

*Perspective*

A perspective on what's new in chemical peels

Niti Khunger¹, Charvi Chanana¹¹Department of Dermatology and STD, Vardhman Mahavir Medical College, Safdarjung Hospital, New Delhi, India.***Corresponding author:**

Niti Khunger,
Department of Dermatology
and STD, Vardhman Mahavir
Medical College, Safdarjung
Hospital, New Delhi, India.

drniti@rediffmail.com

Received : 04 January 2022
Accepted : 21 January 2022
Published : 15 February 2022

DOI
10.25259/CSDM_5_2022

Quick Response Code:

**ABSTRACT**

Chemical peels are resurfacing procedures, where a chemical agent causes controlled exfoliation of the skin, that leads to improvement of texture and pigmentary abnormalities. They have become very popular as they are simple, cost-effective, office procedures that are easy to learn and practice. The traditional chemical peels are glycolic acid, salicylic acid, and trichloroacetic acid, which have stood the test of time. Some of the newer peels include mandelic acid, ferulic acid, citric acid, pyruvic acid, jasmonic acid, azelaic acid, and retinol peels. The advantage of the newer peels is that they are available in combinations, achieving better efficacy, with reduced side effects. Acne, pigmentary dyschromias, and photoaging are common aesthetic indications for peels. They can also be used as add-on procedures for other conditions such as keratosis pilaris, macular amyloidosis, and seborrheic keratosis. Priming the patient is an important step toward a successful peel, leading to fewer complications. Careful patient and peel selection and post-procedure care are prerequisites to successful peeling. Newer variations in peeling such as sequential peels, segmental peels, body peels, lip and eye peels, combining peels with other procedures such as micro needling and lasers are some of the recent advances in chemical peels.

Keywords: Chemical peel, Acne, Pigmentation, Photoaging, Periocular, Lip, Nail

INTRODUCTION

Chemical peels are important procedures in a cosmetic or aesthetic practice as they are versatile and cost-effective. The concept of skin peeling by chemicals to beautify the skin has been used since time immemorial. Cleopatra used sour milk, containing lactic acid, and French women used old wine containing tartaric acid as beauty baths. With the advent of newer peels and newer combinations, there has been a resurgence of their popularity in recent times. According to the American Society of Plastic Surgeons, they are among the top five minimally invasive cosmetic procedures in practice.^[1] Chemical peels are basically cutaneous resurfacing procedures, that cause a controlled chemical exfoliation of the skin, followed by regeneration and remodeling of the epidermis and dermis leading to improved appearance of the skin.^[2] Some of the newer peels have added adjuvants that do not cause obvious peeling; hence, “chemical rejuvenation” is a more appropriate term.

VALUE OF PEELS IN AESTHETIC PRACTICE

The resurgence of popularity of peels among dermatologists, plastic surgeons, and estheticians is due to its several advantages. They are simple office procedures, easy to learn and practice, minimally invasive with little downtime, that perfectly suit today's busy lifestyles. Unlike lasers, they do not require equipment and costly maintenance and more importantly have minimal complications, even in skin of color. The long-term experience with chemical peels

has shown them to be safe and effective for a variety of common conditions such as dyschromias, photoaging, and acne. A wide array of peeling agents is now available; hence, treatment can be individualized, according to skin type.

CLASSIFICATION OF PEELS

Chemical peels are traditionally classified according to the depth of peeling as very superficial, superficial, medium depth, and deep peels [Table 1]. However, the depth can be variable, depending on the formulation of the peeling agent, amount of free acid, pre-peel skin preparation, skin condition, and method of application of the peel. It is preferable to standardize the method of skin preparation, priming agents, and application with the same formulation to achieve the desired depth.

INDICATIONS

Chemical peels can be used for various aesthetic and medical conditions [Table 2] acne, hyperpigmentation, photoaging, and skin rejuvenation are the main indications. Very superficial peels exfoliate the stratum corneum only, leading to smooth, translucent skin with a glow. These are called as lunchtime peels, party peels, or glow peels.

