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Evaluation of stress, anxiety and depression in melasma patients

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Abstract

Melasma is a common acquired cutaneous pigmentary disorder clinically manifesting as symmetrical light to dark brown patches with an irregular border seen on the face. Management of melasma is challenging because it is a chronic condition with common recurrences and is often difficult to treat. Pigmentary disorders are likely to increase the risk for psychological comorbidities owing to the associated stigma, frequent relapses, and long-term treatment.

Melasma is not classified under the group of psych cutaneous disorders but overall integrated approach about mental health of melasma patients will be more beneficial. Objective of this study is to evaluate and compare the prevalence of stress, anxiety, and depression in patients with melasma and people without melasma. We had recruited four hundred participants satisfying inclusion and exclusion criteria. Out of 400 participants, 200 participants diagnosed with melasma represented case group.

Remaining 200 participants were healthy individuals acted as control group. Prevalence of stress, anxiety and depression was evaluated using Cohens perceived stress scale and HADS (Hospital anxiety and depression scale) in all the participants.

In our study 42% of the case group were experiencing high stress which is greater compared to 24% in control group, in case group 32% had abnormal depression score whereas it was 14% in control group and 20% of case

group had abnormal anxiety score compared to 16% in control group.

As there is increased prevalence of stress, anxiety and depression in melasma patients compared to control group, overall integrated approach about mental health of melasma is needed.

Keywords: Melasma, Stress, Depression, Anxiety, MASI (Melasma Area Severity Index).

Introduction

Melasma is a common acquired cutaneous pigmentary disorder characterized by symmetrical light to dark brown patches with an irregular border appear primarily on face. It is most prevalent among young to middle aged women. Exacerbating factors include sun exposure, pregnancy, over the counter face creams and oral contraceptive pills[1].

Several factors have been linked to melasma, among them UV exposure and hormonal factors appear to be the most significant[2].

It has been speculated that this is due to increased levels of estrogen and progesterone stimulate the activity of melanocytes, so pregnancy and

oral contraceptives have been linked to increased skin pigmentation[1]. Also, stress causes the body to make more of the cortisol hormone. An increase in cortisol may trigger melasma[3].

In melasma epidermal melanocytes are normal to slightly increased in number, and they are enlarged with prominent dendrites[1,4,5].

Wood's lamp examination can be helpful to identify the depth of the melanin pigmentation and determine the type of melasma (epidermal, dermal or mixed).

Categorization of the type of melasma is useful in the choice of treatment and to counsel the patient about expectations of treatment outcome, since dermal melasma is generally less responsive to therapy, especially to topical modalities[2, 6].

Management of melasma is challenging because it is a chronic condition with recurrences and is often less responsive to treatment[7,8].

Current treatment regimen includes variety of topical creams in combination. Triple therapy with topical hydroquinone, tretinoin and Corticosteroid (e.g., hydroquinone 4%, fluocinolone acetonide 0.01% and tretinoin 0.05%) is preferred [11,12].

Response to monotherapy is generally disappointing.

Many studies showed that Pigmentary disorders such as melasma, vitiligo and ADMH (acquired dermal macular hyperpigmentation) are likely to increase the risk for psychological comorbidities owing to the associated stigma, frequent relapses and long-term treatment[9].

Melasma is not classified under the group of psych cutaneous disorders, but the overall integrated approach will be beneficial[10]

Materials and method

Four hundred participants ≥18 years and below 60 years were recruited for the study, from OPD of department of DVL in tertiary hospital, after taking consent.

Out of 400, 200 participants were having melasma from past 6-months and other 200 were healthy normal individuals chosen from attenders of patients coming to OPD.

Participants having any co-morbidities and taking medication for any other conditions were excluded. Institutional ethical clearance was taken before undertaking the study.

MASI (melasma area severity index) was calculated to all melasma patients by clinician.

All 400 participants were evaluated for prevalence of stress, anxiety and depression using Cohens perceived stress scale and Hospital anxiety depression scale.

Questions were asked by clinician in a quiet room for about 15-20 minutes and score was noted.

Total study duration was 3 months.

Statistical analysis

Data was tabulated in Microsoft Excel v.2017 and was analyzed in trial version of SPSS. Proportion frequencies were used to summarize categorical data. Chi square test of significance was applied to test.

