



Research Paper

To Study the Therapeutic Efficacy of the Glycolic Acid Peeling, Salicylic Acid Peeling and Micro-Dermabrasion in the Treatment of Melasma

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Abstract

Background: Melasma is an acquired increased pigmentation of the skin, characterized by gray-brown symmetrical patches, mostly in the sun-exposed areas of the skin.

Methods: The present study was carried out in the department of dermatology in a teaching institute. A total of 60 patients were enrolled for the study over a period of one year.

Results: In those who were treated with GA peeling; 15 % had excellent response, 35 % had good response, 40% had fair response and only 10% had poor response. Out of total 20 patients treated with SA peeling 10% had excellent response, 15% had good response, 45% had fair response and 30% had poor response. In response with micro-dermabrasion no patient had excellent response while good response was seen in 20%, fair response in 40% and poor response in another 40% patients.

Conclusion: All three agents were effective and safe in Indian patients, with Glycolic Acid Peel being better effect on melasma patients.

Keywords: Therapeutic, Melasma, Pregnancy.

Introduction

Melasma [Chloasma Faciei] is an acquired, mostly symmetrical hyper-melanosis characterized by “moth eaten” tan or brownish patches with well defined margins that occur on the sun exposed areas of the skin. When melasma is associated with pregnancy it is called chloasma or “mask of pregnancy”.

It is a chronic and recurrent disorder which has been under-diagnosed and under-treated due to

lack of effective therapies and the perception that it is merely a cosmetic nuisance. The main area of involvement is face and hence it is of major cosmetic concern to the patient.

The exact prevalence of melasma is unknown in most of the countries. Melasma is a very common cutaneous disorder, accounting for 0.25 to 4% of the patients seen in Dermatology Clinics in South East Asia, and is the most common pigment disorder among Indians¹.

Melasma is primarily a disease of women of child-bearing age although 10% of cases occur in men. Many physicians outside the dermatological community have not been aware of available treatments and therefore, have typically not addressed the problem unless asked or have reassured their patients that the hyper-pigmentation would fade after delivery.

The exact causes of melasma are unknown. However, multiple factors are implicated in its etiopathogenesis, mainly sunlight, genetic predisposition, and role of female hormonal activity. Exacerbation of melasma is almost inevitably seen after uncontrolled sun exposure and conversely melasma gradually fades during a period of sun avoidance. Genetic factors are also involved, as suggested by familial occurrence and the higher prevalence of the disease among Hispanics and Asians².

This study is aimed the therapeutic efficacy of the glycolic acid peeling, salicylic acid peeling and micro-dermabrasion in the treatment of melasma.

Methodology

The present study was carried out in the department of dermatology in a teaching institute. Patient selection criteria: Patients of all types of melasma attending the outpatient department of dermatology were selected irrespective of age, sex, duration and previous therapy.

Patient exclusion criteria: Certain parameters were binding while selecting the patients for the study which were strictly taken care of, during the enrollment procedure.

- Pregnancy and lactating mothers
- Past history of Herpes Labialis and Herpes Zoster
- Photosensitivity
- Known keloidal tendency in the patient
- Active acne lesions over face
- History of sensitivity to Al_2O_3
- History of taking oral isotretinoin in last 1 year
- Old facial dyschromia
- Ashy melanosis

- Uncontrolled systemic disease
- Any condition necessitating UV -light therapy
- Any concomitant disease that might interfere with the diagnosis of facial hyper-pigmentation.

Study comprised of total 60 patients who satisfactorily fulfilled the inclusion and exclusion criteria.

Method of Data Collection

- Total 60 patients were enrolled for the study.
- Informed consent was taken and counseling was done with proper explanation of the whole procedure, effects and probable side effects, before starting the procedure.
- Detailed history was taken and proper examination was done.
- Each patient was offered one of the following three regimens:
 - (A) Regimen I - 30% GA
 - (B) Regimen II - 20% SA
 - (C) Regimen III - Micro-dermabrasion
- Patients following regimen 1 & 2 were primed with 0.025% tretinoin cream applied at night time for 10 minutes in first 15 days.