CONTRAINDICATIONS

Absolute contraindications to chemical peels include active infection, particularly herpes simplex, open wounds, and allergy to peeling ingredients. Relative contraindications include recent sun tanning, photosensitizing medications,

and pre-existing inflammatory dermatosis such as psoriasis, atopic dermatitis, pregnancy, radiation therapy, and unreliable patients. It was previously advocated that all resurfacing procedures are contraindicated with concomitant use of isotretinoin, due to increased risk of scarring. However, the recent evidence points that they are safe, particularly superficial, and medium depth peels, while deep peels should be avoided.^[3,4]

TYPES OF PEELS AND NEWER PEELS

Peels can be single agent peels, called as mono-peels or a combination of agents compatible in a single formulation called as combination peels [Table 3].^[5] The classic mono-peels are salicylic acid (SA 20–30%), glycolic acid (GA 20–70%), and trichloroacetic acid (TCA 15–50%). Other newer mono-peels include mandelic acid (10–40%), pyruvic acid, lactic acid, ferulic acid, and retinoic acid. The classic combination peel is the Jessner's peel (Lactic acid, SA and resorcinol). Phenol peel is also a combination of phenol with croton oil. The newer combination peels include modified Jessner's peel (lactic acid, SA and citric acid), salicylic - mandelic acid, VI peel (TCA, SA, tretinoin, phenol, and citric acid), polyhydroxy acids, lipohydroxy acids (LHA), and combination skin lightening peels.

Peels may also be classified according to their formulation as solution based peels, gel based peels and peeling pastes, creams, or ointments. Most of the chemical peels are available as solutions. Examples of solutions are glycolic acid 70%, TCA 25%, SA 20%, Jessner's solution, etc. Gel based peels are formulated as gels and are indicated for sensitive skins

Table 1: Classification of chemical peels.

Classification	Depth of exfoliation	Examples
Very superficial	Stratum corneum	Glycolic acid–30-50%, TCA-10%, Jessner's solution (1-3 coats), Salicylic acid 20-30%, Lactic acid 50%, tretinoin 1-5%
Superficial	Epidermis extending to papillary dermis	Glycolic acid–50-70%, TCA 10-30%, Jessner's solution (4-7 coats), Combination peels
Medium	Upper reticular dermis	Glycolic acid 70%, TCA 35-50%, Phenol 88%, Pyruvic acid
Deep	Mid reticular dermis	Baker Gordon phenol formula

Table 2: Indications of chemical peels.

Hyperpigmentation	Acne	Skin rejuvenation	Medical conditions
Melasma	Comedonal acne	Photoageing	Keratosis pilaris
Postinflammatory hyperpigmentation (PIH)	Papulopustular acne	Skin glow	Acanthosis nigricans
Freckles/Lentigines-spot peels	Acne with PIH	Mild static wrinkles	Macular amyloidosis
Periocular melanosis	Superficial acne scars	Deep static wrinkles	Onychomycosis
Lip melanosis		Striae	
		Dilated pores	

Table 3: Types of peels.

	Monopeels	Combination peels
Classic peels	Glycolic acid	Jessners peel
	Trichloroacetic acid	Modified Jessners peel
	Salicylic acid	Baker-Gordon peel
	Retinoic acid	
	Phenol	
Newer peels	Mandelic acid	Salicylic-mandelic acid peel
	Pyruvic acid	VI peel
	Lactic acid	Phytic acid
	Ferulic acid	Lipohydroxy acid (LHA)
	Jasmonic acid	Polyhydroxy acid (PHA)
	Tartaric acid	Black peel
	Malic acid	

as they deliver the active agent slowly into the skin and hence are better tolerated.^[2] They cause minimal irritation and exfoliation, for examples, are mandelic acid 40% gel, salicylic-mandelic acid combination gel, lactic acid 90% gel, etc. Chemical peels are also available as pastes, ointments or creams. Examples are Unna's paste containing zinc oxide 60%, SA 20% ointment, and retinol cream.

