

Chemical Peels: Wound Treatment for up to Three Months Post Peel Recuperative Phase.

Landon Owen ¹, Robert Mason ¹, Ethan Nicholas ¹ and Luke Jackson ^{1*}.

¹Department of Dermatology, Antonius Deusinglaan, Netherlands.

***Corresponding Author:** Luke Jackson, Department of Dermatology, Antonius Deusinglaan, The Netherlands.

Email: l.jackson@yahoo.com

Received date: April 04, 2017; **Accepted date:** April 26, 2017; **Published date:** April 28, 2017.

Citation : Luke Jackson, Ethan Nicholas, Robert Mason, Landon Owen, Chemical Peels: Wound Treatment for up to Three Months Post Peel Recuperative Phase. J. Dermatology and Dermatitis. Doi: 10.31579/2578-8949/005

Copyright : ©2017 Luke Jackson. This is an open-access article distributed under the terms of The Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Abstract

The cutaneous ageing process whether skin laxity, facial wrinkles, ageing pigmantory spots is a continuous process which is invariably difficult to stop, despite the recent advances in science and medicine. Moreover, to combat the signs of ageing, chemical peels may be used to help ameliorate the scars, to destroy premalignant and/or malignant lesions, unsightly pigmentation etc. The treatment modalities used to produce a controlled injury are dermabrasion, chemical peels and photoepilation (laser and intense pulse light) therapy. Only if the injury is in the proper tissue plane can the desired result be achieved. If too superficial, the results will be disappointing. If too deep, the results can be catastrophic. The chemical peeling creates a controlled injury in an attempt to correct a particular problem. Historically, various chemical peels used such as phenol, trichloroacetic acid as single agent or in combination. Recently, newer agents have been introduced into the world of chemical peeling. These newer agents are used in combination for resistant hyperpigmentation or combined with intense pulse light microdermabrasion for acne scarring to achieve satisfactory results.

Keywords: chemical peels; wound treatment; Peel Recuperative Phase.

Introduction

A chemical peel is a skin-resurfacing procedure in which a chemical solution is applied to the skin to peel away the accumulation of dead cells on the surface of the skin, enhancing cell renewal and increasing the moisture content of the skin [1-10]. It also helps to stimulate collagen regeneration making skin healthier. The skin can peel or flake off a few days after the peel revealing healthier, smoother and more radiant skin. Recommended home care products help to stimulate skin renewal and sun protection [3,11]. Chemical peels are used to treat fine lines and wrinkles, skin discoloration usually on the face but also on the neck, trunk and hands. A chemical peel can be done alone or in combination with other cosmetic procedures and results are enhanced if the correct pre-treatment and post-treatment products are used [11]. Chemical peels can be done at different depths — from light or superficial to deep — depending on desired results (Chart 1). Each peel uses a different chemical solution. Deeper chemical peels produce more-dramatic results and deeper skin rejuvenation but also involve longer recovery times [3,4].

Material and Methods

This is a prospective study of three years from April 2014 to April 2017 and this study was conducted at Faisal Hospital, Faisalabad, Pakistan. The inclusion criteria were clients with aging rhytides [7], pigmentation, acne scarring, ageing spots, premalignant lesions etc. The exclusion criteria includes noncompliant clients, pregnancy & breast feeding, if the patient has recently waxed, recent surgery, recent use of systemic isotretinoine, recent radiation, herpes virus infection, allergies to chemicals.

As in all cosmetic procedures, a detailed discussion with the patient emphasizing realistic expectation is critical. Patients should be explained that skin will not be “perfect” following a chemical peel. A modest improvement of 50% to 60% can be achieved though some may improve more.

A careful detailed history should include previous episodes of herpes simplex, prior surgeries in the area, cold intolerance, present and prior medications, pigmentary problems, a history of wound healing following previous surgery and of course realistic expectations, thorough physical examination and relevant investigation performed where indicated. In this study, total number of two-hundred and sixteen consecutive chemical peels on 54 patients over a 3-year period were performed. Age distribution ranges from 20 years to 55 years (Chart 2). There were 42 females and 12 males patients (Chart 3). Thirty four patients had successful treatment and eight cases were treated with combined intense pulsed light therapy microdermabrasion and chemical peel for acne scarring.

Results

This is a prospective study in which fifty four patients were treated, out of which 34 patients were treated with combined chemical peel treatment and eight patients were treated with chemical peel and IPL microdermabrasion. Although statistical analysis show the comparison between these two groups is non-significant (p value 0.106), however, clinically satisfactory results achieved in the second group of patients. In our office setting practice, we perform approximately four sessions weekly of chemical peel and continue skin lightening/spot protection creams and sun protection. The results achieved are highly satisfactory (80% to 90%) for almost all skin conditions treated.



