BlueCross BlueShield of Alabama

Name of Policy:
Chemical Peels

Policy #: 052
Category: Surgical

Latest Review Date: July 2014
Policy Grade: A

Background:

As a general rule, benefits are payable under Blue Cross and Blue Shield of Alabama health plans only in cases of medical necessity and only if services or supplies are not investigational, provided the customer group contracts to have such coverage.

The following Association Technology Evaluation Criteria must be met for a service/supply to be considered for coverage:

1. *The technology must have final approval from the appropriate government regulatory bodies;*
2. *The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes;*
3. *The technology must improve the net health outcome;*
4. *The technology must be as beneficial as any established alternatives;*
5. *The improvement must be attainable outside the investigational setting.*

Medical Necessity means that health care services (e.g., procedures, treatments, supplies, devices, equipment, facilities or drugs) that a physician, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury or disease or its symptoms, and that are:

1. *In accordance with generally accepted standards of medical practice; and*
2. *Clinically appropriate in terms of type, frequency, extent, site and duration and considered effective for the patient's illness, injury or disease; and*
3. *Not primarily for the convenience of the patient, physician or other health care provider; and*
4. *Not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.*

Description of Procedure or Service:

A chemical peel refers to a controlled removal of varying layers of the epidermis and superficial dermis with the use of an agent such as phenol or trichloroacetic acid (TCA). The most common indication for chemical peeling is as a treatment of photoaged skin, i.e. correction of pigmentation abnormalities, solar elastosis, and wrinkles. However, chemical peeling has also been used as a treatment for multiple actinic keratosis, active acne, and acne scarring.

Chemical peels involve a controlled partial-thickness burn of the epidermis and the outer dermis. When skin is regenerated, a 2-3mm band of dense, compact collagen is formed between the epidermis and the damaged layers of the dermis, resulting in ablation of fine wrinkles and a reduction in pigmentation. These changes can be long term, lasting up to 15 to 20 years and may be permanent in some patients. Potential local complications include scarring, infection, hypopigmentation, activation of herpes simplex and toxic shock syndrome.

Chemical peels are often categorized according to the depth of the peel: categories include superficial medium-depth and deep chemical peels. The precise depth of the peel depends on the concentration of the agent used, duration of the application and the number of applications. Possible indications for each type of peel and common chemicals used, as described in 2005 by Cummings et al, is as follows.

Superficial peels (epidermal peels) affect the epidermis and the interface of the dermis-epidermis. This depth is considered appropriate for treating mild photoaging, melasma, comedonal acne and postinflammatory erythema. Common chemical agents used for superficial peels include low concentrations of glycolic acid, 10-20% trichloroacetic acid (TCA), Jessner's solution (a mixture of resorcinol, salicylic acid, lactic acid and ethanol), tretinoin, 5-fluorouracil (5-FU) and salicylic acid. As part of the treatment process, superficial peels generally cause mild erythema and desquamation, and the healing time ranges from one to four days, depending on the strength of the chemical agent. With superficial peels, patients often undergo multiple sessions; generally a total of six to eight peels performed weekly or every other week.

Medium-depth peels (dermal peels) extend through the epidermis to the papillary dermis. These are used for moderate photoaging, actinic keratoses and mild acne scarring. In the past, 50% TCA was a common chemical agent for medium-depth peels but its use has decreased due to a high rate of complications such as pigmentary changes and scarring. Currently, the most frequently used agent is a combination of 35% TCA with Jessner's solution or 70% glycolic acid. Phenol 88% alone is also used for medium-depth peels. The healing process involves mild to moderate edema, followed by the appearance of new, erythematous epithelium. Patients are advised to wait at least three months before resuming skin care services, such as superficial chemical peels, and repeat medium-depth chemical peels should not be performed for at least one year.

Deep chemical peels (another type of dermal peel) penetrate the midreticular dermis and are used for patients with severe photodamage. The most common chemical agent used is Baker's solution (which consists of 88% phenol, eight drops of Septisol, three drops of croton oil, and two mL of distilled water). The same depth can be achieved using 50% or greater TCA peels; however the latter has a higher risk of scarring and pigmentation problems. Phenol is cardiotoxic

and patients must be screened for cardiac arrhythmias or medical that are could potentially precipitate an arrhythmia. Phenol can also have renal and hepatic toxicities.

