Valeology: International Journal of Medical Anthropology and Bioethics
(ISSN 2995-4924) VOLUME 02 ISSUE 12, 2024

HEALTH OUTCOMES OF ACNE ON PREGNANCY AND ASSESSMENT OF PATIENTS' QUALITY OF LIFE

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Abstract:

A descriptive and cross-sectional study was conducted on 140 patients with clinically diagnosed acne from pregnant women in Iraq in several different hospitals in Iraq from March 2023 to the same month. In the period of 2024, with the aim of identifying the risk factors and comorbidities associated with this skin disease.

The study evaluated the risk factors and comorbidities associated with grade I and II acne, as well as the time of its onset, as determined by the patient or specialist. The following variables were analyzed:

- Sociodemographic: age, gender, education, and marital status.
- Psychosomatic disorders: stress, emotional disorders, depression, anxiety, etc.
- Genetic and hormonal: family history of acne, tall people, fair skin, previous pregnancies, and oral contraceptives.

The statistical analysis program IBM SPSS software was used to design the study, and a questionnaire was distributed to pregnant patients to evaluate their quality of life. The results obtained from this study revealed the distribution of patients into two distinct groups (the first group

of patients 100 Mean sd 30.66±3.88) (control 29.68±4.22) and sleep hours to patients 7.3±1.2 and control 6.88±1.09.

The categorization of severity (mild 28, moderate 60, severe 12) was conducted, and the Clinical Assessment of Women Patients according to Scale (ECLA) was utilised. The following results were obtained (patients 2.55+0.7, control 0.84+0.22). Furthermore, a statistically significant positive relationship was identified between the group of pregnant women patients and those with acne, as the levels of anxiety, fear, and depression in the group of patients were high.

We conclude from this study that facial acne has a significant psychosocial impact on pregnant patients compared to the control group, as it can cause negative effects on self-image, as well as deterioration of social relationships. In patients with this disease, it was found that poor quality of life was associated with the severity of anxiety symptoms.

Keywords: ECLA, pregnancy, severity, facial acne, significant psychosocial.

Introduction

Introduction

Acne is a skin condition that results from the blockage of oily and dead skin cells in the sebaceous glands located below the pores, resulting in the appearance of small bumps. Inflammatory acne is acne caused by the blockage of the skin above the sebaceous layer [1] and, along with bacterial infection, extends to the outer layers of the skin, causing acne with yellow heads. Pustular acne, whiteheads, blackheads, or other types of acne are not painful when squeezed or pressed based on the immune system's response, as inflammatory acne caused by a bacterial infection deep in the skin may cause lumpiness and this is what requires treatment by a doctor. [2,3,4]

Many women experience redness or inflammation associated with acne during pregnancy instead of a "pregnancy glow." Even some unexpected pimples can cause additional stress when you are already feeling anxious about the physical changes that occur during pregnancy. [5,6]

More than 40% of pregnant women develop acne, and this is more common in women who had acne before pregnancy, but it can occur in any pregnant patient.

Acne occurs when the skin pores become clogged with bacteria, oils, or dead skin cells. Age, genetics, lifestyle, and medical conditions (such as pregnancy) can affect the amount of these skin irritants your body produces. During the first two trimesters of pregnancy, women produce more reproductive hormones called androgens, especially progesterone [7,8,9]. When levels of these hormones increase, so does the amount of oil the skin produces [10].

Acne during pregnancy can be caused by a combination of hormonal factors and skin changes. Some of the common causes include:

Hormonal fluctuations: During pregnancy, changes in hormone levels, such as increased production of estrogen and progesterone, can stimulate the skin's oil glands, leading to clogged pores and an increase in sebum production [11].

Increased skin sensitivity: The skin can become more sensitive during pregnancy, which can make it more susceptible to clogged pores and inflammation associated with acne. [12,13]

Genetic factors: Genetic predisposition can also play a role in the occurrence of acne during pregnancy [14].

The appearance of pimples during pregnancy is a very common phenomenon. In fact, many pregnant women experience the appearance of these annoying "blemishes" that often lead to real acne [15].

In a certain sense, pimples during pregnancy are considered a normal manifestation that occurs due to the changes that occur in the pregnant woman's body during this particular period.