Chart 1 Depth of destruction of various peeling agents/p>

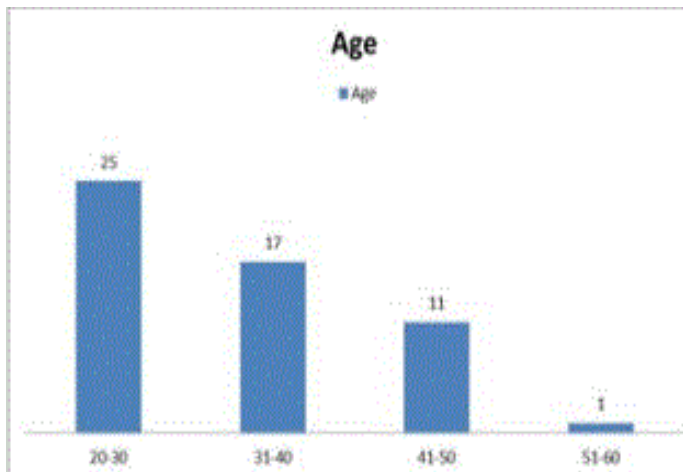


Chart 2 Age distribution.

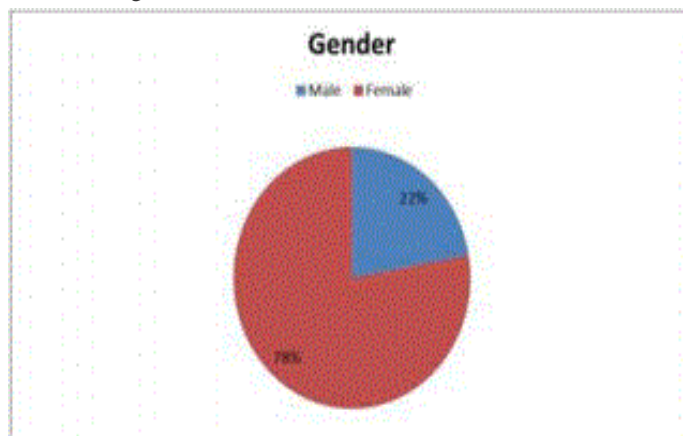


Chart 3 Gender

Discussion

A new patented technology allows easy trichloroacetic acid (TCA) controls pain to safely give results comparable to a papillary dermis depth, with a very discreet burning sensation only. Efficacy has increased especially on pigment problems. As the skin is dynamic structure, the session of peeling may require every six months or yearly to maintain the desired results [2,4,6]. The Skin tech brand is the most famous and internationally known medium depth chemical peel for skin regeneration, considered as one of the safest, the most effective and the easiest peeling. The easy TCA is used to treat fine lines, photo-ageing, acne problems, acne scars, pigment problems (hyperpigmentation), melasma, chloasma, keratosis, hands, forearms, stretch marks, "age spots", etc. (Chart 3) [5].

Among the superficial chemical peels, the glycolic acid is a natural constituent of cane sugar and the smallest molecule of the alpha-hydroxy (AHA) family. In practice, combined use of glycolic and lactic acids to exfoliate surface cells and hydrate the skin. This peel revitalises the appearance of photodamaged skin. Skin ceuticals gel peel SM are formulated to address pore congestion, wrinkles, other signs of ageing. This peel combines salicylic and mandelic acids to manage problematic skin and promote exfoliation. Skin ceuticals pigment balancing peel targets the appearance of uneven skin tone to improve sun-damage skin with pigmentaiton. It combines brightening agents with a peeling solution. Obagi radiance peel is a gentle chemical peel for a healthy, bright complexion with a blend of 20% salicylic acid, lactic and glycolic acid. Nevertheless, chemical peels may result in drastic complication such as toxic shock syndrome [8]. Up tech is a deep and incisive peeling that guarantees a strong and long-lasting cutaneous renewal with a lifting effect. This is highly indicated for thick skin and/or skin with small scars and fine wrinkles. Up tech contains salicylic acid which is antiseptic and keratolytic. Azelaic acid is non-comedogenic, anti-microbial and soothing effect.