The likelihood and potential severity of adverse effects increases as the strength of the chemicals and depth of peels increases. With deep chemical peels, there is the potential for long-term pigmentary disturbances (i.e., areas of hypopigmentation) and selection of patients willing to always wear makeup is advised. Moreover, chemical peels reduce melanin protection so patients must use protective sunscreen for nine to twelve months after a medium- to deep-facial peel.

Policy:

Dermal chemical peels meet Blue Cross and Blue Shield of Alabama's medical criteria for coverage when used to treat **extensive actinic keratosis (greater than 10 lesions) when photodynamic therapy (PDT) with topical 5-aminolevulinic acid is not a treatment option due to the presence of hyperkeratotic lesions and the patient is unable to tolerate treatment with topical 5-FU**.

Epidermal chemical peels meet Blue Cross and Blue Shield of Alabama's medical criteria for coverage when used to treat **active acne.**

Chemical peels performed for photoaged skin, wrinkles or acne scarring **do not meet** Blue Cross and Blue Shield of Alabama's medical criteria for coverage and is considered **cosmetic**.

Blue Cross and Blue Shield of Alabama does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Cross and Blue Shield of Alabama administers benefits based on the member's contract and corporate medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

Key Points:

A key issue for the policy is the determination of whether the treatment is primarily cosmetic in nature. Regarding actinic keratoses, these are premalignant lesions, and the medical necessity for their destruction/removal is considered appropriate, although watchful waiting may also be an option. Review articles suggested that chemical peels might be appropriate when there are numerous lesions (i.e., ten or more), making treatment of the individual lesions impractical, and when the treatment constitutes a full-thickness necrosis of the epidermis, which is considered curative. Photodynamic therapy is another option for the treatment of patients with multiple actinic keratoses.

Review articles also suggested that chemical peels may be appropriate for treatment of active acne when other treatments have failed. While low concentrations of chemical agents can be administered by the patient at home, higher concentrations are administered in the

dermatologist's office. Superficial glycolic acid peels are usually done as an adjunct to other comedolytic therapy done in the office. Since chemical peeling does not represent a curative therapy, treatments may be continued over the course of years. Superficial peels for these patients represent a more intense form of therapy, inasmuch as referral to a dermatologist is required. Therefore patients with acne requesting coverage for chemical peels should have failed a trial of topical and oral antibiotic therapy for acne. Other applications of chemical peels, including treatment of photoaged skin, wrinkles, and acne scarring were considered cosmetic.

Active acne

Several randomized trials that used a split-face design have been published. Only one RCT was identified that included a placebo group; the others compared two chemical peel protocols to one another. The placebo-controlled trial was published in 2014 by Kaminaka et al in Japan. It was double-blind and included 26 patients with moderate to severe facial acne. Patients with moderate acne had six to 20 inflammatory lesions and up to 20 noninflammatory lesions, and patients with severe acne had 21 to 50 inflammatory lesions. Failure of previous treatments was not an explicit inclusion criterion. Patients were required to undergo a wash-out period of two months before study participation where they could not use topical or oral antibiotics, retinoids or corticosteroids. Participants then received a chemical peel treatment on a randomly selected side of the face and a placebo peel on the other side. Both treatments used the same pH acid gel vehicle (pH 2.0) and the active treatment was a 40% glycolic acid peel. Treatments were given every two weeks for a total of five applications, and the follow-up visit occurred two weeks after the last session (i.e., at ten-week follow-up). The overall therapeutic effect was judged by a blinded dermatologist as excellent or good for 23 (92%) of the chemical peel sides and ten (40%) of the placebo sides; the difference between groups was statistically significant, $p<0.01$. Moreover, there were statistically significant reductions in inflammatory lesions and total lesion counts at each two week assessment and at the final ten- week assessment. No serious side effects or systematic adverse effects were reported.

