Clinical Aspects of Patients with Acne Vulgaris in Basrah city

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Abstract---Acne vulgaris is chronic inflammatory disease of pilosebaceous unit. It is a common problem affecting significant proportion of young people. The study aim to find out any association between the clinical aspects of disease and the socio-demographic characteristics of the studied sample.In the present study, patients (12-29year age) showing acne vulgaris (n=150 content 96 females and 54 males)was enrolled. They were assessed by direct interview and examination for their acne, scarring and any hyper androgenic evidence, according to Allen and smith grading system.Premenstrual flare (40.6%) was notice and had association with the grading (P=0.001).Sweating and hot weather were observed in 68.0% of cases. Stress and high fatty food intake were 64.0% and 52%, respectively. Digging or squeezing habits was significantly associated with the grading of acne (P=0.012 and P=0.004 respectively). Greasy skin showed maximum occurance(69.3%) of acne. Scars (pitting hyper pigmented scars) were noticed in 34% patients. The most common effect of acne and scarring on the psyche of patients was a mild psychological disturbance or mild dysmorphophobia (38%). High fatty diets intake and digging or squeezing habits can be appeared as a risk factors for the severity of acne. Although clinically the mild form of acne was commonly reported, it was associated with significant physical scars and psychological discomfort.

Keywords---Clinical study, Acne vulgaris, Basrah

1. Introduction

Acne vulgaris is a major health problem affecting all age groups of both malesand females, generally considered to bea nuisance and can cause misery and disability[1]. Acne vulgaris is a disorder of the pilosebaceous apparatus characterized by comedones, papules, pustules, cysts and scars[2]. It represents the most chronic skin condition seen by dermatologist[3]. There are aspects of this disease that contribute many to its non-dermatological effects including: anatomical distribution of lesions misperceptions regarding etiology, and social pressures[4].

Acne vulgaris is an extremely common condition affecting 91% of males and 79% of females adolescent, and 3% of males and 12% of females adults[5,6]. In Iraq, 43.5% of medical college students were found to have definite acne vulgaris[7]. In US population acne affects more than 85% of teenagers and results in more than two million visits to the doctor per year for patients 15-19years of age[8]. In UK, about 3.5 million consultations to between general practitioners occur annually[9,10]. The importance and morbidity of acne should not be underestimated, because its disfiguring can have

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important psychological consequences for affected individuals including decreased self–esteem, social embarrassment, social withdrawal, depression and even unemployment[10,11]. Comparison with other chronic illnesses have shown that acne patients have levels of social, psychological and emotional disabilitythat are similar to those reported by patients with more serious diseases such as asthma, epilepsy diabetes or arthritis[12].

Acne patients report greater levels ofanxiety and depression than other medical conditions, including cancer patients and other dermatology patients[13]. In one study 6% of acne patients reported active suicidal ideation[14]. Depression, anxiety and overall psychiatric co-morbidity havebeen found to improve when acne is treated[1]. Importance of the study: Acne is the most frequent reason for seeing a dermatologist. The aim of the present study is to explore the different clinical aspects of acne vulgaris. Also, the association between the clinical aspects of disease and the socio-demographic characteristics was evaluated.

2. Material and method

Study design

After taking the ethical permission from the Basrah Health Office and Basrah General Hospital.Oral consent was taken from every enrolled individual.A cross sectional epidemiological study was carried out on the non-probability convenient patients(n=150) diagnosed by consultant dermatologist to have acne vulgaris. The ages were from 12years and above. Any case refuses compartment was excluded from the study, in addition any person who was free from facial acne, but said that they did have acne elsewhere, also were excluded.

Experimental parameter

Enrolled individuals were interviewed personally. The history includes age, sex, address, employment, skin type (whether dry, normal or greasy), onset of acne (sudden or gradual), its duration, mode, aggravating and relieving factors noticed by the affected individual, squeezing or digging habit and relieving factors.Also, it includes menstrual history (regularity, premenstrual or menstrual flare), family history of acne, presence of other dermatological diseases and psychological effect of acne and scar. Type and duration of treatment used previously by individuals and new treatment.The examination of the face, chest, back and other parts in the daylight was done.The description of the grading scale is depicted in the Table 1.