The alpha hydroxy acids (AHA) are a group of acids that include glycolic acid, which is the older one, and mandelic acid, lactic acid, tartaric acid, citric acid, and malic acid, which are the newer peels. AHAs are water soluble and act as exfoliators on the skin surface. They are useful in persons with dry, rough skin, and in conditions such as keratosis pilaris. It is important to use sunscreen during the peeling period as they can cause photosensitivity. Beta hydroxy acids are a group of acids that include SA and some forms of citric acid. They are useful in conditions with oily skin. LHA is derived from SA. Being more fat soluble, it penetrates the skin more slowly and is useful for treating acne in patients with sensitive skin.^[6] Polyhydroxy acids are a group of acids that includes lactobionic acid, gluconolactone, and maltobionic acid. They have a larger molecular structure as compared to AHA, penetrate the skin more slowly, gently exfoliate the skin and are useful for sensitive skins and conditions such as rosacea. Mandelic acid is an AHA with a large molecular weight. It penetrates the skin more slowly, is less irritating, and also has skin lightening properties and antibacterial action. Thus, it is a very useful peel for acne, melasma, and hyperpigmentation, particularly in sensitive skins.

NEWER WAYS TO PEEL

Chemical peels are versatile procedures and newer modifications have further increased their versatility.^[5]

Sequential peels

In sequential peels, more than one peel at a time is used in a sequential manner as the two peels may not be compatible

in a single formulation. Examples are SA peel followed by trichloroacetic peel. The advantage is that the first peeling agent enhances the penetration of the second, thus increasing depth of the peel, without increasing the concentration of the peeling agents.^[7]

Segmental peels

In segmental peels, to make the peels safer, different peeling agents are used in different cosmetic units at the same session. Example, for a patient with inflammatory acne with sensitive dry skin on the cheeks and an oily T-zone, a gel based salicylic - mandelic acid peel is applied on the cheeks and an alcoholic based SA peel is applied on the forehead and nose. In skin type I-III, medium depth peels can be applied on the cheeks and deep peels in the perioral areas with severe photoaging.^[8]

Switch peels

In switch peels, the peeling agents are changed in subsequent sessions, making the treatment more flexible and customized according to changes in the patient's skin. This increases safety and efficacy.

Punctuated peels

In this method, 88% phenol is applied in a punctuated manner in the static wrinkles to promote rejuvenation. This has a lower risk of side effects and reduced downtime because a very small quantity is applied in a pointed interrupted manner 3 mm apart, using a pointed cocktail stick precisely within the wrinkles. A study of 17 patients, with skin type I-III, treated with 0.2 ml of 88% phenol in the wrinkles on the periorcular, periorbital, and preauricular regions for five sessions at monthly intervals reported improvement in static wrinkles in 58.82%.^[9] There was also histological evidence of improvement in elastosis and collagen deposition, which was more in patients with severe photodamage.

PRIMING AND PRE-PEEL CARE

Pre-peel care or priming is done before chemical peeling. Priming aims at thinning the stratum corneum to enhance penetration of chemical agents, accelerate healing, and reduce the incidence of post-inflammatory hyperpigmentation (PIH). It is particularly important in darker skins, Fitzpatrick Type IV-VI that are prone to PIH. Priming should begin at least 2–4 weeks before the chemical peel and stopped 3–5 days prior.^[3,8] Patients should avoid UV exposure and apply a broad-spectrum sunscreen that blocks both UVA and UVB each morning. Sunscreen should ideally be started at least 3 months before the procedure and continued thereafter. Tretinoin cream (all-trans retinoic acid) is a useful priming agent that causes decreased epidermal adhesion, resulting in

thinning of the stratum corneum, and enabling the peeling agent to penetrate the skin more rapidly and deeply. Tretinoin also enhances epithelial differentiation and accelerates epithelial proliferation, hence hastening re-epithelialization. Hydroquinone 2–4% cream reduces the risk of PIH and should be initiated at least 2 weeks before a chemical peel. Other topical agents that are used as priming agents include glycolic acid 5–10%, salicylic acid 5–10%, kojic acid 1–4%, azelaic acid, and topical corticosteroids. Patients should be instructed to avoid waxing, electrolysis, and dermaplaning for a minimum of 3–4 weeks before chemical peeling. Individuals with a history of recurrent herpes simplex virus infection should be commenced on systemic antiviral treatment before medium-depth and deep chemical peeling and continued for 7 days post-procedure.^[8]

POST-PROCEDURE CARE

Good post-peel care is essential for recovery of the skin and preventing complications. The patients should be instructed to wash the face gently with a non-soap cleanser and to avoid rubbing, scrubbing, scratching, or picking their skin. A bland emollient and sunscreen should be applied regularly to the skin until peeling is complete. Ice packs may be used for mild edema and burning, while topical steroids may be required for severe edema and discomfort. Thereafter the products used in pre-peel care should be restarted.