Among the trials comparing two chemical peel interventions, Levesque and colleagues in France published findings from a single-blind randomized split-face study that included 20 patients with active comedonal acne. To be eligible, patients needed to have at least five noninflammatory acne lesions on each side of the face and to have fewer than 30 inflammatory acne lesions on the entire face. Participants were required to stop using other acne medications prior to starting the chemical peel treatment. The treatments being compared were a salicylic acid peel and a lipophilic hydroxic acid (LHA) derivative of salicylic acid; patients received one treatment to one side of their face (selected randomly) and the other treatment to the second side. Treatments occurred every other week for a total of six peels. At the end of the treatment period, the reduction in the proportion of noninflammatory lesions was 55.6% on the LHA side and 48.5% on the salicylic acid side; the difference between groups was not statistically significant, $p=0.88$. The number of lesions decreased significantly between baseline and the end of treatment in both groups, $p<0.001$. Both treatments were well-tolerated (as assessed by a global tolerance scale); there was no significant difference between treatments in erythema, $p=0.10$.

Another single-blind RCT in acne patients was published in 2010 by Ilknur et al in Turkey. Treatments being compared in this study were glycolic acid peels and amino fruit peels. The study included patients with non-inflamed lesions and superficial inflamed lesions, with acne

Grades 0.25 to 2 according to Leeds criteria; patients were not required to have failed other treatments. Patients received a series of 12 peels on the two halves of their face at two-week intervals (total of six months). Twenty-four of 30 (80%) patients completed the study. The mean number of non-inflamed lesions on the glycolic acid side decreased from 49.1 (standard deviation [SD]: 40.6) at baseline to 18.3 (SD: 12.9) at six months. The mean number of non-inflamed lesions on the amino fruit acid side decreased from 45.6 (SD: 43.5) at baseline to 17.1 (SD: 14.2) at six months. The reduction in lesions was not significantly different between groups. Findings were similar for the other primary outcome, number of superficial inflamed lesions. At six months, the number of inflamed lesions was 6.9 (SD: 5.2) on the glycolic acid side and 7.0 (SD: 7.3) on the amino fruit acid side ($p>0.05$).

In 2008, Kessler et al published a single-center study evaluating chemical peels as adjuvant therapy in 20 patients who were at least aged 13 years and had mild to moderately severe facial acne with a minimum of ten papules and/or pustules. The study compared treatment with an alpha hydroxy acid (30% glycolic acid) and a beta hydroxy acid peel (30% salicylic acid). Patients were treated every two weeks for a total of six weeks and were followed for two months after the last treatment. Ten percent of the patients had completed a course of isotretinoin over a year before enrollment (use of isotretinoin within a year was an exclusion criterion). At the time of study enrollment, 75% of patients were using topical medication, and 25% were on oral antibiotics; no changes in acne medication were allowed during the study period. The authors did not report the length of time that patients had been using other acne treatments. The primary outcome was clinical response according to a blinded evaluator, categorized as good (more than 50% improvement), fair (21-50% improvement), poor (10-20% improvement), no change or worse. A total of 17 of the 20 patients were included in the analysis; one patient dropped out and two were lost to follow-up. At one month after the last treatment visit, acne lesions declined by 43% on the glycolic acid peel side and 47% on the salicylic acid peel side, a non-significant between-group difference. There was also no between-group difference in response at two months; the evaluator rated as having good or fair improvement 75% of the glycolic acid peel side and 80% of the salicylic acid peel side. Both chemical agents resulted in improvement compared to baseline. There were a similar number of adverse events with each of the chemical agents; common adverse events were redness and scaling.

None of the RCTs comparing two chemical pool protocols also included a control group of patients who received a different type of treatment; therefore, it is uncertain whether either type of peel was more effective than an alternative treatment.

Actinic keratoses

Actinic keratoses are sun-induced, pre-malignant lesions. Up to 80% of fair skinned individuals over age 60 have actinic keratoses. Clinically, actinic keratoses are rough, red, scaly macules or papules. The five clinical variants are erythematous, hyperkeratotic, verrucous, pigmented, and cutaneous horn. The histologic appearance of abnormal epidermal differentiation in actinic keratosis does not extend through the full thickness of the epidermis. When the full thickness of the epidermis is involved, the lesion is then classified as carcinoma-in-situ.

An estimated 10% of actinic keratoses will regress spontaneously. However, one per 1000 actinic keratoses will progress to invasive squamous cell carcinoma. The chance of an untreated

actinic keratosis transforming into an invasive squamous cell carcinoma is between 0.25% and 20%. Nearly 60% of squamous cell carcinomas are found to arise from actinic keratoses.

