Original Research Article

Treatment impact on Quality of Life of Dermatological Outpatients- A prospective observational study

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ABSTRACT

Background: The association between dermatology and psychiatry has been well known from mid-nineteenth century and is evolving since then as a consequence of overwhelming psychiatric morbidities among the persons with certain dermatoses. This study is intended to unveil such relationship and to establish gamut of opportunities directed to enhance the quality of life of such individuals.

Aims and Objectives: 1) To assess the socio-demographic profile of patients diagnosed with Acne Vulgaris (AV) and Psoriasis. 2) To grade the severity of disease using Pillsbury scale for AV and Psoriasis Area and Severity Index (PASI) for Psoriasis. 3) To assess the psychological burden of the disease by using Dermatological Life Quality Index (DLQI). 4) To determine the effect of dermatological treatment if any and to assess its impact on DLQI score.

Materials and Methods: This study enrolled 116 patients diagnosed with AV and Psoriasis attending the Department of Dermatology, Venereology and Leprosy Vinayaka Mission Medical College & Hospital, Salem and questions regarding socio-demographic profile, disease severity (PASI and Pillsbury scale), quality of life (DLQI) were measured and compared before and after intervention. Data were entered in Microsoft Excel [2007] and analyzed using Statistical Package for Social Sciences [SPSS] version 21.0 Chicago, USA

Results: This study was dominated by females (twice) and the subjects averaged 27.6 ± 12.9 years of age. The patients with moderate and severe forms of AV were the maximum (96.3%). Similarly the patients with moderate and severe psoriasis comprised two-third. Both the sub-groups has averaged larger effect of the respective disease condition downgrading their quality of life (DLQI score 20.1 ± 3.2 for AV and 23.4 ± 2.4 for psoriasis) although post-treatment scores declined by significant margins (DLQI score 7.9 ± 2.1 for AV and 9.1 ± 2.3 for psoriasis)

Conclusion: As there exist positive correlations between earlier treatment onset and advancing quality of life, expediting the implementation of psychological assessment for the potential dermato-psychiatric illnesses has to be scaled up in all dispensaries.

1. Introduction

Right from the embryonic development there exist a strong relationship between skin and brain as they share a common link "the ectoderm". Furthermore, the concurrence of dermatological and adherent psychiatric conditions have added new opportunities in the evolving field of 'Psychodermatology' as evidence shows that nearly half of the patients have co-existence of these conditions.[1] Depression is the predominant mental illness observed that substantially impinges one's quality of life. This study aims to establish the relationship between the dermatological treatment and its impact on quality of life.

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2. Aims and Objectives

1. To assess the socio-demographic profile of patients diagnosed with Acne Vulgaris (AV) and Psoriasis.
2. To grade the severity of disease using Pillsbury scale [2] for AV and Psoriasis Area and Severity Index (PASI) [3] for Psoriasis.
3. To assess the psychological burden of the disease by using Dermatological Life Quality Index (DLQI). [4]
4. To determine the effect of dermatological treatment if any and to assess its impact on DLQI score.

3. Materials and Methods

This study included 116 subjects attending the Out-patient Department of Dermatology, Venereology and Leprosy, Vinayaka Mission Medical College & Hospital, Salem and has been diagnosed with Acne Vulgaris (AV) and Psoriasis based on appropriate history and clinical examination. We included those who were receiving treatment for the past six months and those who were not given biological treatment in the past one month. We excluded those who were presenting with severe allergic reactions and having other systemic illnesses. The study got clearance from Institute Ethics Committee and the data were collected using semi-structured questionnaire that included basic demographic characteristics of the subjects, the disease severity questions (Psoriasis Area and Severity Index and Pillsbury scale) and questions for assessing the psychological aspects (using Dermatological Life Quality Index or DLQI) that was measured before and after intervention. DLQI assesses how the daily activities, leisure activities, work and school, personal relations and treatment for the conditions affects the diseased quality of life. The collected data were fed into Microsoft Excel [2007] and analyzed using Statistical Package for Social Sciences [SPSS] version 21.0 Chicago, USA. Continuous data were presented as mean $\pm$ standard deviation and categorical data were expressed as frequency or percentage. Statistical tests used were Pearson's chi-square, Independent t-test and Student's t-test. p-value <0.05 was considered significant.