However, treating pimples during pregnancy, especially when the manifestation is particularly widespread and serious, could be difficult. This is because, when prescribing any therapy or treatment, it is essential to consider the relationship between the potential risks for the unborn child and the expected benefits for the mother [16,17].

Material and method

Demographic information and data were collected from several different hospitals in Iraq over a period of one year, from March 2023 to March 2024. A cross-sectional study was established in Iraq for pregnant women suffering from acne. This study aimed to investigate the effect of acne on pregnant patients. In this study, 140 pregnant patients were collected, and the patients were distributed into two groups. The first group included 100 pregnant women with acne, and the second group included pregnant women without acne. In this study, it was designed in light of evaluating the quality of life of patients according to the DLQI score.

Developed in the 80s and originally published in 1992 by Ware and Sherbourne [2], SF36 belongs to the series of short questionnaires on the state of health of the patient, characterized by brevity (it takes on average no more than 10 minutes to complete) and precision (the instrument is valid and reproducible). [1] The SF-36 allows us to capture the impact of a disease on various dimensions of quality of life. Evaluating the state of health, in general, is a tool that is suitable for studies in the general population as well as for cross-sectional or longitudinal investigations on specific pathologies and treatments.

Results

Table 1- General demographic results of patient women in Iraq

Variable	Patients, N=100	Control, N=40
Age		
Mean sd	30.66±3.88	29.68±4.22
BMI frequency (p %)		
26 to 30	70 (70%)	19 (47.5)
>30	30 (30%)	21 (52.5)
Employment status, frequency (p %)		
Student	10 (10)	5 (12.5)
Service	30 (30)	7 (17.5)
holder	20 (20)	6 (15)
Housewife	40 (40)	22 (55)
Socioeconomic status. frequency		
400 to 700	30	20
710 to 1000	50	10
>1000	30	10
Sleep hours		
Mean ±sd	7.3±1.2	6.88±1.09
Family history of acne		

Present	56 (56%)	10 (25)
Not	44 (44%)	30 (75)
Duration (month)		
Mean sd	4.4±0.943	----

Table 2- Results related to the medical properties to patients

Variable	**Patients, N=100**	**Control, N=40**
Progesterone		
Mean sd	55.67±10.9	20.6±3.22
Causes of acne		
Hormonal Changes	60	----
Polycystic Ovary Syndrome (PCOS)	5	----
Previous Acne History	20	----
Lifestyle Factors	5	----
Diet and Weight	10	----
Acne affected area		
Face	77	----
Trunk	10	----
Face and trunk	13	----
Age of acne onset		
Mean sd	24.3±2.2	
Categorization of severity		
Mild	28	----
Moderate	60	----
Severe	12	----

Table 3- Clinical Assessment of Women Patients according to Scale (ECLA)

Variable	**Patients**	**Control**	**P value**
Mean	2.55	0.84	<0.001
Sd	0.74	0.22	

Table 4- Health outcomes for patients according to a questionnaire distributed to determine the quality of life (DLQI score)

Variable	**Patients**	**control**	**P value**
0–1	5	20	0.56
2–5	6	15	0.067
6–10	40	5	<0.001
11–20	30	0	<0.001
21–30	19	0	<0.001

Table 5- Assessment of the outcomes of patients according to the Correlation for acne and the presence of psychiatric comorbidities.

	Acne	Depression	Anxiety	Stress
Acne	–	0.93	0.881**	0.22
Depression	0.93	–	0.756*	0.344*
Anxiety	0.881**	0.756*	–	0.712*
Stress	0.22	0.344*	0.712*	–

Table 6- Logistic regression to assess the risk factor for patients in this study

Variable	Cs	Oi	P value
Depression	2.2	1.8-4.4	0.0345
Face	1.84	1.233-3.82	0.083
Categorization of severity (III grade)	3.3	2.335-5.23	<0.001
Hormonal Changes	1.75	1.55-2.93	0.083
BMI>30	1.64	1.1-2.11	0.982

