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Micro Needling with Platelet Rich Plasma Versus Fractional CO_2 Laser with Platelet Rich Plasma in Patients with Post Acne Scars

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Abstract

Background: Facial scaring has always been challenged to treat and there are many treatments available to decrease the appearance of scars like topical retinoids, chemical peeling, microneedling, dermabrasion, soft tissue fillers, botulinum toxoid injection and laser resurfacing The aim of this study was to evaluate and compare the efficacy of microneedling and fractional CO2 laser in the treatment of post acne scars. A comparative studyOf thirty patients (12 males and 18 females) aged 19 – 36 years with atrophic acne scars were devided into Group (A): treated with Fractional Co2 laser combined with topical platelet rich plasma. Group (B): treated with skin microneedling combined with topical platelet rich plasma. Platelet rich plasma can improve the quality of atrophic acne scars treated with ablative fractional CO_2 laser or microneedling and decrease the duration of related side effects including oedema and erythema. Regarding patient's satisfaction grades there was an improvement after both treatment modalities with insignificant differences between both treatment modalities. PRP can improve the quality of atrophic acne scars treated with ablative fractional CO2 laser or microneedling and decrease the duration of laser-related side effects including oedema and erythema.

1. Introduction

Facial scars coming about because of skin break out are either hypertrophic or atrophic relying on whether they are raised or discouraged comparable to the skin surface. The atrophic facial scars are separated into various morphological sorts relying upon the shape and profundity of the scars. The four principle morphological kinds of atrophic post skin break out scars are icepick pitted scars, shallow or profound freight car scars, moving scars and direct scars [1].

Facial frightening has consistently been tested to treat and there are numerous medicines accessible to diminish the presence of scars like effective retinoids, concoction stripping, microneedling, dermabrasion, delicate tissue fillers, botulinum pathogen infusion and laser reemerging (.Most of the methods are hard to accomplish the objective of complete improvement.Thus, there is an everincreasingdemand of less obtrusive profoundly compelling techniques to treat post skin break out scars [2].

Mechanical skin needling is a strategy for skin inflammation scars medicines, where a roller or lattice of sharp needles is utilized to penetrate the influenced region. The dermis infiltration profundity ordinarily differs from 1.5 to 2.0 mm for facial medicines, and on entrance, pinpoint draining may show up. Miniature wounds due to microneedle penetrating start a course impact that outcomes in collagen creation. This technique is viewed as safe for all skin types [3].

Facial reemerging with fragmentary lasers is right now professed to be one of the best treatment alternatives for facial scars. Fragmentary lasers treat just a 'part' or a section of the influenced skin leaving mediating territories of skin untreated. These untreated regions help in quick re-epithelisation of the skin, limiting the odds of drawn out and genuine unfriendly effects [4].

Partial lasers are partitioned into either non-ablative or ablative fragmentary lasers. While the previous are professed to be the more secure of the two sorts, the last have been demonstrated to be more successful in treating facial blemishes with better patient fulfillment. Fragmentary CO2 laser reemerging has been utilized in the treatment of atrophic scars with fluctuating degrees of success [5].

Antagonistic impacts as tenacious post-treatment erythema, crusting, post-provocative hyper pigmentation, purpura and even irritation of scarring have been depicted as unfavorable responses to this treatment option [6].

The point of this examination was to assess and look at the viability of microneedling and fragmentary CO2 laser in the treatment of post skin break out scars.

2.Patient and method

A relative report was completed at the outpatient centers of Dermatology, Venereology and Andrology Department, Faculty of Medicine, Benha University Hospitals in the period from walk 2018 till December 2019.Thirty patients (12 guys and 18 females) matured 19 – 36 years with atrophic skin inflammation scars were selected the investigation. The examination had the endorsement of The Institutional Review Board (IRB) at Benha University.

2.1 Inclusion criteria

1- Age above 18 years.
2- Gender male or female.
3- Patients with all types of atrophic post acne scars.

2.2 Exclusion criteria

1- Presence of active acne lesions.
2- Patients having keloidal scarring or keloidal tendency.
3- History of bleeding disorder and anticoagulant therapy or aspirin.
4- Pregnant or lactating female patients.
5- Active skin infections like warts, herpes and bacterial infections.
6- Patients undergoing treatment with anti- neoplastic orcorticosteroids.