4. Results

A total of 116 subjects (56 Acne vulgaris and 60 Psoriasis patients) were included in this study. The mean age of our study population was 27.6 $\pm$ 12.9 years. The females were affected more than males (2.1:1) in both the skin conditions. The demographic characteristics like age, gender, education, occupation and residence were compared and described in Table 1.

Among the patients with AV, acne punctata remained to be the most common lesion (57%) followed by acne papulous (34%) and acne pustular (9%). Head and neck region (93.7%) especially face was the most common site of presentation in both genders. Some of the participants (6.3%) reported trunk and back as the next commonest site of acne. The patients with moderate (grade III) and severe (grade IV) forms constituted 96.3% of the study subgroup (AV) while only few suffered from mild forms as categorized by Pillsbury criteria. The average DLQI score of these patients before intervention was 20.1$\pm$ 3.2 which has been improved to 7.9 $\pm$2.1 post-intervention. The modes of intervention given were a combination of topical benzoyl peroxide (5-10%), or topical retinoids (adapalene or tretinoin), topical antibiotics (clindamycin or erythromycin) with zinc additives, systemic therapy (T. Doxycycline 100mg BD daily, T. Erythromycin 500 mg BD daily, T. Azithromycin 500 mg thrice a week) and few were subjected to phototherapy or cautery. The duration of all these treatments averaged twelve weeks and succumbed to alterations due to side effects. Erythema (10.3%), abnormal pigmentation (3.9%), dryness, (3.3%) stinging sensation (2.1%) and gastrointestinal complaints (2.1%) were more commonly seen. This difference was found to be statistically significant. (Student's t-test used, p-value <0.05). These individuals were more concerned getting involved in the activities of social interactions like the working or studying environment, leisure and daily activities than the lesion induced problems like pain, itch and treatment related issues.

The onset of psoriasis was observed from childhood (<10 years), adolescence (10-19 years) and adult period in 2.1%, 43.5% and 54.4% of the subjects respectively. In about 6%, joint problems were found. Plaque psoriasis constituted to be the major variant (91.3%) while the remaining forms observed were guttate (6.9%) and pustular type (1.8%). Almost half of the patients (53%) had a positive family history. The disease severity as evaluated by PASI categorized 34.2%, 56.1% and 9.7% of the subjects as having mild, moderate and severe disease. The mode of intervention were topical therapy (22.2%), PUVA (34.3%) and use of non-biological systemic therapy (43.5%). The psychological effects of these skin conditions as assessed by dermatological life quality index (DLQI) was measured and graded in terms of severity and this has been compared pre- and post- intervention (Figure 1).

5. Discussion

Overall the study population has had a significant psycho-dermatological burden as the DLQI averaged having very large effect on the life quality of these individuals. Furthermore, the role of dermatological treatment divulged to be peerless in reverting their mood to normal as evidenced by the improvement of DLQI score.

The period of adolescence is where a person remain more emotionally and socially unstable. Furthermore, AV being the commonest skin condition of adolescence that extends even beyond 25 years of age has more chances of jeopardizing their future had it not been