CHEMICAL PEELS IN ACTIVE ACNE

Chemical peels are being increasingly used in the management of acne. They are good adjuvants in active acne. SA, mandelic acid, retinoic acid (yellow peel), glycolic acid, TCA, Jessner's peel, pyruvic acid, azelaic acid, and combination peels are useful peels for acne. Chemical peels in acne offer several benefits. Since many peels like SA, are lipophilic, they can easily target the sebaceous glands. Comedones can easily be extracted, post-acne pigmentation, and oiliness can be reduced and there can be improvement of superficial post-acne scars. In a study of 36 patients, Fitzpatrick Type IV-V, Jessner's solution (JS) was compared with SA 30% in the management of acne vulgaris and post-acne hyperpigmentation.^[10,11] Three sessions were performed every fortnight. Significant improvement was observed in the inflammatory, non-inflammatory lesions, and in the pigmentation. There was no difference between the two reagents, though SA was superior for the non-inflammatory lesions and led to faster improvement in inflammatory lesions. Side effects such as burning, exfoliation, and acneiform eruptions were mild and transient. PIH was observed in one patient treated with JS. Thus, chemical peels were safe and effective even in darker skin types. In a study of 45 patients, a chemical peel containing SA, pyruvic acid, and retinoic acid (Definisse™ classic peel by Relife)

was applied at 3 week intervals for four sessions.^[11] Patients were evaluated by Michaelson's score and Subject Global Aesthetic Improvement Scale. Improvement was seen in 96% patients. In this combination peel, SA and pyruvic acid are lipophilic and also have an anti-inflammatory effect, while topical retinoic acid allows a better penetration of the other acids into the dermis. A study comparing 45% mandelic acid with 30% SA found both were equally efficacious, but MA had better tolerated, while SA was more efficacious in treating non-inflammatory lesions.^[12] Comparative study of efficacy and safety of 45% mandelic acid versus 30% SA peels in mild-to-moderate acne vulgaris. Another study compared azelaic acid with pyruvic acid in adult acne and reported that both peels were equally effective. A review of chemical peels in active acne concluded that both glycolic acid and SA are effective and well tolerated, with SA showing a faster response.^[13]

CHEMICAL PEELS IN MELASMA AND HYPERPIGMENTATION

Chemical peels are efficacious in the management of melasma and are often used as second line of treatment. Sahu and Dayal conducted a study on 90 patients with melasma and concluded that 15% TCA and 30% GA peel were equally effective and superior than 92% lactic acid peel in treatment of epidermal melasma.^[14] They also suggested that 30% GA peel is best among the three peels for melasma in Indian patients. Bhardwaj *et al.* reported their investigations on the mode of action of chemical peels to treat hyperpigmented and photoaged skin.^[15] They observed that besides an exfoliant action, a combined TCA-lactic acid peel strongly inhibits tyrosinase, collagenase and elastase, leading to reduced pigment, and promoting increased collagen and elastin.

CHEMICAL PEELS IN PHOTOAGEING

Medium depth chemical peels are also useful to treat extrinsic and intrinsic ageing. In a comparative study of GA 70% with TCA 15% versus TCA 35%, it was observed that both peels were effective. TCA 35% was more effective but had lower tolerability.^[16]

NEWER INDICATIONS FOR CHEMICAL PEELS

Chemical peels have been used as adjuvant therapies for keratosis pilaris, striae distensae, acanthosis nigricans, macular amyloidosis, PIH, rhinophyma,^[17] repair of ear lobe,^[18] and surface nail abnormalities.^[19] Low strength peels have also been used 2–4 weeks before lasers to prevent PIH. A recent review on chemical peels as field therapy for actinic keratosis (AK) reported that chemical peels were effective in reducing AK counts, with minimal adverse effects. It was useful in diffuse widespread lesions and may also be

potentially useful in prevention of additional AK formation and development of keratinocyte carcinomas.^[20]