Results

Baseline sociodemographic characteristics of both the groups were compared.

Out of 400 study population 84% were females and 16% were males (Ratio 5:1). In case group 88%(n=176) were females and 12%(n=24) males whereas in control group 80% (n=160) and 20% (n=40) were male. Table 1

Table 1

Sex		Case / control		
		Case	Control	
Female	Count	176	160	0.029
	%	88.0%	80.0%	
Male	Count	24	40	
	%	12.0%	20.0%	

Most of them belonged to reproductive age group (21 to 40 year).

Both in case and control groups majority of the participants were females and they were housewives (54% n= 108).Table 2

Table 2

Occupation	Case / control			p
	Case		Control	
Business	Count	4	16	0.023
	%	2.0%	8.0%	
Clerk	Count	16	16	
	%	8.0%	8.0%	
Driver	Count	4	4	
	%	2.0%	2.0%	
House wife	Count	108	108	
	%	54.0%	54.0%	
Mechanic	Count	8	12	
	%	4.0%	6.0%	
Nurse	Count	8	12	
	%	4.0%	6.0%	
Police	Count	4	4	
	%	2.0%	2.0%	
Software engineer	Count	4	8	
	%	2.0%	4.0%	
Student	Count	24	12	
	%	12.0%	6.0%	
Teacher	Count	20	8	
	%	10.0%	4.0%	

Table 2

40% of the study population was graduates. Figure 1

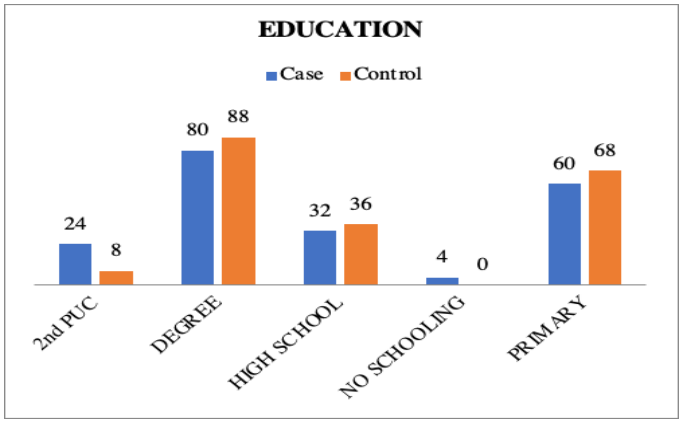


Figure 1

In the case group, mean duration of the disease was 4 months.

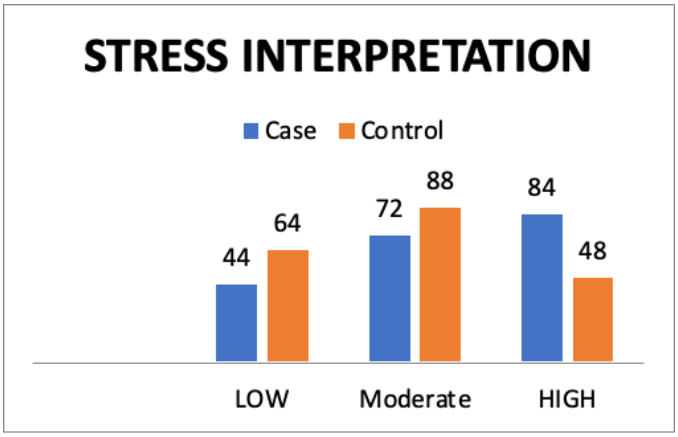
72% of the patients who presented with melasma had not taken any treatment and came for consultation for the first time.

42% of the case group were experiencing high stress compared to 24% in the control group which was statistically significant. (p value = <0.001)Table 3, figure 2

Table 3

Stress Interpretation		Group		P
		Case	Control	
High	Count	84	48	<0.001
	%	42%	24%	
Low	Count	44	64	
	%	22%	32%	
Moderate	Count	72	88	
	%	36%	44%	