Discussion

Skin diseases that affect aesthetics cause low self-esteem, depression, anxiety, shame, and social avoidance in those who suffer from them. These include acne vulgaris, which is not only a skin condition but also an immunological one, with a genetic predisposition and multifactorial triggers. It is accompanied by other comorbidities, including vitiligo, endocrine-metabolic diseases, seborrheic skin conditions, atopic dermatitis, and other dermatoses that can further affect the quality of life and survival of patients. Likewise, the influences of multiple factors can trigger or aggravate its development [18]. It is very common for acne or facial pimples to appear during pregnancy, as more than half of pregnant women suffer from this problem. And in some cases, facial pimples in pregnant women are severe and require therapeutic intervention, as the pregnancy period is by nature very sensitive, and a pregnant woman should not receive any drug treatments during this period that can cause harm to the fetus. The main cause of acne in pregnant women is the increase in the levels of a number of hormones in the body during the first three months of pregnancy, as this causes an increase in the production of natural oils from the skin. [19,20]

Among the hormones whose increase has been linked to the occurrence of acne in pregnant women are progesterone and androgenic hormones, including testosterone and androstenedione. [21]

The chance of developing acne in pregnant women usually increases if the woman has previously suffered from acne in previous stages of her life or if she suffered from it at the beginning of the menstrual cycle in particular. [22]

Acne in pregnant women usually appears in the first months, as the increase in hormone levels usually occurs at its highest during the first trimester of pregnancy and then begins to decrease in the later stages of pregnancy, which helps reduce the appearance of acne in pregnant women during these stages. However, this does not always happen, as acne in pregnant women may continue to appear throughout pregnancy and even after childbirth as well. [23]

Both teenage and adult acne can lead to a loss of self-esteem and sometimes even an inferiority complex [24].

Studies show that people with acne are more likely to suffer from depression, anxiety, and social phobia than those without acne.1-7 Other studies show that anxiety and acne often go hand in hand.2-4,7-12 Research also suggests that acne has a greater psychological impact on women [25].

Acne is defined as a chronic inflammatory disease characterised by the inflammation of the pilosebaceous follicles and increased secretion of fat. Follicle obstruction influences the formation of inflammatory lesions, such as comedones, papules, pustules, cysts, and, on occasion, nodules or scars. Increased sebum production by androgens, altered keratinization, colonization by Cutibacterium acnes, and activation of innate immunity, among other factors, act in unison to produce inflammation and. Normally, these lesions tend to be located in areas of the body where the sebaceous glands are most numerous, with the exception of the scalp; therefore, they appear on the face, upper chest, and back [22]. The disease produces alterations in the patient's external appearance, which deteriorates body image and self-esteem. It affects interpersonal, work, and school relationships and even causes psychological and social deterioration, which can lead to depression and other mental and/or psychological disorders. For these reasons, it can incapacitate the patient in his or her social development and cause, in addition to physical disorders, alterations in the proper development of the personality, particularly in young people. It also influences the development of human relationships or certain professions, where the appearance of part or all of the body surface and the affective sphere are important; therefore, it is sometimes necessary to visit different doctors in search of improving the lesions, which causes even more affectation and social isolation. [24]

It is important to point out that the cause of acne is unknown. Factors of genetic, endocrine (it has been shown that acne-prone skin is resistant to insulin), dietary, bacterial, mechanical, chemical, climatic, hormonal, and emotional order have been linked to explain it. In this regard, the dietary factor has been much discussed since, in general, food does not play an important role, although occasionally, it can aggravate the lesions. There is often a family predisposition as a risk factor (especially if both parents had this condition) to suffer from severe forms of acne, resistant to different treatments [25]. In this order of ideas classifies the intensity of acne as follows

- Mild or grade I: The main traumas and there are usually less than five inflammatory lesions on one half of the face. Papules and pustules may appear, but they are small and few in number, generally less than 10.
- Moderate or grade II: It reflects between 6 and 20 inflammatory lesions on one half of the face; there is a greater number of papules, pustules, between 10-40. The trunk is also usually affected.
- Severe or grade III: There are between 21 and 50 inflammatory lesions on one half of the face. There are numerous papules and pustules, 40 to 100 of them, usually with deep nodular lesions. The affected areas extend, in addition to the face, to the trunk and back.
- Very severe or grade IV: There are more than 50 inflammatory lesions on one half of the face. Acne nodules (characterized by large, painful nodular lesions, as well as pustular lesions, along with several small papules)

As shown in the table, emotional disturbances, especially anxiety, predominated, oily skin conditions, and toxic habits were also common. Regarding comorbidities, patients presented with some endocrine and metabolic disorders, including diabetes mellitus, overweight, hypothyroidism, hyperthyroidism, and hypercholesterolemia, with one affected, respectively. In this series, 56 (56%) patients had a family history of the disease, while the remaining 44 (44%) patients did not. Similarly, grade II acne predominated, with 60 patients affected, while 12 showed grade I acne.