CHEMICAL PEELS IN MALES

The demand for aesthetic procedures in males has increased tremendously. Male skin is thicker and has more pilosebaceous activity, hence may require more sessions, or higher strength peels. However, they are less likely to be compliant with topical applications and avoidance of sun exposure. Common indications for chemical peels in men include acne vulgaris, acne scarring, melasma, actinic keratosis, photodamage, rosacea, keratosis pilaris, and periorbital rejuvenation.^[21]

PERIOCCULAR PEELS

Chemical peels are been increasingly used for rejuvenating and treating hyperpigmentation in the periocular area. Glycolic acid at a concentration of 20–70% is the most common agent used. The effect of glycolic peel depends on the time it is left on skin. Trichloroacetic acid has also been used for rejuvenation. In a comparative study, 20% glycolic acid peeling was more effective than 15% lactic acid and 12% ferulic acid performed at 3 weekly intervals, though ferulic acid was better tolerated.^[22] In another study, three sessions of 30% LA peel appeared to be better, more effective and better tolerated than 20% GA peeling used 3 weeks apart in type four skin.^[23] Erythema, burning, tearing, scaling, and transient darkness were the transient complications observed.

LIP PEELS

Lip peeling is a recent addition in the rejuvenation of the lips. It can help in improving the surface texture, pigmentation, and also to some extent act as a lip enhancer. Indications for lip peeling include lip rejuvenation due to photodamage, lip pigmentation, rough texture, and wrinkles. Mandelic acid, lactic acid, and glycolic acid are the preferred peels on the lips for pigmentation and rejuvenation. Phenol peels are more potent deep peels and are also being used as lip enhancers. The advantage of chemical peeling on the lips over fillers is that additionally they have an anti-aging effect by causing epidermal rejuvenation, improving lip wrinkles, and pigmentary abnormalities caused by photodamage.^[24]

BODY PEELS

Although chemical peels are traditionally most commonly applied on the face, they are being increasingly used in other body areas, including the hands, feet, décolletage area, and trunk to treat various conditions such as uneven skin tone and texture, fine lines, and actinic damage. The major difference between facial peels and body peels is that healing

is slower and unpredictable in the non-facial regions due to lesser concentration of appendageal structures. Risk of systemic absorption is greater due to application on larger surface area.

The commonly used agents are glycolic acid, lactic acid, mandelic acid, and trichloroacetic acid. The classic body peel is the Cook's peel, which is a sequential peel of glycolic acid 70% gel followed by TCA 40% lotion.^[25] It has been used to treat lentigines, actinic keratoses, poikiloderma and photodamaged skin on the chest and décolleté. Combination of glycolic, lactic and mandelic acids have been used to treat keratosis pilaris. A study reported that glycolic acid 50–70% significantly improved follicular hyperpigmentation in patients with keratosis pilaris after 4 sessions, but there was no significant difference at the 5-year follow-up compared with pretreatment values.^[26] Other indications of body peels include truncal acne, acanthosis nigricans, frictional melanosis, PIH, and striae.

NAIL PEELS

Chemical peeling of the nail is a recent concept. It has been used for improvement of surface abnormalities, such as rough, dull, discolored, hyperkeratotic, irregular surface abnormalities of the nails, and trachynychia. In an initial study, 70% glycolic acid was applied for 45 min in 22 patients with dry rough nails as a single session. There was good improvement in 80%, average in 10%, whereas 10% were non-responsive.^[27] In another right-left comparative study in 15 patients, 70% glycolic acid versus combination peel of phenol 8% with 15% TCA five patients showed good improvement, seven showed moderate, while three responded poorly. Two patients developed leukonychia due to prolonged exposure to glycolic acid.^[28] Another recent study used the black peel containing a combination of black acetic acid 50%, SA 0.5%, tetrahydrojasmonic acid 6%, 10% bio sulfur, and 0.1% potassium iodide, in combination with 8% ciclopirox olamine in two patients with onychomycosis and comorbidities and reported a favorable response at 6 months.^[29] Proper precautions regarding protection of the cuticles while applying the peel is essential. Further studies are required to prove utility and indications of chemical peels in nail disorders.

