

Results

The study included nine patients with mean(\pm SD) age 21.78 ± 8.39 years (range: 11 to 36 years). The duration of morphea lesions varied from three months to 20 years with an average duration of 5.96 ± 2.41 years, the clinical characteristics of morphea lesions are shown in table 1.

The clinico-demographic data of the patients and the characteristics of morphea lesions are shown in table 1.

The severity of the disease assessed by LoSAI showed a significant lowering in the score after the end of the treatment sessions and the endpoint of follow up with p-value =0.02 and 0.04 respectively. Also, LoSDI assessing skin damage revealed a highly significant decrease in the score when comparing the start point with the endpoint of treatment and the follow up with p-value = 0.007 for each.

The total of LoSAI and LoSDI constituting the localized scleroderma cutaneous assessment tool also showed a significant decrease in the score with p-value = 0.008 and 0.014 for the therapeutic endpoint and after 6 months follow up respectively as shown in table 2.

Ten morphea lesions assessed by US cutaneous and subcutaneous as a single unit due to loss of border between dermis and subcutaneous tissue showed a significant difference when compared to the healthy control lesion at the baseline however, this difference intriguingly vanished after the end of the treatment and follow-up, with p-values =0.173 and 0.534, respectively. By assessing the thickness of the cutaneous portion of the remaining 11 lesions we found a significant difference in the thickness of morphea lesions when compared to healthy control at the baseline, however after the end of the treatment, the thickness of the lesions increased, and the previous significance difference disappeared. On the other hand, the subcutaneous portion of these lesions remained statistically significant when compared to the healthy control area as shown in table 3.

Only three patients were moderately satisfied with their treatment success, even though most patients gave the performed maneuver very high rating. On the other

hand, most of the patients (89%) received moderate to very good ratings on the quartile scale of the doctor's evaluation as shown in table 4.

The PRP injection caused pain in all patients, temporary facial edema in four patients (45%), and transient erythema in only two patients. as shown in table 5.

There was a significant positive correlation between the duration of the lesion and the improvement assessed by the ultrasound as shown in table 6.

Table 1: Clinicodemographic data of patients and features of morphea lesions

Characteristics of patients (N: 9)	
Age (years)	
Mean ± SD	21.78 ± 8.39
Range	11-36
Gender: N (%)	
Female	8 (88.89)
Male	1 (11.11)
Number of lesions	
Mean ± SD	2.11 ± 1.76
Range	1-6
Characteristic of morphea lesions (N:21)	
Duration (years)	
Mean ± SD	5.96 ± 2.41
Range	0.25 -10
Morphea subtypes	
Linear	13(61.90)
Generalized	6(28.57)
Guttate	1(4.76)
Plaque	1(4.76)
Site of lesions	
Face	9(42.86)
Trunk	4(19.05)
Leg	3(14.29)
Thigh	2(9.52)
Scalp	2(9.52)
Breast	1(4.76)
Previous treatment	
No treatment	11 (52.38)
Topical	7(33.33)
UVA	2(9.52)
Excimer laser	1(4.67)

Data expressed as mean ± SD (range), frequency (percentage).

Table 2: Change in morphea disease activity and damage

N=9	Before	After	Follow up	P- value
	Mean ± SD			
LoSAI	4.11 ± 2.93	1.89 ± 1.45	1.22 ± 1.20	P ₁ = 0.020*, P ₂ = 0.041*, P ₃ = 0.234
LoSDI	8.89 ± 6.09	5.44 ± 6.23	5.22 ± 6.32	P ₁ = 0.007*, P ₂ = 0.007*, P ₃ = 0.597
LoSCAT	13 ± 7.28	7.33 ± 6.82	6.44 ± 7.09	P ₁ = 0.008*, P ₂ = 0.014*, P ₃ = 0.251

LoSCAT: Localized Scleroderma Assessment Tool. LoSDI: the Localized Scleroderma Damage Index. LoSSI: Localized Skin Severity Index. P1: P-value for comparing between pre and after treatment. P2: P-value for comparing between pre and follow up point. P3: P-value for comparing between endpoint of treatment and follow up. Data expressed as mean ± SD. *P value was considered significant if < 0.05.

Table 3: Comparing atrophied morphea lesions versus healthy control by Ultrasonography at different time points.

	Morphea lesion	Healthy control	P _a -value
	Mean ± SD		
Skin and SC assessment, n=10			
At baseline	1.77 ± 1.13	3.29 ± 1.72	0.007*
After 3 months of treatment	2.73 ± 1.33	3.29 ± 1.72	0.173
After 6 months follow up	2.93 ± 1.33	3.29 ± 1.72	0.534
P value	P ₁ = 0.001*, P ₂ = 0.002*, P ₃ = 0.135		
Skin assessment, n=11			
At baseline	1.67 ± 0.70	2.66 ± 0.51	0.006*
After 3 months of treatment	2.24 ± 0.63	2.66 ± 0.51	0.094
After 6 months follow up	2.21 ± 0.53	2.66 ± 0.51	0.024*
P value	P ₁ = 0.001*, P ₂ = 0.015*, P ₃ = 0.918		
#SC assessment, n=10			
At baseline	5.53 ± 1.96	7.71 ± 1.65	<0.001*
After 3 months of treatment	6.52 ± 1.93	7.71 ± 1.65	0.002*
After 6 months follow up	6.62 ± 2.09	7.71 ± 1.65	0.001*
P value	P ₁ = 0.004*, P ₂ = 0.098, P ₃ = 0.436		

#there was one lesion in the breast area, so the SC tissue cannot be demonstrated. P_a-value for comparing healthy control with morphea lesions at different time points using (Dunnett's multiple comparisons test). P₁: P-value for comparing between pre and after treatment. P₂: P-value for comparing between pre and follow up point. P₃: P-value for comparing between endpoint of treatment and follow up. Data expressed as mean ± SD. *P value was considered significant if < 0.05.

Table 4: patients and doctors' satisfaction

Patients' satisfaction	
Fair	3 (33.33)
Moderate	1 (11.11)
Very good	5 (55.56)
Doctors' satisfaction	
Fair	1 (11.11)
Moderate	5 (55.56)
Very good	3 (33.33)

Data expressed as frequency (percentage).

Table 5: Complications of the injected sites.

Side effects	
Pain	9 (100.0)
Transient edema	4 (44.44)
Transient erythema	2 (22.22)

Data expressed as frequency (percentage).