Pyruvic acid have exfoliating and antibacterial action. Malic acid is smoothing to skin restoration (Figure 1a and 1b). Maxi tech is intensive peeling, with a whitening and hypopigmenting action. This is recommended for skin with visibly dilated pores. It contains lactic acid with antibacterial, keratolytic action. Kojic acid has whitening and brightening effect. Arbutin is depigmenting, whitening. Glycolic acid exfoliate the skin, collagen and elastin synthesis boosters. Mandelic acid is epidermal reactivator, moisturizer with a firming effect. Salicylic acid is antiseptic, keratolytics (Figure 2a-2f). Mini tech is a soft peeling Continuous and non invasive cutaneous renewal, with an antioxidant and moisturizing action. It contains MCA which is useful on dyschromia, photoaging, seborrheic keratosis, increases tonicity and elasticity, increases brightness, and is by far safer and less aggressive than the TCA from which it derives. Lactic Acid is antibacterial, keratolytic, epidermal reactivate, moisturizer, with a firming effect. Citric acid has whitening and smoothing effect. Panthenol have skin restoring action and quercetine is antioxidant. Mandelic acid is an epidermal reactivated, moisturizer with a firming effect. Acne bubble out treatment is a highly advance therapy for acne. It has been introduced recently, but has done wonders for the acne issue. It is the most effective treatment ever invented for acne problems and kicks out acne from your skin quicker than time! In this process, each pimple of acne is treated individually for the best and enduring results. In our experience, we have not encountered with problems such as wound infection, this risk may be reduced due to appropriate post peel wound care. Pigmentary problems are common especially hyperpigmentation. Hyperpigmentation is inflammatory in nature. It is possibly is a result of melanocyte overstimulation secondary to trauma and can develop from t acne, chronic dermatitis eruptions, and trauma to the skin by the use of chemical peels. Patients at risk for hyperpigmentation should be treated aggressively both before and after chemical peeling with agents such as retinoic acid, glycolic acid, hydroquinone, kojic acid, or other similar compounds. If the hyperpigmentation is deep in the dermis, conservative treatment with the listed agents and "tincture of time" may be the most prudent. Perhaps the most dreaded complication of chemical peeling is scarring. The deeper the peel the higher the risk of scarring. Acne scarring is caused by the body effectively putting "too much effort" into healing the wounds caused by acne, meaning that there is an excess of collagen built up in the dermis. This collagen may Stay in place permanently creating acne scars. Dermabrasion was first introduced by Dr Abner Kurtin in 1953, a New York dermatologist. This traditional technique combines a hand engine with either diamond-studded fraises or wire brushes. It is indicated for scarring especially the acne scarring or photo damage skin. Dermabrasion is extremely technique dependent. The art of dermabrasion is knowing how deep to go. If one goes too deeply, scarring will be created, If one does not go deeply enough, the results will be suboptimal. Traditional dermabrasion have been combined with other techniques such as punch grafting of deeper, wider, ice picks scars trephined using various-sized punches. The tissue is discarded and replaced with similarly sized punch grafts from normal skin and subsequently dermabraded. The results achieved using these techniques are unpredictable [9]. To combat this difficult situation, we have been able to use with success, combination of Intense Pulse Light therapy with microdermabrasion and 20% TCA with excellent results.



Figure 1 Maxi tech is intensive peeling.



Figure 2 Mini tech is a soft peeling continuous and noninvasive cutaneous renewal.

Conclusion

The art of chemical peel require a well trained and experienced person. The patient should be informed about possible post peel expectation and the time frame to achieve the desired results. Although postpeel wound care responsibility will lie with the patient, the direction comes from the Cosmetic Surgeon. It is important to remember that the skin has been wounded and is in a vulnerable state. Like any wound healing, it requires careful wound treatment for up to three months post peel recuperative phase.

References

1. Baker TJ. The ablation of rhytides by chemical means. A preliminary report. *J Fla Med Assoc.* 1961; 48:451-4.
2. Collins PS. The chemical peel. *Clin Dermatol.* 1987;5(4):57-74.
- 3.

- Clark E, Scerri L. Superficial and medium-depth chemical peels. *Clin Dermatol.* 2008;26(2):209-18. <https://doi.org/10.1016/j.clindermatol.2007.09.015>
4. Drake LA, Dinehart SM, Goltz RW, Graham GF, Hordinsky MK, Lewis CW, et al. Guidelines of care for chemical peeling. Guidelines/Outcomes Committee: American Academy of Dermatology. *J Am Acad Dermatol.* 1995;33(3):497-503. [https://doi.org/10.1016/0190-9622\(95\)91396-3](https://doi.org/10.1016/0190-9622(95)91396-3)
5. Francine LV, Scott RB. Histologic study of dermabrasion and chemical peel in an animal model after pretreatment with Retin-A. *Aesthetic Plast Surg.* 1995;19(3):243-6.
6. Dinner MI, Artz JS. The art of the trichloroacetic acid chemical peel. *Clin Plast Surg.* 1998;25(1):53-62.
7. Thomas JB. Chemical face peeling and rhytidectomy: A combined approach for facial rejuvenation. *Plast Reconstr Surg.* 1962;29(2):199-207
8. LoVerme WE, Drapkin MS, Courtiss EH, Wilson RM. Toxic shock syndrome after chemical face peel. *Plast Reconstr Surg.* 1987;80(1):115-8.
9. Grabb WC. Plastic surgery. 5th ed. Aston SJ, Smith JW, editors. Philadelphia: Lippincott Williams & Wilkins; USA. 1997; p. 605.
10. Langsdon PR, Milburn M, Yarber R. Comparison of the laser and phenol chemical peel in facial skin resurfacing. *Arch Otolaryngol Head Neck Surg.* 2000;126(10):1195-9. doi:10.1001/archotol.126.10.1195
11. Brian PM, Brad M, Gary M, Gaylon M. The etiology of prolonged erythema after chemical peel. *Dermatol Surg.* 1998;24(3):337-41. <https://doi.org/10.1111/j.1524-4725.1998.tb04164.x>