All patients were prescribed a sunscreen lotion > SPF -30 and its importance was explained for both during and after the treatment.

Results

The present study comprises of 60 patients of melasma. Out of these 20 patients were treated with GA peel, 20 with SA peel and the remaining 20 were treated with micro-dermabrasion. Patients were evaluated and analyzed after 6 sittings [3 months] each of which was carried out 2 weeks apart.

The main age group affected was 30-39 years i.e. 48.33% patients. The second most affected was 20-29 years i.e. 30% patients, 20% belonged to 40 - 49 years age group while 1.66 % patients

belonged to 50-59 years age group. Not even a single patient of melasma was noted in the groups below 20 years of age. Total 10 out of 60 patients

were males and rest 50 patients were females. total 18 patients had a positive family history of melasma in either parents or any of the siblings.

Table -1 Response with Glycolic Acid Peel:

Response	Type of Pigmentation				
	Epidermal	Mixed	Dermal	Total	Percentage [%]
Excellent	3	0	0	3	15
Good	7	0	0	7	35
Fair	3	4	1	8	40
Poor	0	0	2	2	10

In those who were treated with GA peeling; 15 % had excellent response, 35 % had good response,

40% had fair response and only 10% had poor response.

Table -2 Response with Salicylic Acid Peel:

Response	Type of Pigmentation				
	Epidermal	Mixed	Dermal	Total	Percentage [%]
Excellent	2	0	0	2	10
Good	2	1	0	3	15
Fair	4	3	2	9	45
Poor	2	2	2	6	30

Out of total 20 patients treated with SA peeling 10% had excellent response, 15% had good

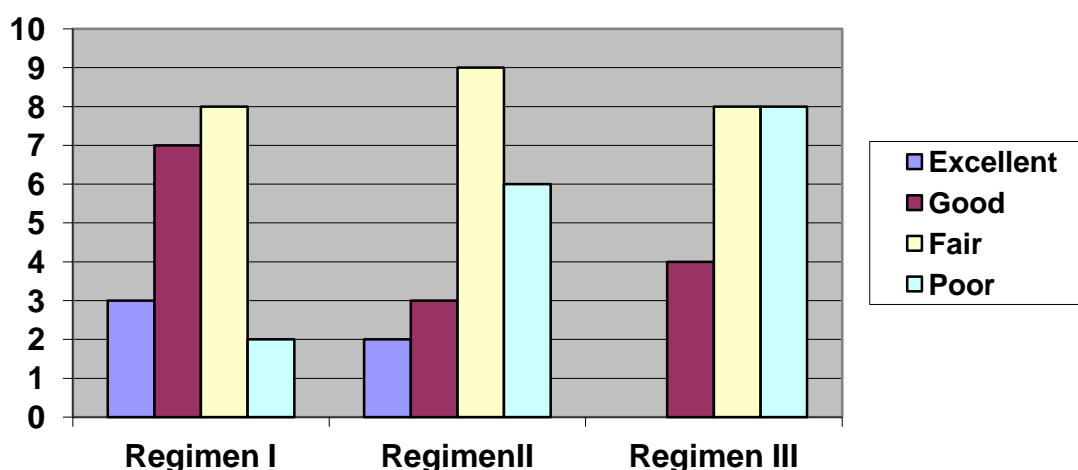
response, 45% had fair response and 30% had poor response.