The available treatments for actinic keratoses can be divided into surgical and non-surgical methods. Surgical treatments used to treat one or a small number of dispersed individual lesions include excision, cryosurgery, curettage, and laser surgery. Non-surgical treatments include topical chemotherapy (fluorouracil or masoprocol creams), chemexfoliation (chemical peels), and dermabrasion. These methods 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.

A key issue for the policy is the determination of whether the treatment is primarily cosmetic in nature. Regarding actinic keratoses, these are premalignant lesions, and the medical necessity for their destruction/removal is considered appropriate, although watchful waiting may also be an option. Review articles suggested that chemical peels might be appropriate when there are numerous lesions (i.e., ten or more), making treatment of the individual lesions impractical and when the treatment constitutes a full-thickness necrosis of the epidermis which is considered curative. Photodynamic therapy is another option for the treatment of patients with multiple actinic keratoses.

No controlled studies evaluating chemical peels for treatment of actinic keratoses were identified. The search yielded one case series, a prospective study from Japan that included 46 patients, 32 with actinic keratoses and 14 with Bowen's disease. There was no minimum number of actinic keratoses required for inclusion; that is, the study did not specifically address treatment of multiple actinic keratoses. Patients received phenol peels with 100% pure phenol applied locally to the lesions once a month for a maximum of eight months (less if a complete was achieved). Biopsies were performed on all lesions before and at the end of therapy. Twenty-nine of the 32 (91%) patients with actinic keratoses achieved a complete response (defined as an undetectable lesion at least one month after the last phenol application). The average number of treatments for patients with actinic keratoses was 2.9. Ten of the 12 (83%) patients with Bowen's disease had a complete response and the average number of treatments in this group was 5.5. All patients were followed for at least a year after treatment; median follow-up was 2.8 years. By the one-year follow-up, two of 46 patients (4.3%), one with actinic keratoses and one with Bowen's disease, had experienced recurrences. No systemic side effects were reported. The study was limited by lack of a control group, and a small sample size, especially in the sub-set of patients with Bowen's Disease.

Summary

At the time of policy creation, review articles and clinical opinion supported the use of chemical peels for treating multiple actinic keratoses and as second-line treatment of active acne. More recent clinical input, obtained in 2010, continues to support the policy. In 2014, the first placebo-controlled RCT evaluating chemical peels for active acne was published and this trial found significantly better outcomes after treatment with a 40% glycolic acid peel compared with placebo treatment. There are no studies that demonstrate the medical necessity for use of chemical peels in the treatment of photoaged skin or acne-related scarring; thus these uses are considered not medically necessary.

Practice Guidelines and Position Statements
British Association of Dermatologists: In 2007, they published a guideline on the management of actinic keratoses. Chemical peels were given a 'C, III" rating, meaning that there is "poor evidence to support the use of the procedure" and the evidence consists of "opinions of respected authorities based on clinical experience, descriptive studies or reports of expert committees."

American Academy of Dermatology: In 2007, they published a guideline on management of acne vulgaris which included the statement, "There is limited evidence regarding the benefit of physical modalities including glycolic acid peels and salicylic acid peels."

Key Words:
Chemical peel, skin peel, chemical peels

Approved by Governing Bodies:
FDA clearance or approval may not be relevant for the chemical agents used in peeling because they are prepared in-office, may have pre-dated FDA approval and/or may be considered cosmetic ingredients.

Benefit Application:
Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.

ITS: Home Policy provisions apply
FEP: Special benefit consideration may apply. Refer to member's benefit plan. FEP does not consider investigational if FDA approved and will be reviewed for medical necessity.

Current Coding:
CPT code:	**15788**	Chemical peel, facial, epidermal
	15789	Chemical peel, facial, dermal
	15792	Chemical peel, nonfacial, epidermal
	15793	Chemical peel, nonfacial, dermal

References:

1. Bae BG, Park CO, Shin H et al. Salicylic acid peels versus Jessner's solution for acne vulgaris: a comparative study. Dermatol Surg 2013; 39(2):248-53.
2. Brodland DG and Roenigk RK. Trichloroacetic acid chemexfoliation (chemical peel) for extensive premalignant actinic damage of the face and scalp. Mayo Clin Proc, September 1988; 63(9): 887-896.
3. Cummings CW, Haughey BH, Thomas JR, et al. Otolaryngology: Head and Neck Surgery, 4th edition, 2005. Mosby, Chapter 29, pp. 700-711.