Table 1: Demographic profile of the study population

| Variables	Acne Vulgaris Male (n=18)	Female (n=38)	Total (n=56)	Psoriasis Male (n=19)	Female (n=41)	Total (n=60)
Marital status						
Single	13 (72.2)	25 (65.8)	38 (67.9)	2 (10.5)	7 (17.1)	9 (15.0)
Married	5 (27.8)	12 (31.6)	17 (30.4)	16 (84.2)	32 (78.0)	48 (80.0)
Separated	0 (0.0)	1 (2.6)	1 (1.7)	1 (5.3)	2 (4.9)	3 (5.0)
Education						
Up to Middle school	10 (55.5)	11 (28.9)	21 (37.5)	13 (68.4)	29 (70.7)	42 (70.0)
High school	5 (27.8)	9 (23.7)	14 (30.4)	3 (15.8)	7 (17.1)	10 (16.7)
Diploma or Graduate	3 (16.7)	18 (47.4)	22 (39.3)	3 (15.8)	5 (6.2)	8 (13.3)
Occupation						
Student	5 (27.8)	12 (31.6)	17 (30.4)	2 (10.5)	4 (9.7)	6 (10.0)
Unskilled	10 (55.5)	17 (44.7)	27 (48.2)	11 (57.9)	25 (61.0)	36 (60.0)
Skilled	2 (11.1)	6 (15.8)	8 (14.3)	4 (21.1)	10 (24.4)	14 (23.3)
Professional	1 (5.6)	3 (7.9)	4 (7.1)	2 (10.5)	2 (4.9)	4 (6.7)
Residence						
Urban	14 (77.7)	20 (52.6)	34 (60.7)	10 (52.6)	18 (43.9)	28 (46.7)
Rural	4 (22.3)	18 (47.4)	22 (39.3)	9 (47.4)	23 (46.1)	32 (53.3)
Disease duration (mean $\pm$ SD)	8.3 ± 4.4	10.6 ± 5.7	9.8 ± 6.3	14.3 ± 6.2	17.0 ± 7.3	16.4 ± 7.9
Age (mean $\pm$ SD)	24.1 ± 3.5	22.1 ± 6.5	23.1 ± 8.5	31.1 ± 5.8	35.2 ± 6.1	34.3 ± 10.4
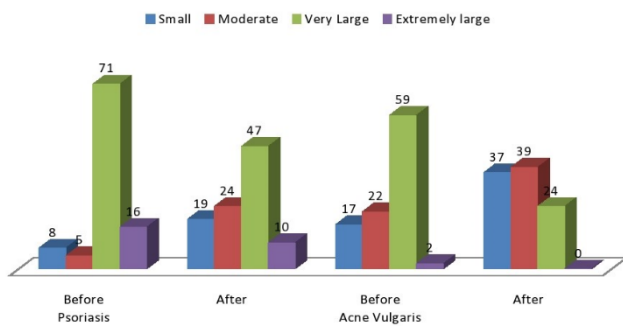
Fig. 1:

promptly intervened.[5] There are literatures which portray the emotional impact created by AV almost matches that created by epilepsy or asthma affected individuals.[6]

The use of benzoyl peroxide combined with topical antibiotics has effectively reduced the lesion severity and this is found to be concordant with four randomized controlled trials (RCTs) reviewed in a meta-analysis by Sarah P et. al., (2008)[7] although one RCT failed to reveal conclusive result. In conjunction with our study four RCTs gave positive results for topical treatment with clindamycin while few suggested that the clinical improvement is aligned with reducing pustules and not the papules. Similarly six RCTs turned out to be correlating with positive results fetched by topical erythromycin against one RCT that couldn't appreciate any difference between the above drug and placebo. The treatment of AV with topical retinoids has found to have reduced the number of both inflammatory and non-inflammatory lesions in addition to reduction of psychological effects. This evidence was observed to be homogeneous with the results divulged from four RCTs described by Sarah P et al.

Our study has observed a significant decline in DLQI score post-intervention and this furthers the results of Vilar GN et. al., (2015) that illustrated that persons with the AV has poorer self-esteem and quality of life than those without such lesions.[8] Our results has been supported by Chilicka K et. al., (2017) that showed convincing improvement in quality of life of AV patients following cosmetological treatment.[9]

Psoriasis, a chronic disfiguring disease on the other hand is known to lower one's quality of life equivalent to diseases like diabetes, depression or coronary artery disease. Furthermore, this results in a vicious cycle hampering the effect of treatment owing to the stigma created by it. Among our study participants, 88% of those with psoriasis had very large to extremely large impact on quality of life and this quantity almost matched that (94%) derived from Liluashvili et. al., (2020).[10] There are more evidences that procreate the impact of treatment in containing the psoriasis and facilitating their life's quality in terms of improved PASI and DLQI score.[11]

Moreover, the lesion's predominance in exposed areas compounded with its stage of onset (adolescence) and a relative stretch in its duration, deepens the negativity in social and psychological context. Therefore it will be a wise

decision to evaluate DLQI in all new/patients with recent onset (less than a month or two) of illness. Furthermore, appropriate and prompt therapy has to be initiated right from the milder grade of the disease had there been a negative impact deducted on assessment the QOL, which when properly implemented aids in strengthening of the doctor-patient relationship in addition to the betterment of patient adherence to therapy. Ultimately, all of these efforts will channelize the realization of faster healing and better control of the disease.

6. Source of Funding

None.

7. Conflict of Interest

None.

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