Figure 2

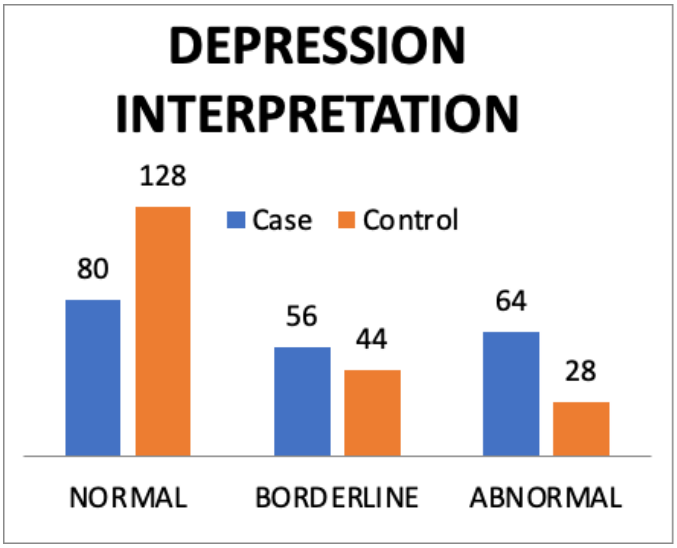


In the case group 32% had abnormal depression score and 28% borderline depression score compared to 14% and 22% respectively in control group, with significant p value (p value: < 0.001) Table 4 figure 3

Table 4

Depression Interpretation		Case / Control		P
		Case	Control	
Abnormal	Count	64	28	<0.001
	%	32.0%	14.0%	
Borderline	Count	56	44	
	%	28.0%	22.0%	
Normal	Count	80	128	
	%	40.0%	64.0%	

Figure 3

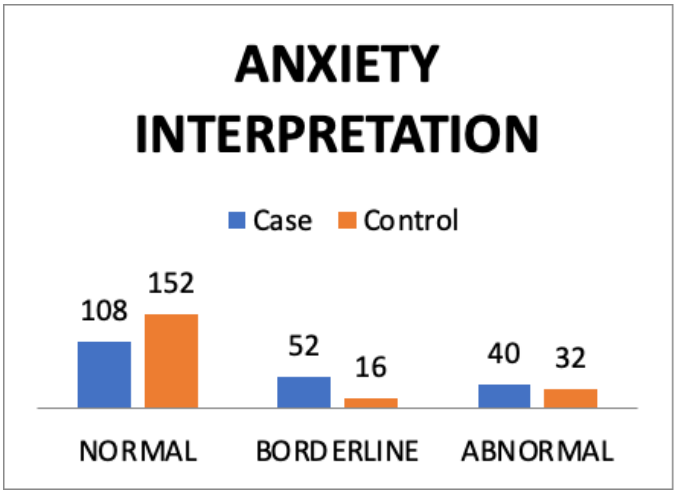


20% of case group had abnormal anxiety score compared to 16% in control group and 26% of case group had borderline anxiety score compared to 8% of control group with significant p value (p value = <0.001)Table 5 figure 4

Table 5

Anxiety score		Case / Control		P
		Case	Control	
Abnormal	Count	40	32	<0.001
	%	20.0%	16.0%	
Borderline	Count	52	16	
	%	26.0%	8.0%	
Normal	Count	108	152	
	%	58.0%	72.0%	

Figure 4



There is a positive correlation between MASI and stress, anxiety and depression score with statistically significant p value (p value: <0.001) figure 5(a b)