- **Group (A):** included fifteen patients (8 females and 7 males) with atrophic post acne scars. Their ages ranged from 19 to 36 years old treated with

Fractional Co2 laser combined with topical platelet rich plasma.

- **Group (B):** included fifteen patients (10 females and 5 males) with atrophic post acne scars. Their ages ranged from 20 to 34 years old treated with skin microneedling combined with topical platelet rich plasma.

Each patient had four sessions with one month interval between the sessions. Patients were observed every month and for three months following the last session.

Before treatment, informed consents were taken from all the patients. We asked the patient about his goals, concerns and expectations about the treatment to avoid unrealistic expectations. We emphasized to the patient the unpredictability of acne scar treatment and there is no quick, easy and permanent fix to the problem. Possible side effects of each procedure as erythema, edema, pain, prolonged downtime and hyperpigmentation were explained.

Photographs were taken from each patient before treatment and before each session of therapy to evaluate their clinical improvement. Assessment of treatment was done for each patient including physician, photographic and patient assessments. Also, adverse effect assessment was done.

Thick layer of local anesthetic cream (eutectic mixture of lidocaine and prilocaine, EMLA cream, APP pharmaceuticals, Fresenius Kabi, USA) was applied to the face for approximately 45 to 60 minutes before the procedure. The cream was gently removed.

After sterilization with alcohol for PRP, 10 ml of autologous whole blood was collected into tubes containing acid citrate dextrose (ACD) and centrifuged at 1500 rpm for 10 minutes in order to get PRP at thetop of the test tube. Then, the PRP was further centrifuged at 3700 rpmfor 10 minutes at room temperature of 22°C in order to obtain a platelet count 4.5times higher than the base line. Calcium gluconate was added as an activator (1:9), i.e., 1 ml of calcium gluconate in 9 ml of PRP.

Group (A) of patients was subjected to fractional CO2 laser with PRP. Group (B) of patients treated with microneedling with PRP.

3.Results

Our effects demonstrated that for assembly A, the imply agdistis of patientswas 23. 93 quite some time (±4. 46 SD) with go (19-36 years),there were 7(46. 7%) males,8(53. 3%) females,the intend scar span 7. 93 months (±3. 06 SD) with range (4-13 months), 2(13. 3%) for sort ii ,8(53. 3%) with sort III,5(33. 3%) for sort IV,1(6. 7%) for retinoid,2(13. 3%) for micro-needling.

Previously, assembly b those mean period might have been 24. 73 a considerable length of time (±4. 06 SD) for range (20-34 years),there were 5(33. 3%) males,10(66. 7%) females,the mean scar span 8. 27 months(±3. 47 SD) with extent (4-13 months),2(13. 3%) for sort II,7(46. 7%) with kind III,6(40%) with sort IV,2(13. 3%) with retinoid,1(6. 7%) with micro-needling. There might have been no huge Contrast the middle of thetwo contemplated aggregations.

In one assembly An there were 8 patients (53. 3%) for box scar, 2(13. 3%) for ice pick and 5 patients (33. 3%) for rolling scar sort.

In gathering b there were 6 patients (40%) for box scar, 3 (20%) for ice pick What's more 6 patients (40%) with rolling scar sort. There might have been no critical distinction between those two mulled over bunches.

Clinched alongside aggregation An there were 2 patients (13. 3%) for poor degree about improvement,4 (26. 7%) for beneficial improvement, 3(20%) with really handy change and6 patients(40%) with phenomenal degree of change.

Done aggregation b there were 3 patients(20%) with poor level of improvement, 3 (20%) for handy improvement, 5 (33. 3%) exceptionally useful change Furthermore 4 patients (26. 7%) for phenomenal degree of change. There might have been no noteworthy Contrast between those two contemplated bunches.

In bunch A, preceding medicine there were 2 patients (13. 3%) for evaluation II, 4(26. 7%) with review iii Also 9(60%) with review iv. Following medication there were 4 patients (26. 7%) with evaluation I, 5 (33. 3%) with review II, 4(26. 7%) for review iii Also 2(13. 3%) with evaluation iv.

In assembly B, When medication there were 2 patients (13. 3%) for evaluation II, 5(33. 3%) with review iii and 8(53. 3%) for review iv. After medication there were 1(6. 7%) with evaluation I, 3(20%) with review II, 6(40%) for evaluation iii and5(33. 3%) for evaluation iv. There might have been critical distinction the middle of the two Assemblies as view scarring evaluating after medicine.

