5-FU injection in combination with NB-UVB could be considered as a simple, safe, tolerable and cheap technique for treatment of vitiligo. It shortens the duration of NB-UVB therapy and improves the outcome, repigmentation. Longer follow-up is needed. [17]

A low volume prospective study showing statistically significant differences between compared treatment groups showed that narrow band UVB (n=13, 41.9%) was superior to PUVA (n=9, 23.6%) comparing marked repigmentation to complete repigmentation in both treatment groups.[8] Fifty-six patients compared treatment of barrow band UVB with PUVA. Following 48 treatments, 64% of the narrow band group showed >50% improvement in body surface area affected compared with 36% in the PUVA group.[9]

Excimer Laser

Verhaeghe E et al (2011) conducted a small prospective intrapatient placebo-controlled randomized trial of 11 patients with vitiligo. In each patient, 3 lesions were selected and treated with NB-UVB, MEL and placebo during 24 sessions, respectively. Twenty percent of the lesions treated with NB-UVB achieved repigmentation scores above 50%. None of the lesions treated with MEL achieved a repigmentation higher than 50% after 24 sessions. [15]

A retrospective study of 32 patients receiving excimer laser treatments with 55 vitiliginous lesions was conducted.[10] A mean 23 treatments resulted in 52.8% of the lesions developing greater than 75% repigmentation. Repigmentation on the face occurred more frequently at 71.5% followed by the neck, scalp and genitalia at 60%, the extremities at 46.7% and no lesions on the feet or hands exhibited $\geq$ 75% repigmentation. A randomized controlled trial of lesser quality due to short follow-up compared the effectiveness of the excimer laser and 0.1% tacrolimus ointment with the excimer laser and monotherapy. Repigmentation occurred in 100% of the tacrolimus group compared with 85% in the second group.[10]

A randomized, open, prospective comparative study of systemic PUVA and NB-UVB study of 50 patients divided equally in TMP PUVA and NB-UVB groups.[12] The mean degree of repigmentation attained in the NB-UVB group was 52.24% over a mean treatment period of 6.3 months, whereas in the PUVA group it was 44.7% in a mean period of 5.6 months ($P = 0.144$). After excluding the results of therapy-resistant sites, hands and feet, the mean degree of repigmentation in the NB-UVB group was 67.57%, whereas in the PUVA group it was

54.2% (P = 0.007). The authors concluded "NB-UVB performed better in comparison to TMP PUVA in terms of mean total repigmentation when traditionally considered therapy-resistant sites were excluded."[12]

Sixty patients aged 6 to 70 years with vitiligo were studied to evaluate the variants (body sites, age, duration of the disease, and duration of the therapy) influencing the clinical response to UVB-NB therapy.[32] Face lesions obtained complete repigmentation in 68% of the patients, 57.89% in the neck, and 50% on the trunk during the first year of therapy. In young patients vs. adult patients, the neck lesions in 83.3% obtained a complete repigmentation vs. 46.15%, on the upper limbs in 28.57% vs. 9.52%, and on the lower limbs in 25% vs. 16.67%. Patients with recent onset vitiligo obtained a complete repigmentation in 83.33% of neck lesions, 33.33% in upper limbs, and 28.57% on lower limbs. Hands did not have a positive response in either group. The authors concluded "that certain body sites respond better than others to the UVB-NB therapy; patients, aged less than 20 years, with recent vitiligo, achieve more repigmentation; the duration of the therapy can influence the response of the lesions over hands and lower limbs, showing only mild repigmentation." [11]

Hayes published a directory report on phototherapy for vitiligo indicating that the evidence regarding the efficacy of UVB for the treatment of vitiligo is limited due to the small number of studies, variation in study design, different outcome measures, and the small sample size in the available studies. Additional well-designed, longer-term RCTs are required to adequately evaluate the safety and efficacy of NB-UVB and BB-UVB and to compare these techniques with other medical therapies for vitiligo. [5]

UpToDate has a review article on the treatment of Vitiligo that indicates many studies of treatments for vitiligo are of poor quality and evidence is limited, particularly for the long-term benefits and safety of therapies. For short-term benefits there is moderate quality evidence for topical corticosteroids and limited to moderate quality evidence for ultraviolet light therapy used alone or in combination with other topical or oral agents. [20]

Professional Organizations

The American Academy of Dermatology: There are no practice guidelines or protocol for the use of UVB for vitiligo patients. [2]

CODING INFORMATION: THE CODES LISTED IN THIS POLICY ARE FOR REFERENCE PURPOSES ONLY. LISTING OF A SERVICE OR DEVICE CODE IN THIS POLICY DOES NOT IMPLY THAT THE SERVICE DESCRIBED BY THIS CODE IS A COVERED OR NON-COVERED. COVERAGE IS DETERMINED BY THE BENEFIT DOCUMENT. THIS LIST OF CODES MAY NOT BE ALL INCLUSIVE.

CPT	Description
96567	Photodynamic therapy by external application of light to destroy premalignant and/or malignant lesions of the skin and adjacent mucosa (eg, lip) by activation of photosensitive drug(s), each phototherapy exposure session
96900	Actinotherapy (ultraviolet light)

96910	Photochemotherapy; tar and ultraviolet B (Goeckerman treatment) or petrolatum and ultraviolet B
96912	Photochemotherapy; psoralens and ultraviolet A (PUVA)
96913	Photochemotherapy (Goeckerman and/or PUVA) for severe photoresponsive dermatoses requiring at least four to eight hours of care under direct supervision of the physician (includes application of medication and dressings)

HCPCS	Description
E0691	Ultraviolet light therapy system panel, includes bulbs/lamps, timer, and eye protection; treatment area 2 sq. ft. or less
E0692	Ultraviolet light therapy system panel, includes bulbs/lamps, timer, and eye protection, 4 ft. panel
E0693	Ultraviolet light therapy system panel, includes bulbs/lamps, timer, and eye protection, 6 ft. panel
E0694	Ultraviolet multidirectional light therapy system in 6 ft. cabinet, includes bulbs/lamps, timer, and eye protection
S8948	Application of a modality (requiring constant provider attendance) to one or more areas; low-level laser; each 15 minutes

ICD-9	Description
709.01	Vitiligo

ICD-10	Description
L80	Vitiligo

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12/14/11 – New evidence review was conducted by the MCG Committee. The document was approved without revision.

2014 Update

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