

## Views and Practice

# Use of superficial glycolic acid peels in clinical practice

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### Introduction

Chemical peeling is one of the oldest cosmetic procedures performed that is still in use today. It is a process of applying chemicals to the skin to destroy the outer damaged layers, thus accelerating the normal process of exfoliation. Chemical peels are generally divided into three categories depending upon the depth of the wound created by the peel: superficial peels (penetrating the epidermis only), medium depth peels (damaging the entire epidermis and papillary dermis) and deep peels (reaching the level of the mid-reticular dermis). Some of the chemical peeling agents used include glycolic acid, trichloroacetic acid (TCA), Jessner's solution, salicylic acid, and phenol.

Superficial chemical peels utilizing alpha-hydroxy acids (AHAs) such as glycolic acid (GA) are popular in dermatological practice as they offer therapeutic results as a convenient and well-tolerated treatment with minimal downtime. They are used to improve the appearance of pigment changes,

improve skin texture, and reduce pore clogging that contributes to acne. Such superficial peels exfoliate the epidermal layers without going beyond the basal layer. They target the corneosome/keratinocytes by enhancing breakdown and decreasing cohesiveness, causing desquamation.<sup>1</sup> Regeneration of epidermal layer ensues, whilst dispersing basal layer melanin and increasing collagen gene expression.<sup>2</sup>

### Choosing the suitable patient

An evaluation of the patient by the clinician is necessary to determine the appropriate treatment and suitability of the patient for undergoing a superficial chemical peel. A general medical history including current medications (e.g. oral isotretinoin or drugs with photosensitizing potential), recurrent herpetic outbreaks, and history of keloid formation.

The main indications for superficial glycolic acid peels include improvement in skin texture, acne, keratosis pilaris and superficial dyschromias such as post-inflammatory hyperpigmentation, freckles, lentigines, and epidermal melasma. Both patients with comedonal and inflammatory acne benefit from glycolic acid peels. Multiple sessions are usually required to achieve the full effects of the treatment and usage together with home care products (usually glycolic acid or retinoid creams) are recommended. Depending on the indication,

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superficial peels may be combined with other modalities of treatment for the best results, for example laser therapy for freckles/lentigines, hydroquinone/retinoid compounds for melasma, systemic and topical treatments for acne etc.

Contraindications to superficial chemical peels are allergies to the peeling agent, active wounds or skin infection, active pre-existing inflammatory dermatoses, patients who are uncooperative or have unrealistic expectations. Caution should also be taken if patients have recently undergone facial waxing or depilatories which may make the skin more sensitive.

In patients with severely photodamaged skin, such as those with deep wrinkles, significant tissue laxity and sagging of the face, and those with age-related tissue volume loss, superficial chemical peels do not reach the affected histological level so other treatment modalities may be more appropriate.

## **How I utilise glycolic acids in clinical practice**

Preparation of the patient begins with detailed explanation of the chemical peel process, what to expect in terms of downtime, expected effects and possible complications. Informed consent should be obtained before a chemical peel and compliance with pre-peel and post-peel treatment is emphasized for the best results and to prevent complications. At least 3-4 sessions of monthly glycolic acid peels are needed to see the full effects of the treatment.

### ***Priming the skin***

I recommend patients undergoing priming of the skin for at least 2 weeks before the peel with a topical retinoic acid or glycolic acid to be used at home, which can also be used between chemical peeling sessions as maintenance therapy. Glycolic

acids as priming agents are generally better tolerated compared to retinoic acids and are more advantageous in those with sensitive skin, facial telangiectasias or those prone to facial erythema.

All AHA products may create transient stinging when first applied to the skin which is not a cause for concern. However, persistent stinging lasting longer than 30 to 60 seconds may imply that the product is too strong for the patient's skin. It is better to start with low-level products and gradually increase the concentration or frequency of use to allow for a gradual build-up of tolerance to any irritation. I usually suggest patients to start with a 15% glycolic acid cream/lotion twice weekly at night for a few weeks before gradually stepping up the frequency of use.

### ***The glycolic acid peel***

Immediately prior to a chemical peel, the skin should be cleansed with water and excess fat should be removed with agents such as acetone, rubbing alcohol or a combination of these agents. This enables proper penetration of the glycolic acid.

In a comfortable sitting position, the patient's hair is kept out of the way with a disposable shower cap and soft gauze taped with medical tape. The patient is instructed to keep the eyes closed during the procedure. A glycolic acid solution ranging from 20-70% is applied evenly over the skin whilst staying outside the orbital rim. In our practice we use a disposable soft brush applicator, but the peeling agent can also be applied using gauze or cotton swabs. I generally start with the forehead followed by the cheeks, nose and chin and a thin layer is applied several times until an even layer over the whole face is achieved.

The glycolic acid is left on until a diffuse mild erythema is noted. Localised areas of redness can be neutralised earlier with a gauze sprayed with bicarbonate solution. When mild diffuse erythema

is reached, the whole face is neutralised with a bicarbonate spray whilst protecting the eyes with soft cotton pads. After neutralization, the patient should be checked for any persistent stinging or burning discomfort and those areas neutralised again to ensure no acid remains. Carefully observe for any sign of "frosting" of the skin after neutralisation which signifies epidermolysis. A cooling mask is then applied to soothe the skin. Moisturizers and sunscreens can be used just before the patient leaves the clinic.

### **Post-peeling management**

For superficial glycolic acid peels, I explain to the patient that they should not expect actual "peeling". Most of the patients only have a little redness that usually lasts for less than 24 hours, and usually look normal the day after the glycolic acid peel. Increased dryness is to be expected in the subsequent few days, and occasionally slight flaking can occur in localised areas for a few days. Rarely, an area of crusting or scabbing might occur which usually settles with an antibiotic ointment, and may leave some post-inflammatory hyperpigmentation that takes time to fade. Bland moisturizers should be used for the subsequent five to seven days until the skin has entirely healed, and any irritating products such as retinoic acids, vitamin C, or glycolic acids should be avoided during this time. Broad-spectrum sunscreens should be used every morning and direct sun-exposure should be avoided especially in the week after a chemical peel. A maintenance regimen utilising home topical glycolic acids or retinoic acid creams should be resumed a week after the peel, and subsequent peels in the clinic can be scheduled once a month.

### **Possible complications**

Complications are generally rare with superficial chemical peels as they do not penetrate beyond the epidermis. Occasionally epidermolysis of the skin (visible as "frosting" immediately after a peel) occurs with stronger application and in more sensitive areas. Epidermolysis indicates splitting of the epidermis from the dermis which results in peeling and crusting of the skin in the week after the peel. A steroid cream can be applied immediately and an antibiotic ointment prescribed to the patient to use at home to aid the healing process. Post-inflammatory hyperpigmentation can ensue which will gradually fade with time. Superficial peels can trigger an outbreak of herpes labialis in some patients with a history of cold sores, and if frequent will necessitate antiviral prophylaxis or cessation of peels.

### **Conclusion**

Superficial glycolic acid peels are an effective and well-tolerated treatment that can be easily implemented in the clinic for improving acne, general skin texture and pigmentation.

### **References**

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2. Bernstein EF, Lee J, Brown DB, et al. Glycolic acid treatment increases type I collagen mRNA and hyaluronic acid content of human skin. *Dermatol Surg* 2001;27:429-33.