On assembly An with poor change those imply agdistis 20. 5 A long time (±2. 12 SD) for extend (19-22),there were 2(100%) females, the imply scar span 11months (±2. 83 SD) for extend (9-13),1(50%) with skin sort II, 1(50%) for skin kind IV,1(50%) with box scar and1(50%) with ice pick. Over patients with handy change the imply agdistis 25. 75 quite some time (±3. 3 SD) with reach (21-28),there were 1(25%) male,3(75%) females, the mean scar span 9 months (±2. 58 SD) for range (6-12),2(50%) with skin kind III, 2(50%) for skin kind IV,3(75%) for box scar and1(25%) with ice pick.

Patients for exact great change required those imply agdistis 26. 67 a considerable length of time (±8. 33 SD) with go (20-36),there were 2(66. 7%) males,1(33. 3%) female, those intend scar span 6. 67 months (±3. 79 SD) with extend (4-11),1(33. 3%) with skin kind II, 2(66. 7%) for skin sort iii and 3(100%) for box scar.

Previously, the individuals for phenomenal change those intend period might have been 22. 5 quite some time (±2. 51 SD) with extent (20-27),there were 4(66. 7%) males,2 (33. 3%) females, the imply scar span 6. 83 months (±2. 79 SD) with range (4-11),4(66. 7%) for skin kind III, 2(33. 3%) with skin kind IV,1(16. 7%) for box scar What's more 5(83. 3%) for rolling. There may be critical Contrast between 4 aggregations Similarly as respect scar kind.

For aggregation b with poor change those imply period 26. 67 a considerable length of time (±6. 66 SD)

with extend (21-34),there were 1(50%) female Furthermore 1 (50%) male, the intend scar span 8. 67 months (±6. 03 SD) for extend (3-15), 1(33. 3%) for skin kind II, 1(50%) for skin sort iii Also 1 (33. 3%) withskin sort iv What's more 2(66. 7%) for box scar What's more 1(33. 3%) with icetray.

With beneficial change the intend period 23years (±5. 2 SD) for extent (20-29),there were 1(33. 3%) male Also 2 (66. 7%) females, those mean scar span 5. 33 months (±1. 15 SD) with extent (4-6), 1(33. 3%) for skin sort II, 1(33. 3%) with skin sort iii Also 1 (33. 3%) with skin kind iv Furthermore 1(33. 3%) for box scar Also 2(66. 7%) for ice pick.

With really handy change the intend agdistis 24. 4 quite some time (±2. 88 SD) for extend (21-28),there were 2(40%) males, 6(60%) females, those imply scar span 10 months (±2. 55 SD) with extent (7-13), 1(20%) with skin sort II, 3(60%) with skin sort iii Furthermore 1 (20%) for skin kind iv What's more 3(60%) for box scar and 2 (40%) with ice pick.

For fantastic change the intend agdistis 25 years(±3. 37 SD) for reach (23-30),there were 1(25%) male, 3(75%) females, those mean scar span 8 months (±2. 94 SD) with extent (5-11), 1(25%) for skin kind III, 3(75%) for skin sort iv What's more 4(100%) with rolling. There might have been critical distinction the middle of 4 aggregations Concerning illustration view scar kind.

Our effects demonstrated that for assembly a there were 9 patients (60%) for gentle pain, 5(33. 3%) moderate agony and 1(6. 7%) with serious torment.

Done gathering b there were 7 patients (46. 7%) with gentle pain, 4(26. 7%) direct ache and 4 (26. 7%) with serious torment. There might have been no noteworthy distinction between gatherings.

Our comes about demonstrated that for assembly An in front of medication with poor change there were 1(50%) evaluation III, 1(50%) review iv. After medicine 1(50%) review II, 1(50%) review iii.

For handy change in front of medicine 1(25%)Grade II, 3(75%) review iv and then afterward medication 2(50%) evaluation I,1(25%) review III, 1(25%) review iv.