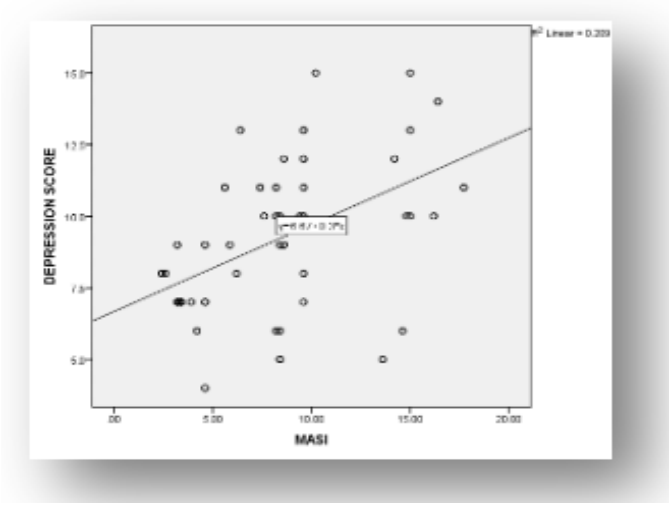


Figure 5a

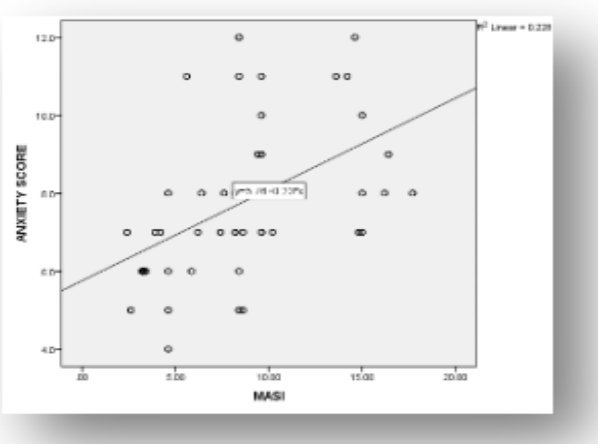


Figure 5b

As the MASI increases stress score of the case group increased with r 0.695 (R^2 linear 0.483)figure 5c

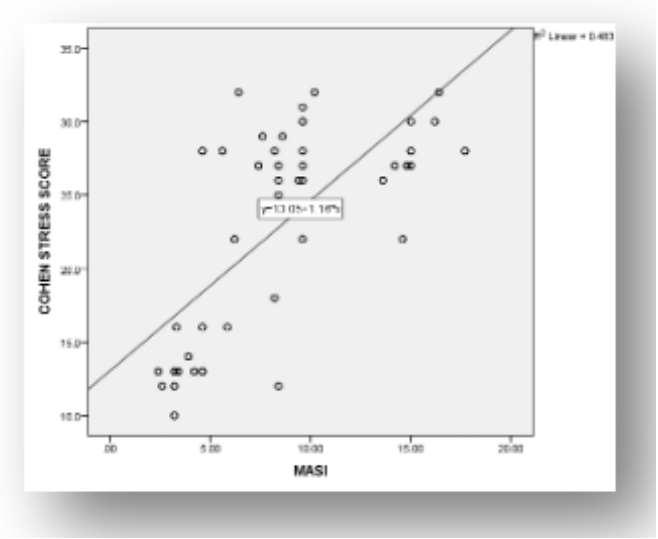


Figure 5c

Discussion

A large group of dermatologic disorders have major impact on Health-related Quality of Life. [12] Somatization is one of the most common issues in healthcare services, associated with substantial functional impairment and healthcare utilization.[13,14]

Compared with the general population, the prevalence of depression was significantly higher in melasma patients.[15] Lower educational levels and younger age had higher depressive symptoms[15].

In our study 42% of the case group were experiencing stress compared to 24% in the control group, whereas in a study by Sharmishtha Shailesh Deshpande et al[16] (sample size = 30) prevalence of stress in melasma patients was 54%. This variation may be due to different sample size.

In our study 32% of case group had abnormal depression score whereas maria Clara et al study showed 43%. Maria Clara et al study was a internet questionnaire based study including 1518 women. Difference in depression score may be due to different sample size.In a

study conducted by Kanish B et al [17] on 123 patients of melasma showed that 34.96% of the patients had depression and they concluded that melasma is associated with depression and anxiety in approximately one third of the patients which is similar to our study.

In our study 20% of case group had abnormal anxiety score which is almost same as kalsoom Jawad et al[15] study (n=38 out of 195) where it is 19.49%. In the same study prevalence of depression is 10.77% (n=21 out of 195) which is low compared to ours. In Knish B et al[17] study prevalence of anxiety is 36.6%.

Talking about the prevalence of psychological disturbance in case group, one has to recognize that in our study data many patients having borderline score in depression, anxiety and stress scale. Early recognition of it and treatment will reduce the burden.

Conclusions

Limitation of the study is, it is a hospital-based study, and thus melasma patients in the community are not represented.

Our study showed that prevalence of stress, anxiety and depression in melasma patients is high compared to normal healthy individuals. So integrated approach about mental health of melasma patients should be considered. It also showed positive correlation between MASI and stress. So, stress may both contribute to the disease and also worsen it. More studies in this area are needed.

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