Table -3 Response with Micro-Dermabrasion

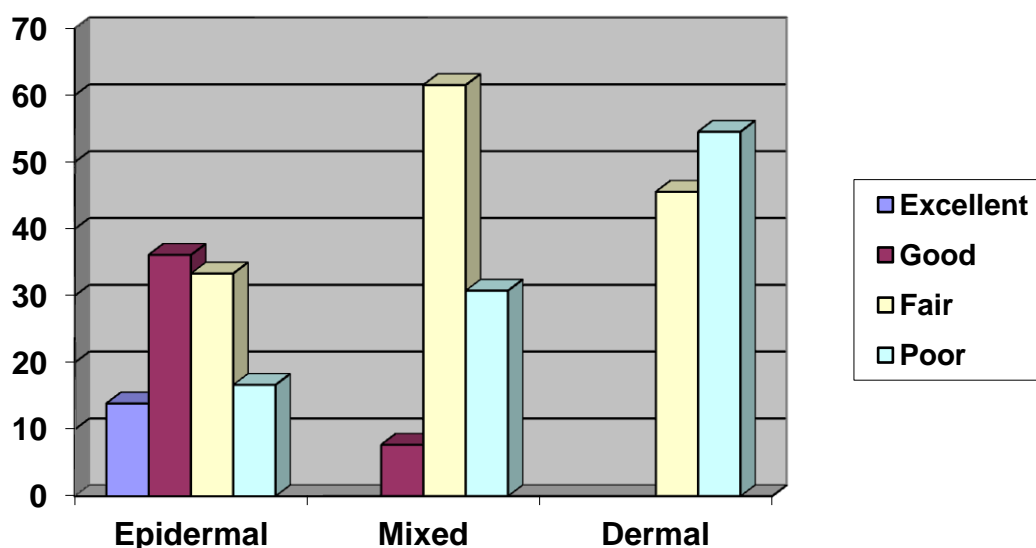
Response	Type of Pigmentation				
	Epidermal	Mixed	Dermal	Total	Percentage [%]
Excellent	0	0	0	0	0
Good	4	0	0	4	20
Fair	5	1	2	8	40
Poor	4	2	2	8	40

In this group no patient had excellent response while good response was seen in 20%, fair

response in 40% and poor response in another 40% patients.



Overall Response with All 3 Regimens



Overall Response Depending on the type of Pigmentation

Table -4 Side Effects Observed During Study

Side Effects	Regimen Used			
	I	II	III	Total
Erythema [E]	5	8	0	13
Abrasion [A]	0	0	0	00
Necrosis [N]	0	0	0	00
PIH	0	2	0	02

During whole duration of the study patients were continuously followed up for any possible side effects.

- Maximum [13] patients presented with erythema on the site of peel application.
- Maximum incidence of erythema was seen with SA peel, in total 8 patients.
- In 02 cases post inflammatory hyperpigmentation was seen after SA peel application.
- No adverse effects were noted with use of micro-dermabrasion except transient itching which lasted only for few minutes, post procedure.

Discussion

In those who were treated with GA peeling; 15 % had excellent response, 35 % had good response, 40% had fair response and only 10% had poor response in our study. A lot of studies are carried out previously on efficacy of GA peeling in melasma.

A similar study was carried out on 10 Asian women by Lim J.T. and Tham S.N.³. Statistically significant improvement was noted in 40% of the patients.

Javaheri et al⁴ performed a study with 25 Indian women with melasma. Overall improvement in melasma (reduction in MASI) was observed in 91% patients.

In the present study patients with epidermal type of melasma demonstrated a better response to GA peel treatment then those with mixed type/dermal type melasma which is in compliance to the study by Javaheri et al⁴.

In our study out of total 20 patients treated with SA peeling 10% had excellent response, 15% had good response, 45% had fair response and 30% had poor response.

Grimes⁵ conducted a similar study on 6 patients of melasma with SA peel and there was improvement in 66%.

In response with micro-dermabrasion no patient had excellent response while good response was

seen in 20%, fair response in 40% and poor response in another 40% patients in our study. Kunachak, Leelaudomlipi, and Wongwaisayawan⁶ have reported a large-scale study on dermabrasion in 533 patients with facial melasma. One study was conducted by Alam Murad and Omura Nayomi⁷ comparing GA peels with microdermabrasion. Result of my study shows similar response with both modalities.

Conclusion

Females were affected more commonly during their late third decade of life. Although we did not find the exact cause of melasma, we noticed that sun-exposure, pregnancy, and taking of oral contraceptive pills could precipitate or exacerbate the melasma.

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