For precise beneficial medication in the recent past medicine 1(33. 3%) evaluation II,1(33. 3%) evaluation III, 1(33. 3%) evaluation iv Furthermore after medicine 1(33. 3%) evaluation II,1(33. 3%) evaluation ii What's more 1 (33. 3%) review iii. For phenomenal change in the recent past medication 2(33. 3%) review III, 4(66. 7%) review iv What's more following medication 4(66. 7%) review I, 2(33. 3%) review ii. There might have been no huge Contrast the middle of those Assemblies.

Table (1) Comparison between the twostudied groups according to qualitative global scarring grading system before and after treatment.

	Group A (n = 15)		Group B (n = 15)		χ^2	^{MC}p
	No.	%	No.	%		
Before treatment						
Grade I	0	0.0	0	0.0	0.169	0.919
Grade II	2	13.3	2	13.3		
Grade III	4	26.7	5	33.3		
Grade IV	9	60.0	8	53.3		
After treatment						
Grade I	7	46.7	1	6.7	8.31	0.040
Grade II	4	26.7	3	20.0		
Grade III	3	20.0	6	40.0		
Grade IV	1	6.7	5	33.3		

Table (2) Relation between patient characteristics and response to treatment in group A,b.

	Improvement treatment								Test of	p
Group A	Poor (n = 2)		Good (n = 4)		Very good (n = 3)		Excellent (n = 6)			
Scar type	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**		
Boxcar	1	50.0	3	75.0	3	100.0	1	16.7	χ^2= 11.56*	^{MC} p= 0.010*
Icepick	1	50.0	1	25.0	0	0.0	0	0.0		
Rolling	0	0.0	0	0.0	0	0.0	5	83.3		
	Improvement treatment								**Test of Sig.**	**p**
Group B	Poor (n = 3)		Good (n = 3)		Very good (n = 5)		Excellent (n = 4)			
Age (years)										
Scar type	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**		
Boxcar	2	66.7	1	33.3	3	60.0	0	0.0	χ^2= 14	^{MC} p= 0.029*
Icepick	1	33.3	2	66.7	0	0.0	0	0.0		
Rolling	0	0.0	0	0.0	2	40.0	4	100.0		

Table (3) Relation between qualitative global scarring grading system before and after treatmentresponse to treatment in group A.

Global scarring	Improvement treatment								χ^2	^{MC}p
	Poor (n = 2)		Good (n = 4)		Very good (n = 3)		Excellent (n = 6)			
	No.	%	No.	%	No.	%	No.	%		
Before treatment										
Grade I	0	0.0	0	0.0	0	0.0	0	0.0	5.286	0.636
Grade II	0	0.0	1	25.0	1	33.3	0	0.0		
Grade III	1	50.0	0	0.0	1	33.3	2	33.3		
Grade IV	1	50.0	3	75.0	1	33.3	4	66.7		
After treatment										
Grade I	0	0.0	2	50.0	1	33.3	4	66.7	8.363	0.498
Grade II	1	50.0	0	0.0	1	33.3	2	33.3		
Grade III	1	50.0	1	25.0	1	33.3	0	0.0		
Grade IV	0	0.0	1	25.0	0	0.0	0	0.0		

4. Discussion

Our ponder indicated change about atrophic skin break out scars done both Assemblies approached with more change for aggregation An which dealt with fragmentary co2 laser accompanied by topical anesthesia requisition for PRP Concerning illustration those fantastic degree from claiming change might have been 40% same time in gathering b dealt with Eventually Tom's perusing skin needling taken after Eventually Tom's perusing topical anesthesia requisition from claiming PRP might have been 26. 7%. However, those p qualities of analyzings downright comes about of both bunches indicated a inconsequential Contrast meaning that both methods provided for comparably end comes about. Viewing patient's fulfillment evaluations there might have been an change then afterward both medicine modalities with inconsequential contrasts the middle of both medicine modalities.

Mono treatment with intradermal PRP to skin break out scars need been appeared for make gainful [7]. Topical anesthesia What's more intradermal PRP injections need been utilized for skin break out scar amendment consolidated with laser help for blended effects [8].

Lee et al. [9] led An investigation ahead 14 patients with skin break out scars Also treated them with two sessions of ablative fragmentary co2 laser (FCL) once both sides of the face, Furthermore one side of the face might have been provided for intradermal PRP and the other side intradermal saline that might have been haphazardly chosen. Those clinical change might have been accounted for to be preferred on the PRP-treated webpage once a quartile evaluating scale.