COMBINATION PROCEDURES

Chemical peels have also been used in combination with other procedures such as micro needling, microdermabrasion, lasers, botulinum toxin, and fillers for enhanced results in the management of acne scars, pigmentation, photoaging, and skin rejuvenation.^[29] A study conducted in 60 patients concluded that combination of micro needling and Jessner's solution chemical peel showed better clinical improvement in treating atrophic acne scars as compared to micro needling

Table 4: Complications of chemical peels.

Severity	Complication	Severity	Complication	Severity	Complication
Mild	Early <ul style="list-style-type: none"> ▪ Irritation ▪ Burning ▪ Erythema ▪ Oedema ▪ Bacterial/ viral/fungal infection Delayed <ul style="list-style-type: none"> ▪ Pruritus ▪ Acneiform eruptions ▪ Persistent erythema ▪ Demarcation lines ▪ Milia ▪ Pigmentary changes (hyperpigmentation and hypopigmentation) ▪ Increased pigmentation of naevi 	Moderate	Early <ul style="list-style-type: none"> ▪ Textural changes, ▪ Atrophic Scarring ▪ Allergic reactions ▪ Laryneal oedema ▪ Salicylism Delayed <ul style="list-style-type: none"> ▪ Hypertrophic scarring ▪ Keloids 	Severe (Deep phenol peels)	Early <ul style="list-style-type: none"> ▪ Toxic shock syndrome ▪ Cardiotoxicity ▪ Acute kidney injury Delayed <ul style="list-style-type: none"> ▪ Lower lid ectropion ▪ Corneal damage ▪ Significant scarring ▪ Permanent dyspigmentation.

and chemical peels alone.^[30] In a series of seven patients with Nevus of Ota, combination of 1064-nm Q-switched neodymium-doped yttrium-aluminum-garnet laser with modified Jessner's peel showed more than 50% reduction in pigment in a majority of patients in eight sessions. The authors concluded that a significant reduction in pigmentation was faster with fewer sessions and reduced cost.^[31]

HOME PEELS

The desire to have a smooth flawless skin has created a rapidly growing market for products that can deliver a little more than topical creams, with minimum downtime. The internet is flooded with a lot of information and products for home-based peels. The practitioner should be aware of these products as patients often ask advice on the selection and usage of these products. They are also useful for initiation of treatment as advanced priming agents and as maintenance therapy after professional chemical peels. Their popularity has further increased during the COVID 19 pandemic and the lockdown. Most of these products contain similar products as physician grade peels, but in a lower concentration. Some examples are 5–10% glycolic acid, 10–20% lactic acid, 10–15% SA, 10–15% mandelic acid, <1% retinol, and lipohydroxy acids. They are available as solutions, serums, medicated pads, masks, and creams. Enzyme peels derived from fruits such as papaya and pumpkin peels are popular ingredients in home peels. They gently exfoliate the skin and are better tolerated. The disadvantage of home peels is that though convenient, overenthusiastic, unsupervised use can result in irritation and complications.

COMPLICATIONS OF CHEMICAL PEELS

Chemical peeling is a relatively safe procedure. Appropriate patient selection, consistent pre-procedure, and post-procedure care minimizes the risk.^[32–34] However, side effects may occur,

which are mostly mild, rarely severe [Table 4].^[33,34] A survey of Australian dermatologists, reported that hyperpigmentation (67%), persistent erythema (52%), edema (37%), and acne or folliculitis were the most common complications seen.^[35] Excessive irritation and burning are the common early complications and can be managed with moisturizers and topical steroids. Short course of oral steroids may be given if there is edema, particularly in the periocular region. Intralesional steroids may be indicated in areas of impending hypertrophic scarring. Indicators of hypertrophic scarring include persistent erythema, textural abnormality, and more common on the mandibular area. Prolonged erythema may be treated with pulsed-dye or dual wavelength vascular lasers. PIH can occur in darker skin types or with prolonged sun exposure following peels. It is managed by skin lightening agents.

