

Study on Usage of Modified Collagen and Glycerin (Stimulen Lotion) on A Hyperpigmented Post Split Skin Grafting Patient

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Introduction

Split skin grafting is a procedure of wound closure so that the wound bed can be covered up well and fast in a timely manner.

Technically, once skin is harvested and grafted to the recipient side, the skin will become pink in few days and will be blanching of pressure with abundance if capillary refill. At the initial state, the graft surface will be at depressed level than the surrounding skin edge. But by 2 to 3 weeks post grafting, it will emerge back and on the same level as the surrounding skin. Collagen replacement will take place after day 7 of grafting and complete in 6 weeks time.¹

However, there will always be an issue in terms of graft pigmentation. The moment skin is harvested, there will be circulatory interruption due to the loss of melanoblast content which leads to the changes of the skin. Once graft is attached to the wound bed, graft revascularization will take place and there will be influx of erythrocytes and normal ratio of melanocytes restored back. Eventually, the skin will change to pink in colour and then change back to normal skin tone. However, it has been said that skin graft taken from above clavicular region will have a better skin tone colour as compared to those taken from anywhere below the clavicle region as it will give the brown skin tone effect.¹

As for some people, change in skin tone than doesn't pair with the original skin may cause emotional discomfort and cosmetically looks different. There is an option of dermabrasion for these hyper pigmented graft but however, it can only be done at the appropriate timing as the more later the procedure to be done, the more effective it is.

In this study, we will look at the efficacy of Stimulen Lotion in a post split skin grafting patient with hyper pigmented skin and the duration it take for the skin to be cosmetically the same as the original tone.

Case report

Patient A

48-years-old lady, diagnosed with diabetic foot ulcer, under gone a split skin grafting procedure and donor skin was harvested from the thigh. Stimulen lotion was first applied 6 weeks post skin grafting. The initial skin showed hyper pigmented circumferential skin. It took her total of 3 months for the skin to achieve back to its normal skin colour as the periwound skin.

Patient B

45 Years-old-man, diagnosed with necrotising fasciitis of right calf. Subsequently subjected for emergency extensive wound debridement. Post debridement, wound bed preparation was done and then went for SSG. Stimulen lotion started at 6 weeks post SSG and was under regular follow up until now.

Patient C

63 Years-old-lady diagnosed with infected right diabetic foot ulcer who had subsequently went for emergency wound debridement. Post debridement wound bed preparation was done and went for SSG. Post SSG 6 weeks, started on Stimulen Lotion and within 4 weeks, the distal inferior wound showed improvement as per attached below.

Result

Based on current findings, generally all patient showed change in in skin hyperpigmentation after 3 months initiation of treatment with compliancy to daily usage of stimulen lotion.

Conclusion

In a patient who constantly apply the modified collagen and glycerin at least once a day on a well healed hyper pigmented split skin grafting wound, result showed changes of skin pigmentation within 3 months of usage without any need for invasive procedures and doesn't involved in high costing as well.

Discussion

When skin is harvested, there will be loss of melanoblasts content that will cause in the alteration of pigment and non-pigment producing cells in the graft. Skin graft will change in colour when its enter healing process. In this case series observation, we are looking at the efficacy of modified glycogen and glycerin on a post split skin grafting surgery as to revert back the hyper pigmented skin to become near normal skin colour. In general, any post split skin grafting will remain hyper pigmented unless dermabrasion procedure is to be done. However dermabrasion cannot be done abruptly fast as it will cause failure in treatment. Another way of treating hyperpigmentation skin is by application of topical ointment as it is more cost effective and easy to use. Glycerin has been commonly used in beauty products as it provides the properties of moisturising and nourishing. Apart from that it can also lighten the skin complexion, excellent hygroscopic characteristics and it prevent rough and scaly skin. Modified collagen on the other hand enhanced tissue vascularisation and replicate normal phase of healing. This will happened when the lotion produced an abundant of TGF-B, VEGF, vWF and collagen type I, increasing the fibroblast formation and hence stimulate production of collagen type I:III predisposition. This will enhance tissue repair and skin rejuvenation as it is paired with glycerin.

References

¹ Skin graft and skin substitutes and principle of flaps, James F Thornton, Amanda A G Osman



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