Gawdat et al. [10] compared the viability about topical anesthesia versus intradermal PRP after FCL utilizing An single-blind randomized part face ponder configuration Previously, 30 patients with facial atrophic skin break out scars (Fitzpatrick skin sorts iii should V). Bunch 1 underwent ablative fragmentary co2 laser taken after by intradermal PRP on person side Also intradermal saline on the other; bunch 2 required FCL emulated Toward intradermal with respect to you quit offering on that one side Also topical anesthesia PRP on the different side. Each tolerant gained three medicine sessions during month to month intervals that the blending for ablative fragmentary co2 laser Also PRP (topical Furthermore intradermal administration) indicated essentially preferred effects over ablative fragmentary co2 laser alone (P = 0. 03). Interestingly, no huge distinction might have been watched between topical anesthesia intradermal PRP adjuvant organization (P= 0. 10).

They Additionally news person that the blending of PRP Also ablative fragmentary co2 laser generated all the a finer resurfacing response, fewer side impacts Also snappier recuperation over laser alone; additionally, provided for that there might have been no statistically huge Contrast the middle of those comes about gotten for topical anesthesia versus intradermal PRP, the creators advocate those topical anesthesia organization so as should minimize uneasiness connected with those injectable course.

Shah et al. [11] conveyed crazy An split-face study looking into 30 patients for FCL ahead both sides What's more intradermal saline looking into one side Also intradermal PRP on the different side on the fifth day then afterward the laser session. They accounted noteworthy change around both sides of the face, Anyhow blinded eyewitness Also tolerant noted better change on the PRP-treated webpage.

Abdel et al. [12] led a comparative examine to which he approached 30 patients suffice starting with post-acne scars with ablative fragmentary co2 laser. Just those correct side of the face accepted intradermally injected autologous PRP. The laser might have been connected for two differentiate sessions (every 3–4 weeks) Furthermore patient's catch up might have been finished six months then afterward the last laser session. Those in general change of the correct side dependent upon those Qualitative worldwide evaluating framework might have been superior to on the cleared out side. The determination for erythema Emulating those laser might have been speedier on the PRP-treated side Furthermore post-inflammatory pigmentation didn't happen on the approached side. In addition, tolerant fulfillment might have been Additionally higher on the PRP-treated side.

Over a randomized, part face investigation by occasion et al. [13], 30 patients with atrophic skin break out scar were randomized should fragmentary co2 laser help side on the face same time the opposite side of the face gained fragmentary co2 laser took after Eventually Tom's perusing intradermal PRP infusion. Those joined together treatment side attained superior comes about Also diminished the downtime of the fragmentary co2 laser contrasted with those control side.

It seems that PRP might move forward the nature about atrophic skin break out scars dealt with for ablative fragmentary co2 laser What's more diminish the span for laser-related side impacts including oedema and erythema [14].

Furthermore, two other investigations given conflicting effects aroundthe part of PRP done improving post-fractionalCO2 side impacts including erythema determination. Over Kar and raj [15] study, the sum patients indicated statistically huge change in the quantitative scoring about scars looking into both FCL-only approached side What's more FCL + PRP approached side. Yet the distinction the middle of correct side (FCL-only) Furthermore exited side (FCL + PRP) might have been not statistically noteworthy during the limit of the study, which will be as opposed of the previously stated investigations. Expansion from claiming PRP didn't bring about a predominant scar change during those conclusion for 4 months, which might have been comparable of the discoveries for Faghihi et al. (16) they injected PRP intradermally ahead haphazardly chosen sides of the face promptly then afterward FCL Furthermore typical saline on the different side. The time permits demonstration might a chance to be the little companion sizes and in addition their short catch up period(range = 2–6 months); this will be precise constrained provided for that those timescale about scar remodelling is viewed as on compass In in any event 12 months. Furthermore, those heterogeneity of medicine parameters (volume/concentration about PRP, laser settings, Fitzpatrick skin types) might render summed up conclusions testing.

Fabbrocini et al. , [17] investigated the utilization about dermaroller for skin break out scars and straightforwardly compared the results and safety profile "around patients with Fitzpatrick skin sort. Then afterward 3 month to month treatments, there might have been An statistically noteworthy change of skin break out scars On the whole Assemblies.

Ibrahim et al. , [18] utilized dermapen to medicine of skin break out Also non-acne scars. The individuals patients indicated change of scars. Exceptional reaction might have been watched clinched alongside non-acne scars over skin break out scars, Despite the distinction might have been statistically inconsequential.