Table 1: Grading scale for overall severity of acne vulgaris [29]

Degree	Description
Mild	About one fourth or less of the facial area is involved, with comedones and papules.
Moderate	More than one fourth to half of the facial area is involved, with comedones and few papules.
Severe	More than half to three fourth of the facial area is involved, with comedons and numerous papules.

Very severe	Nearly all of facial area is involved, with highly inflammatorylesions. Large prominent pustules are usually visible. Other types of acne lesions such as sinuses and cysts may be present.

Statistical analysis

Statistical analysis wasdone by using computer Epi-info (version 6) software. Descriptive analysis (frequency, mean and standard deviation) and analytical statistic(chi square, p value less than 0.05 considered significant) was performed.

3.   Results

The total number of subjects included in this study was 150 patients with acne vulgaris, their age ranged from 12 to 36 years (19.2±4.0). Around 54(36%) of cases were males and 96 (64%) of cases were female. The male to female ratio was found to be 1:1.7 (Tabe 2).

Table2: Distribution of study sample according to age and sex(N=150).

Age (years)	Male	Female	Total
13-16	12(22.2%)	42(43.7%)	54(36.0%)
17-20	21(38.8%)	29(30.2%)	50(33.3%)
21-24	15(27.7%)	14(14.5%)	29(19.3%)
25-28	5(9.2%)	07(7.2%)	12(8.0%)
≥29	1(1.8%)	04(4.1%)	05(3.3%)
Total	54(100%)	96(100%)	150(100%)

p=0.15

The occurrence of the acne vulgaris in males wasobserved around the 14 years age (13.1%) then after he occurrence rate was found to be decreased. Similar, occurrence pattern was observed in the female also.Itwas about 28.1% (Figure 1).

Figure 1: Distribution of study sample according to age of onset and gender (n=150)
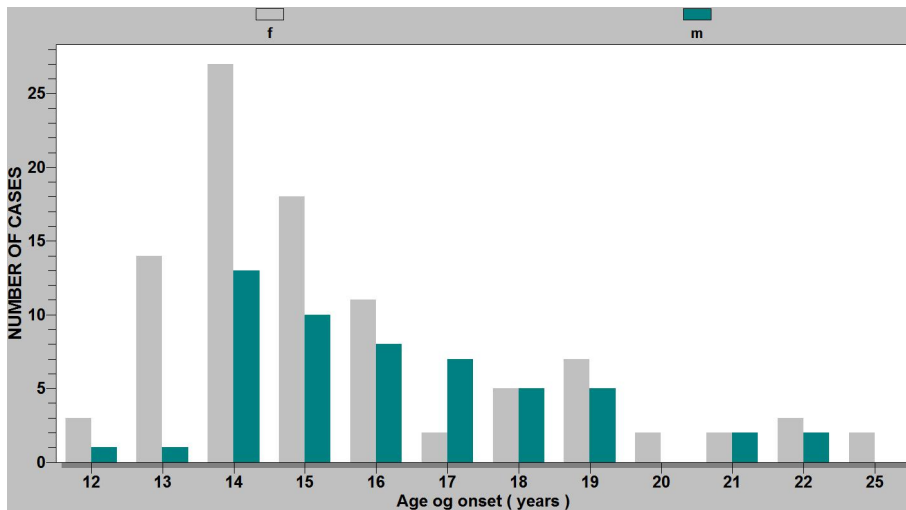
Severity of acne vulgaris was calculated according to Allen and Smith grading system. It was found that about 62(41.3%), 55(36.7%), 21(14.0%) and 12(8.0%) individuals showed mild, moderate, severe and very severe acne vulgaris.The menstrual cycle was regular in the majority of cases (68.8%), while irregular menses were observed in 31.2% cases. About 17.7% female showed premenstrual flare. Fourteen pregnant women with acne vulgaris were included in the present study. About 78.6% (11) cases reported thatthe onset of acne was firstly during pregnancy. While, 21.4% (3 cases) individuals showed improved and the lesions wane during pregnancy. The drug history o the enrolled patients was depicted in the Table 3.