CONCLUSION

Chemical peels are ideal for patients looking to improve skin texture and tone. They are simple, cost effective office procedures, with little downtime. Newer peels, newer ways to peel and combinations with other procedures keep chemical peels among the top five minimally invasive aesthetic procedures performed globally.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. The American Society of Plastic Surgeons. Plastic Surgery Statistics Report; 2020. Available from: <https://www.plasticsurgery.org/documents/News/Statistics/2020/top-five-cosmetic-plastic-surgery-procedures-2020.pdf> [Last accessed on 2021 Dec 02].
2. Khunger N. IADVL Task Force. Standard guidelines of care for chemical peels. *Indian J Dermatol Venereol Leprol* 2008;74:S5–12.
3. Mysore V, Mahadevappa OH, Barua S, Majid I, Viswanath V, Bhat RM, *et al.* Standard guidelines of care: Performing procedures in patients on or recently administered with isotretinoin. *J Cutan Aesthet Surg* 2017;10:186–94.
4. Chandrashekar BS, Vadlamudi L, Shenoy C. Safety of performing superficial chemical peels in patients on oral isotretinoin for acne and acne-induced pigmentation. *J Clin Aesthet Dermatol* 2021;14:41–3.
5. Khunger N. *Step by Step Chemical Peels*. 2nd ed. New Delhi, India: Jaypee Medical Publishers; 2014. p. 7–15.
6. Zeichner JA. The Use of lipohydroxy acid in skin care and acne treatment. *J Clin Aesthet Dermatol* 2016;9:40–3.
7. Zayed AA, Sobhi RM, El Aguizy RMS, Sabry D, Mahmoud SB. Sequential peeling as a monotherapy for treatment of milder forms of acne vulgaris. *J Cosmet Dermatol* 2020;19:1381–7.
8. Lee KC, Wambier CG, Soon SL, Sterling JB, Landau M, Rullan P, *et al.* Basic chemical peeling: Superficial and medium-depth peels. *J Am Acad Dermatol* 2019;81:313–24.
9. de Mendonça MC, Segheto NN, Aarestrup FM, Aarestrup BJ. Punctuated 88% phenol peeling for the treatment of facial photoaging: A clinical and histopathological study. *Dermatol Surg* 2018;44:241–7.
10. How KN, Lim PY, Wan Ahmad Kammal WS, Shamsudin N. Efficacy and safety of Jessner's solution peel in comparison with salicylic acid 30% peel in the management of patients with acne vulgaris and postacne hyperpigmentation with skin of color: A randomized, double-blinded, split-face, controlled trial. *Int J Dermatol* 2020;59:804–12.
11. Calvisi L. Efficacy of a combined chemical peel and topical salicylic acid based gel combination in the treatment of active acne. *J Cosmet Dermatol* 2021;20 Suppl 2:2–6.
12. Dayal S, Kalra KD, Sahu P. Comparative study of efficacy and safety of 45% mandelic acid versus 30% salicylic acid peels in mild-to-moderate acne vulgaris. *J Cosmet Dermatol* 2020;19:393–9.
13. Al-Talib H, Al-Khateeb A, Hameed A, Murugaiah C. Efficacy and safety of superficial chemical peeling in treatment of active acne vulgaris. *An Bras Dermatol* 2017;92:212–6.
14. Sahu P, Dayal S. Most worthwhile superficial chemical peel for melasma of skin of color: Authors' experience of glycolic, trichloroacetic acid, and lactic peel. *Dermatol Ther* 2021;34:e14693.
15. Bhardwaj V, Sharma K, Maksimovic S, Fan A, Adams-Woodford A, Mao J. Professional-Grade TCA-lactic acid chemical peel: Elucidating mode of action to treat photoaging and hyperpigmentation. *Front Med (Lausanne)* 2021;8:617068.
16. Kubiak M, Mucha P, Rotsztejn H. Comparative study of 15% trichloroacetic acid peel combined with 70% glycolic acid and 35% trichloroacetic acid peel for the treatment of photodamaged facial skin in aging women. *J Cosmet Dermatol* 2020;19:137–46.