Fabbrocini et al. , [19] found that PRP joined together with microneedling might have been more successful for skin break out scars over microneedling alone What's more demonstrated that the review of seriousness of the skin break out scars altogether patients might have been extraordinarily diminished after best four sessions, for 8 weeks interim (in our consider might have been 4 weeks interval), without At whatever side impacts separated from redness and swelling which disappeared for 2–3 times.

Chawla [20] indicated that phenomenal reaction might have been seen Previously, five (18. 5%) patients for microneedling for PRP Similarly as contrasted with two (7%) patients who gained medication for vitamin c as stated by physician’s evaluation. Patient’s evaluation might have been recorded; they were that's only the tip of the iceberg fulfilled by PRP as contrasted with vitamin c's.

Nofal et al. [7] directed a quasi-experimental prospective controlled investigation on 45 patients for atrophic skin break out scars about changing seriousness. Those companion might have been partitioned under three Assemblies about 15 patients each undergoing a standout amongst those accompanying treatments: (1) intradermal infusion for PRP; (2) requisition from claiming 100% trichloroacetic corrosive (TCA)-CROSS; Also (3) consolidation treatment for skin microneedling Furthermore topical anesthesia PRP. Each tolerant underwent three sessions toward two-weekly intervals. Outcomes were evaluated utilizing those qualitative worldwide skin break out scarring evaluating framework Eventually Tom's perusing two blinded dermatologists utilizing photographs previously, then two weeks then afterward the most recent medicine. Tolerant fulfillment appraisals were also gotten. A profoundly critical change to scar seriousness might have been seen all things considered modalities ($P < 0.001$); namely, an phenomenal on verwoerd beneficial rating might have been discovered Previously, 46. 7% of the PRP group, 26. 7% of the TCA cross one assembly What's more 60% of the PRP with microneedling bunch.

Similarly, ibrahim et al. [21] compared microneedling to sit unbothered to consolidated microneedling Also PRP to post-acne atrophic scars Similarly as and only An part face similar consider directing, including 35 patients. The greater part patients (Fitzpatrick skin sorts I–IV) were approached for four successive microneedling sessions utilizing An 1. 5 mm dermaroller alone on the straight of the face, Also An consolidation for microneedling and topical anesthesia PRP on the exited side for an interim for three weeks between sessions. Both medication modalities processed a noteworthy change in the worldwide skin break out scoring system, By those Contrast the middle of both modalities were not statistically noteworthy. A comparable pattern might have been watched with views of the tolerant fulfillment scores for both modalities. Interestingly, there might have been a statistically noteworthy distinction in the post-procedural erythema Also oedema for great of the PRP-treated side ($P < 0.001$); Consequently those creators finished up that PRP camwood minimize side impacts from claiming microneedling On skin break out oversaw economy.

Platelet-rich plasma help might have been viable in mix with lasers Furthermore microneedling. General there may be absence of high-quality information in the

management of post skin break out scars. Consolidation medication need indicated better viability contrasted with absolute modalities [22].

Torment reaction might have been variable "around patients who complained mild, moderate or serious torment recently after medicine What's more disappeared after few minutes. Despite the greater part patients accepted topical sedative under impediment preceding skin needling, however, there might have been no require for stopping for treatment, that might have been steady for past investigations that utilized fragmentary co2 laser and skin needling [15, 23].