Table 3: Distribution of study sample according to treatment history(N=150)

Drug history(Total%)	Male(%)	Female(%)
No treatment[65(43.3%)]	25(47.2%)	40(41.7%)
Herbal creams[25(16.6%)]	03(5.7%)	22(22.9%)
Topical RetinA[24(16%)]	12(22.6%)	12(12.5%)
Topical Benzoyl peroxide[17(11.3%)]	4(7.5%)	13(13.5%)
Topical steroid[10(6.6%)]	6(11.3%)	04(4.2%)
Systemic treatment[08(5.3%)]	3(5.7%)	05(5.2%)

The face was the most common site of acne lesions. About 136 (90.7%) patients were showed lesion on the face. It was (90.7%) of cases, followed by chest and back were involved in (87.7%) of cases, while shoulder and upper arms were present in (20.7%) of cases (Table 4).

Table 4: Distribution of study sample according to occurancesite, skin type acne and scar lesion (N=150)

Parameter	Grade	Frequency(%)

Site of lesion	Face	136(90.7%)
	Chest and back	73(87.7%)
	Shoulder and upper arms	31(20.7%)
Type of acne lesions	Open comedones	48(56.0%)
	Closed comedones	122(81.3%)
	Papules	121(80.7%)
	Pustules	79(52.7%)
	Nodulocystic	22(14.7%)
Type of scar lesion	Flat	22(43.1%)
	Hypertrophic	02(03.9%)
	Pitting	27(52.9%)
Type of skin	Greasy	104(69.3%)
	Dry	37(24.7%)
	Normal	09(6.0%)

The 38% of acne lesion sufferers have demonstrate mild psychological discomfort (mild anxiety and depression) from their acne lesion, moderate psychological disturbance was reported in 33.3%. While, social withdrawal or sever dysmorphophobia was reported in 8.0% of cases.Aggravating factors, relieving factors, topical treatment and systemic treatment are depicted in the Table 5.

Table 5.Aggravating factors, relieving factors, topical and systemictreatment of enrolled patients

Parameter	**Grade**	**Frequency(%)**
Aggravating factors	Fatty food	78(52.0%)
	Chocolate	35(23.3%)
	Spicy food	25(16.7%)

	Sweet	20(13.3%)
	Sweating	102(68.0%)
	Sun exposure	85(56.7%)
	Stress	96(64.0%)
	Hair epilating	87(58.0%)
	Cosmetics	35(23.3%)
Relieving factors	Change environment	88(58.7%)
	Change food	75(50.0%)
	Remove stress	104(69.3%)
	Treatment	48(32.0%)
Topical treatment	Topical Retinoid	74(56.0%)
	Topical Benzoyl Peroxide	50(26.6%)
	Clindamycin lotion	26(17.3%)
Systemic treatment	Doxycycline caps.	58(48.3%)
	Erythtromycin caps.	36(30.0%)
	Azithromycin tab.	10(26.6%)
	Isotretinoin	16(13.3%)

There is significant association between severity of acne lesions and age group (p=0.000), in which majority of mild cases were observed in age group 13-16year, while majority of moderate cases were seen in age group 17-20year and severe cases were seen more in age group 21-24year. So severity advanced with age. Severity of acne lesions was found to be associated with course of the disease(p=0.009); premenstrual flare (p=0.004); digging and squeezing habit (p=0.004); fatty food intake (p=0.012); and psychological effect on patients (P=0.000) (Table 6).

Table 6: Distribution of study sample according to variables in association with grading of acne lesions(N=150)

Variables		Grading				P value
		Mild (N=62)	Modera te (N=55)	Sever e (N=21)	V. severe (N=12)	
Age (years)	13-16	34	14	3	0	0.0 00
	17-20	15	28	6	4	
	21-24	8	10	7	4	
	25-28	2	3	4	3	
	$\geq$29	3	0	0	1	
Course of disease	First	17	4	3	0	0.0 09
	Recurrent	45	51	18	12	
Digging and squeezing		23	36	17	19	0.0 04
Fatty food		23	34	15	6	0.0 12
Effect on psyche	No effect	25	6	0	0	0.0 00
	Mild discomfort	29	23	4	1	
	Moderate effect	7	25	13	5	
	Social withdrawal	1	1	4	6	
Premenstrual flare among female cases.		Mild (n=40)	Modera te (n=40)	Sever e (n=11)	V. severe (n=5)	0.0 01
		5	5	3	4	

