SUMMARY

Many patients seek treatment for their disfigurement caused by cutaneous hyperpigmentations, acne vulgaris and facial wrinkles. As the treatment of these problems is often nonsatisfactory, many resurfacing modalities were tried to solve these problems. Hence, the selection of the appropriate modality depends on many factors including skin type, efficacy, risk and morbidity associated with each technique.

The present study aimed to evaluate the efficacy, side effects and complications of three modalities of superficial chemical peeling Trichloroacetic acid (TCA), glycolic acid (GA) and amino acid filaggrin based antioxidant (AFAs) in the treatment of melasma, acne vulgaris and fine facial wrinkles in Egyptian patients. This study included 90 patients (80 female, 10 male), their ages ranges from 12:72 years with mean age (31.95 years).

They were classified according to the line of treatment used into three groups each one included thirty patients as the following:

Group I: Included thirty patients treated with trichloroacetic acid (TCA 15:35%).

Group II: Included thirty patients treated with glycolic acid (GA 20:70%).

Group III: Included thirty patients treated with amino acid filaggrin based antioxidant (AFAs).

Each group was subdivided into three groups according to the targeted disease as the following:

Subgroup A: Included ten patients suffering from Melasma.

Subgroup B: Included ten patients suffering from acne vulgaris.

Subgroup C: Included ten patients suffering from fine facial wrinkles.

Each patient was evaluated by careful history taking and complete clinical and dermatological examination then treatment was followed using the indicated line for 6 weekly sessions. Every patient was followed up after therapy for a period ranged from 3:6 months; photographs were taken in each visit.

Concerning results of this study there was association between significance and obtained results from the three therapeutic lines, with AFAs appeared better in improving the three targeted diseases which can be showed as the following:

In the treatment of melasma, the most excellent and rapid results were reported in patients treated with AFAs as (80.0%) of patients showed excellent results within an average of three settings then GA (50.0%) and lastly TCA (20.0%). The difference between the three lines was statistically significant.

In the treatment of acne; the results revealed that difference between TCA, GA, and AFAs in the treatment of acne patients was mainly attributed to the predominant type of acne lesion.

Significant improvement in patients suffering from papulopustular lesion was recorded in acne patients subgroups treated with GA and in those treated with AFAs while; there was no significant improvement in those treated with TCA.

On the other hand, all the three therapeutic lines showed significant improvement in patients suffering from comedonal acne.

Also, there was no significant difference between TCA, GA, and AFAs regarding their effect on acne scars, as they led only to flatten scars but no complete improvement was recorded with the tendency to get the best results from TCA treated patients.

On the other hand, there was significant difference between results obtained from each of the studied lines of treatment regarding their efficacy in the treatment of postinflammatory hyperpigmentation,as AFAs and GA treated patients showed better results than TCA treated patients ,as patients who had postinflammatory hyperpigmentation before treatment were 6(60.0%) but after treatment they were 9(90.0%) and this was attributed to complications during therapy.

In fine wrinkles patients, the results of the present study revealed that the difference between AFAs, GA and TCA was mainly attributed to the site of lesion among the studied patients. Hence, there was significant difference between the three lines regarding their effect on periorbital wrinkles, with the most excellent and rapid onset results (2:4 sessions) obtained from those treated with AFAs and GA. While, there was no improvement in patients with forehead fine wrinkles among the three studied subgroups with no significant difference between the used three therapeutic lines.

There was no preference towards any of the present study included skin types (III and IV) regarding efficacy and safety of the included lines of treatment.

CONCLUSION

From the present study it can be concluded that:

1. Chemical peeling is highly adventitious technique of treatment as it showed rapid improvement in the treatment of Melasma, acne vulgaris and fine wrinkles if compared with other lines of treatment which have been used previously as other depigmenting agents used in melasma or antibiotics and retinoids used in treating acne and topical collagen creams used for fine wrinkles.
2. Inspite that, TCA peels showed improvement in cases and worsening of others, with more complications and late onset of improvement mainly after 5:6 weeks of treatment if compared with AFAs and GA, it is the cheapest method and its application is easy and consume little time. In addition, it has great benefit mainly in treating post acne scars.
3. GA peels showed satisfactory results in the three studied diseases,but more preference than TCA and more drawbacks and apparently later period of improvement than AFAs as it occurs mainly after 3:4 sessions of treatment. On the other hand, it has advantage over AFAs in that it is less expensive.
4. The results reported in AFAs treated patients were satisfactory in the three targeted diseases(Melasma, acne vulgaris and fine facial wrinkles) with rapid onset of improvement as treated patients showed more improvement from session to session with no or minimal side effects. It showed excellent results in patients who reported no improvement after GA treatment before the study for about six

months, but they are less adventitious than other lines in that, it is the most expensive line of treatment if compared with the other two lines.

5. AFAs was the best peeling agent as it has the following advantages over other peeling agents:

- Virtual absence of irritation if compared to even neutralized GA.
- No incidence of photosensitization has been reported as a result of the use of AFAs.
- No instance of post inflammatory pigmentation has been reported as a result of the use of AFAs gels.
- Patient's skin will always look good without the redness and erythema of glycolic acid.
- Many patients notice the softening of the skin within 24 hours of first using the AFAs and definite results within days of use rather than the weeks it takes to see results from GA and TCA.
- No chance for accidental eye affection as the product is formed of either clay or gel unlike GA, and TCA which are solutions that may driple accidentally affecting the medial eye canthus.
- There are fewer chances for mistakes as there is no chance for occurrence of skin damage of using wrong concentration or wrong pH.
- AFAs peels results are more predictable unlike GA and TCA where occasionally deeper peelings can occur unexpectedly.

In summation, AFAs represent an entirely new and effective cosmecutical with respect to moisture retention, decrease in photopigmentation, antioxidative effect, patient acceptance and rapidity of visible results, as well as low irritancy, non comedogenic and non allergenic effect.

RECOMENDATIONS

- Superficial chemical peeling is recommended as a safe and effective modality of skin rejuvenation in the treatment of many dermatological diseases like melasma, acne vulgaris and fine wrinkles. While it is more adventitious than other modalities of treatment in that it is more rapid in inducing improvement.
- Trichloroacetic acid (TCA) is recommended mainly in the treatment of post acne scars.
- Glycolic acid (GA) is recommended in the treatment of many dermatological diseases including pigmentary problems like melasma, acne vulgaris, photoaging but it's preferred in patients with sedentary life styles to avoid exposure to sun which is considered the main cause of occurrence of complications in patients treated with glycolic acid.
- Amino acid filaggrin based antioxidants (AFAs) is considered as a modality of superficial chemical peeling which can be used successfully not only in the treatment of melasma, and fine wrinkles but also in the treatment of acne vulgaris whether inflammatory or noninflammatory. They have rapid onset of improvement without fear of any complications so, it can be used safely in any climate either cold or tropical areas and in dark complexions as well as fair ones.
- Larger comparative trials over longer periods comparing different peeling agents and modalities are needed.
- Comparative studies between chemical peeling and other treatment modalities like microdermabrasion, dermabrasion, laser skin resurfacing and IPLs are needed. This will help the physician to take the proper decision for the proper patient.