4. de Berker D, McGregor JM and Hughes Br. British Association of Dermatologists Therapy Guidelines and Audit Subcommittee. Guidelines for the management of actinic keratoses. Br J Dermatol, February 2007; 156(2): 222-230.
5. Dinehart SM. Actinic keratoses: scientific evaluation and public health implications. The treatment of actinic keratoses, J Am Acad of Dermotol 2000; 42:1.
6. Feldman SR, Fleishcer AB, Williford PM, and Jorizzo JL. Destructive procedures are the standard of care for treatment of actinic keratoses, J Am Acad of Dermotol 1999; 40:1.
7. Habif TP. Clinical Dermatology 5th Edition, 2009. Mosby, Chapter 27, p. 1015.
8. Ilknur T, Demirtasoglu M, Bicak MU et al. Glycolic acid peels versus amino fruit acid peels for acne. J Cosmet Laser Ther 2010; 12(5):242-5.
9. Jerant A.F. Early detection and treatment of skin cancer, Am Family Phys 2000; 62: 5.
10. Kaminaka C, Uede M, Matsunaka H et al. Clinical evaluation of glycolic acid chemical peeling in patients with acne vulgaris: a randomized, double-blind, placebo-controlled, split-face comparative study. Dermatol Surg 2014; 40(3):314-22.
11. Kaminaka C, Yamamoto Y, Yonei N, et al. Phenol peels as a novel therapeutic approach for actinic keratosis and Bowen disease: Prospective pilot trial with assessment of clinical, histologic and immunohistochemical correlations. J Am Acad Dermatol, April 2009; 60(4): 615-625.
12. Kessler E, Flanagan K, Chia C et al. Comparison of alpha- and beta-hydroxy acid chemical peels in the treatment of mild to moderately severe facial acne vulgaris. Dermatol Surg 2008; 34(1):45-51.
13. Lawrence N. New and emerging treatments for photoaging, Dermatologic Clinics 2000; 18:1.
14. Levesque A, Hamzavi I, Seite S et al. Randomized trial comparing a chemical peel containing a lipophilic hydroxy acid derivative of salicylic acid with a salicylic acid peel in subjects with comedonal acne. J Cosmet Dermatol 2011; 10(3):174-8.
15. Lincolin EA. Sun-induced skin changes, Primary Care; Clinics in Office Practice 2000; 27:2.
16. Morganroth GS and Leffell DJ. Nonexcisional treatment of benign and premalignant cutaneous lesions. Clin Plast Surg, January 1993; 20(1): 91-104.
17. Strauss JS, Krowchuk DP, Leyden JJ et al.; American Academy of Dermatology/American Academy of Dermatology Association. Guidelines of care for acne vulgaris management. J Am Acad Dermatol 2007; 56(4):651-63.
18. Van Scott EJ and Yu RJ. Alpha hydroxy acids: Procedures for use in clinical practice. Cutis, March 1989; 43(3): 222-228.

Policy History:

Medical Policy Group, 1996
TEC, July 1998
Medical Policy Group, 2000
Medical Policy Group, April 2002
Medical Policy Group, June 2002
Medical Policy Administration Committee, June 2002
Available for comment June 17-July 31, 2002
Medical Policy Group, June 2004 **(2)**
Medical Policy Group, July 2006 **(1)**

Medical Policy Group, July 2008 **(1)**
Medical Policy Group, July 2010 **(1):** Description, Key Points and Governing Bodies updated, policy statement unchanged.
Medical Policy Group, July 2011 **(1):** Added criteria for epidermal chemical peels for active acne to policy from DORS page; Added acne scarring to non-covered statement; Removed "for Actinic Keratosis" from title; Separated chemical peels into epidermal and dermal with appropriate criteria to match; Updated Key Points, Key Words, Coding and References related to "active acne"
Medical Policy Administration Committee, August 2011
Available for comment September 2 through October 17, 2011
Medical Policy Group, July 2012 (**4):** Updated Key Points and References. No changes to the policy statement.
Medical Policy Panel, July 2013
Medical Policy Group, July 2013 **(3):** Updated Key Points and References; no change in policy statement.
Medical Policy Panel, July 2014
Medical Policy Group, July 2014 **(3):** 2014 Updates to Description, Key Points & References; no change in policy statement; removed 2011 and older policy statements

---