4.   Discussion

Acne vulgaris is a very common condition among young people that might be associated with scarring.During summer in Basrah the weather is hot and humid. Under such environment, the Corynebacter acne easily colonize the ductal hyperplasia induced by sweating and hot weather. In addition, chronic stress may lead to increase adrenal androgen secretion and serum cortisol level and these may worse acne lesions[15,16]. The prevalence of the disease in more in male than females and 13-16 years of age[17,18] i.e. the puberty age[8]. The results are accordance with these reports. The same age significant (p=0.0001)association was observed in the age and grading of acne lesions. The severity of disease gets advanced with age.In the present study, about 84% cases were reported a recurrent attacks of disease with chronic skin condition. The course of disease and grading of acne showed (p=0.009) significant association. The study is accordance with previous report[3].The androgen effects on sebaceous glands activity because chronic and persistent abnormal high level of androgen production.This leads to the abnormally high level of sebum secretion and severe form of acne[16,19,20].

Squeezing and digging will lead to mechanical irritation to the S.G, bacterial overgrowth especially P. acnes due to contamination of the lesions and scar formations[21]. It has significant association with severity of acne lesions (P=0.004). Some authors[22] reported about the premenstrual flare was 63% and has significant association with severity of acne lesions. Our results showed p=0014 association and they are accordance with the previous reports.The significant changes in the size of follicular duct occur during the menstrual cycle, and sebaceous duct orifice blockage are often observed during the premenstrual period. Similar studies were reported from other counties[23] and Iraq[24]. This study reported the females (46.19%) were more prone to have this diease than male[24].The familial factors mayinvolved in individual susceptibility to develop acne and modified by environmental factors.

Several studies have shown that acne greatly damage the psyche of patents. Many of acne patients experience shame, embarrassment, anxiety, depression and suicidal ideation[14]. The present study showed that 79.3% of patients had psychological discomfort and it was associated (p=0.000) with the grading of acne. These finding are similarly reported by others[1,13,14].

The influence of diet on acne has not been fully established and remain a debatable issue. However, recently several studies have suggested that dietary factors such as high glycemic load or dairy intake play a role in the pathogenesis of acne[31]. In the present study, 52.6% of acne patients believed that consumption of certain food exacerbate acne. Interestingly, we found that eating high fatty diet was significantly (p=0.012)associated with grading of acne. This finding was similar to previous study[25]. The current role of fatty diet in the pathogenesis of acne vulgaris is not well established. However, many authors agreed that eating a high fatty diet will increase concentration of triglycerides in the body and sebum, the excess triglycerides will increase free fatty acids production by the effect of hydrolyzing enzymes of P. acne and these acids are directly involved in pathogenesis of acne[14].The present study is in accordance with the previous reports[26].Greasy skin was considered as a risk factor for developing acne lesions duo to excess sebum production[27]. In the present study about 69.3% patients have greasy skin. The hypertrophic and keloid types of scars associated with severe forms of acne lesions and occur in specific skin types and need more immunity response[11].The site of the acne was also very specific which is accordance with previous report[27].All these parameters was well explain in Allen and Smith grading system[19,28,29].Persistent post inflammatory hyperpigmentation is commonly found in dark pigmented skin in Iraqi population[30]. Previous study showed that the herbal remedies were best treatment for acne[31,32].

5. Conclusions

Acne vulgaris was more frequently appeared earlier in females and its severity was advanced with the age. Family history, high fatty food intake and digging or squeezing habits can be considered as a risk factors for the severity of acne. Herbal remedies were commonest treatments used by patients before presentation especially in females. Acne vulgaris is a chronic disease characterized by recurrent attacks and long term morbidity.

Ethical Issues: The protocol was approved by the Iraqi board for medical specializations.

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