17. Gaspar NG, Gaspar APA, Aide MK. Rhinophyma: Practical and safe treatment with trichloroacetic acid. *Surg Cosmet Dermatol* 2014;6:368–72.
18. Muthuvel K, Sekar S, Deepa MS. Incomplete ear lobe cleft repair with 100% trichloroacetic acid. *Int J Res Dermatol* 2016;2:91.
19. Chiheb S, Benslimane I, Elfiboumi KA, Hali F. Nail peeling with glycolic acid 50%: A prospective study of 20 cases. *Skin Appendage Disord* 2021;7:363–5.
20. Jiang AJ, Soon SL, Rullan P, Brody HJ, Monheit GD, Lee KC. Chemical peels as field therapy for actinic keratoses: A systematic review. *Dermatol Surg* 2021;47:1343–6.
21. Reserva J, Champlain A, Soon SL, Tung R. Chemical peels: Indications and special considerations for the male patient. *Dermatol Surg* 2017;43 Suppl 2:S163–73.
22. Dayal S, Sangal B, Sahu P. Ferulic acid 12% peel: An innovative peel for constitutional type of periorbital melanosis-comparing clinical efficacy and safety with 20% glycolic peel and 15% lactic peel. *J Cosmet Dermatol* 2020;19:2342–8.
23. Ahmed G, Mishra DK. Clinical efficacy and safety of 20% glycolic acid versus 30% lactic acid peel in constitutional type of periorbital melanosis: A comparative study. *Int J Res Dermatol* 2019;5:546–53.
24. Wambier CG, Neitzke IC, Lee KC, Soon SL, Rullan PP, Landau M, *et al.* Augmentation and eversion of lips without injections: The lip peel. *J Am Acad Dermatol* 2019;80:e119–20.
25. Cook KK, Cook WR Jr. Chemical peel of nonfacial skin using glycolic acid gel augmented with TCA and neutralized based on visual staging. *Dermatol Surg* 2000;26:994–9.
26. Tian Y, Li XX, Zhang JJ, Yun Q, Zhang S, Yu JY, *et al.* Clinical outcomes and 5-year follow-up results of keratosis pilaris treated by a high concentration of glycolic acid. *World J Clin Cases* 2021;9:4681–9.
27. Banga G, Patel K. Glycolic Acid peels for nail rejuvenation. *J Cutan Aesthet Surg* 2014;7:198–201.
28. Daulatabad D, Nanda S, Grover C. Intra-individual right-left comparative study of medium depth peels in superficial nail abnormalities. *J Cutan Aesthet Surg* 2017;10:28–32.
29. Sonthalia S, Jakhar D, Yadav P, Kaur I. Chemical peeling as an innovative treatment alternative to oral antifungals for onychomycosis in special circumstances. *Skin Appendage Disord* 2019;5:181–5.
30. Ali B, ElMahdy N, Elfar NN. Microneedling (Dermapen) and Jessner's solution peeling in treatment of atrophic acne scars: A comparative randomized clinical study. *J Cosmet Laser Ther* 2019;21:357–63.
31. Raj C, Dixit N, Debata I, Hassanandani T, Behera D, Panda M. Combination of 1064-nm Q-switched neodymium-doped yttrium-aluminum-garnet laser with Modified Jessner's peel for the treatment of Nevus of Ota: A case series of seven patients. *Dermatol Ther* 2020;33:e14384.
32. Nikalji N, Godse K, Sakhiya J, Patil S, Nadkarni N. Complications of medium depth and deep chemical peels. *J Cutan Aesthet Surg* 2012;5:254–60.

33. Castillo DE, Keri JE. Chemical peels in the treatment of acne: Patient selection and perspectives. *Clin Cosmet Investig Dermatol* 2018;11:365–72.
34. Vemula S, Maymone MB, Secemsky EA, Widjajahakim R, Patzelt NM, Saade D, *et al.* Assessing the safety of superficial chemical peels in darker skin: A retrospective study. *J Am Acad Dermatol* 2019;79:508–13.e2.
35. O'Connor AA, Lowe PM, Shumack S, Lim AC. Chemical peels: A review of current practice. *Australas J Dermatol* 2018;59:171–81.

How to cite this article: Khunger N, Chanana C. A perspective on what's new in chemical peels. *CosmoDerma* 2022;2:14.