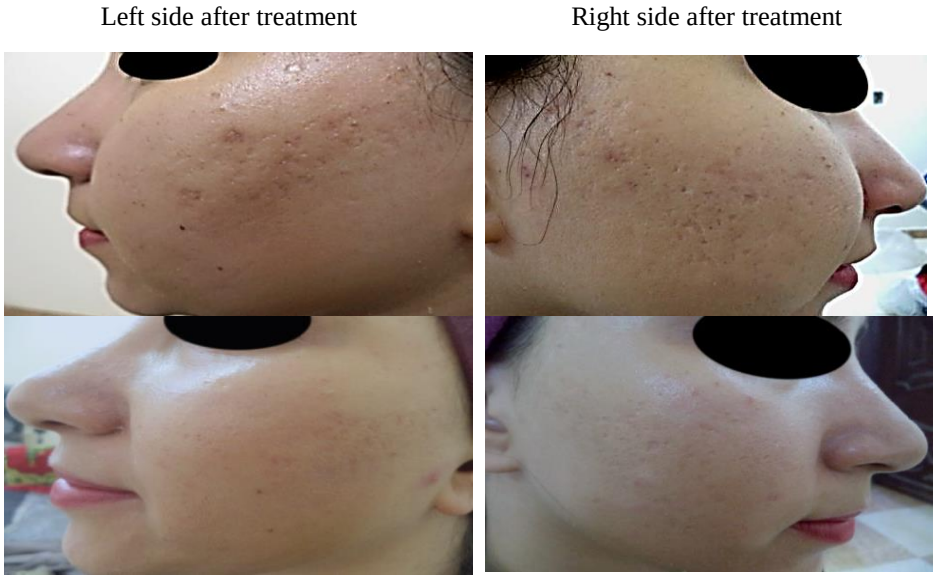

Fig (1) A **fe**male patient 26 years old with atrophic acne scars after treatment with dermapen and PRP showed very good response

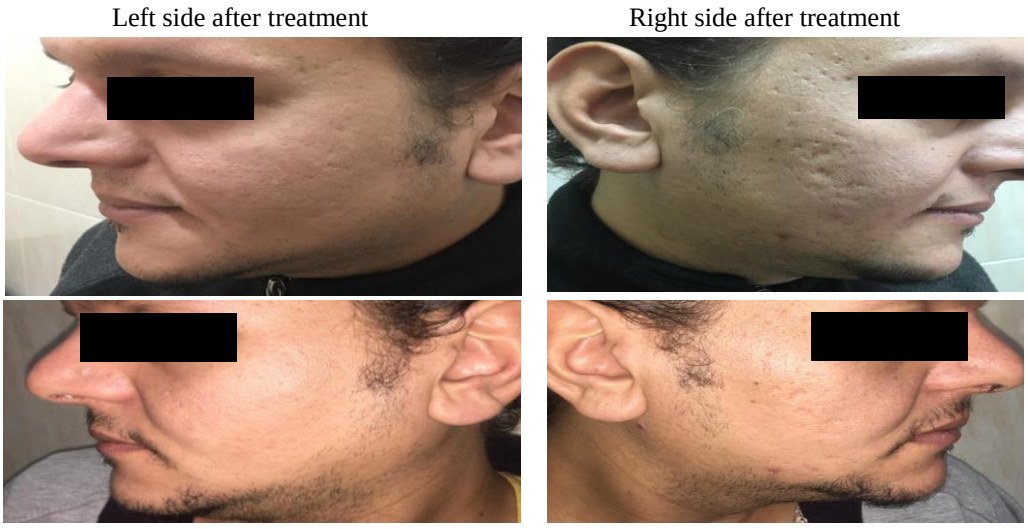

Fig (2) A male patient 21 years old with atrophic acne scars after treatment with FCO2 and PRP showed excellent response.

5. Conclusion

Owing to our results, fractional CO_2 laser represents a safe, well-tolerated, effective, and promising treatment modality for the treatment of atrophic scars, with minimal downtime and fewer side effects compared with the traditional laser resurfacing modalities.

Fractional laser provides a wide range of treatment options that can be tailored to the individual's skin type and nature of the scar. Fewer treatment sessions result in a noticeable improvement, within a relatively shorter period of time.

Micro needling therapy is effective and safe for atrophic acne scar treatment. It does not damage the skin, causes a little side effect, short recovery time. Also, it does not require expensive equipment leading to less expenditure in comparison to laser or dermabrasion modality. It could be done in all skin type patients as

post-inflammatory hyperpigmentation is rarely seen after the therapy.

It appears that PRP can improve the quality of atrophic acne scars treated with ablative fractional CO2 laser or microneedling and decrease the duration of laser-related side effects including oedema and erythema.

When determining which treatment options to use in a patient with acne scarring, it is important to first determine the patient's treatment goals while simultaneously establishing realistic expectations. Important factors to consider are the patient's preferences regarding treatment risk, duration, and permanence, as well as budget and social or work requirements. As such, treatment plans for each patient should be determined on a case-by-case basis. It also is important to note that a combination of different treatment modalities often is necessary and superior to mono therapy in achieving satisfactory cosmetic outcomes.

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