Conclusion

It is essential that general practitioners, especially dermatologists, are aware of the fact that pregnant women - because they know the skin as the largest organ of the human body - know that acne, which is common in pregnant women, is a disease that affects body image. It can cause negative psychological consequences. For this reason, there are still disagreements, especially among dermatologists, about defining the minimum criteria for diagnosing this disease. The above is related to the presence of demographic, genetic, hormonal, nutritional, and personal factors, which influence the appearance and severity of acne. Puberty is one of the known triggers for this condition, and it is the first sign of maturity during this period. Although there are studies that indicate the opposite, it is considered that acne is more common in women, where other demographic and personal factors, such as urban environment, use of cosmetics, being overweight, and obesity, are also considered risk factors for the development of this condition. Regarding the genetic and hormonal components, a family history of the disease is important as a predisposing condition. Oily and light skin and pregnancy (have also been described as risk factors.

References

1. Acne vulgaris: diagnosis and treatment. Oge' LK, Broussard A, Marshall MD. https://pubmed.ncbi.nlm.nih.gov/31613567/ Am Fam Physician. 2019; 100:475–484. [PubMed] [Google Scholar]
2. Dermatology: how to manage acne vulgaris. Leung AK, Barankin B, Lam JM, Leong KF, Hon KL. Drugs Context. 2021; 10:2021–2028. Doi: 10.7573/dic.2021-8-6. [DOI] [PMC free article] [PubMed] [Google Scholar]
3. Acne, skin microbiome, and antibiotic treatment. Xu H, Li H. Am J Clin Dermatol. 2019; 20:335–344. Doi: 10.1007/s40257-018-00417-3. [DOI] [PMC free article] [PubMed] [Google Scholar]
4. Endocrine disorders and hormonal therapy for adolescent acne. Nguyen HL, Tollefson MM. Curr Opin Pediatr. 2017; 29:455–465. Doi: 10.1097/MOP.0000000000000515. [DOI] [PubMed] [Google Scholar]
5. Androgens and acne: perspectives on clascoterone, the first topical androgen receptor antagonist. Kircik LH. Expert Opin Pharmacother. 2021; 22:1801–1806. Doi: 10.1080/14656566.2021.1918100. [DOI] [PubMed] [Google Scholar]
6. Acne and diet: facts and controversies. Rezaković S, Bukvić Mokos Z, Basta-Juzbašić A. https://pubmed.ncbi.nlm.nih.gov/23069302/ Acta Dermatovenerol Croat. 2012; 20:170–174. [PubMed] [Google Scholar]
7. Hormonal and metabolic aspects of acne vulgaris in women with polycystic ovary syndrome. Franik G, Bizoń A, Włoch S, Kowalczyk K, Biernacka-Bartnik A, Madej P. Eur Rev Med Pharmacol Sci. 2018;22:4411–4418. Doi: 10.26355/eurrev_201807_15491. [DOI] [PubMed] [Google Scholar]
8. Ceviz N., Ozkan B., Eren S., Ors R., Olguntürk R. A case of isotretinoin embryopathy with bilateral anotia and Taussig-Bing malformation. Turk J Pediatr. 2000;42 (3):239–241. [PubMed] [Google Scholar]
9. Chien A.L., Qi J., Rainer B., Sachs D.L., Helfrich Y.R. Treatment of acne in pregnancy. J Am Board Fam Pract. 2016;29 (2):254–262. Doi: 10.3122/jabfm.2016.02.150165. [DOI] [PubMed] [Google Scholar]

10. Collier C.N., Harper J.C., Cantrell W.C., Wang W., Foster K.W., Elewski B.E. The prevalence of acne in adults 20 years and older. J Am Acad Dermatol. 2008;58 (1):56–59. Doi: 10.1016/j.jaad.2007.06.045. [DOI] [PubMed] [Google Scholar]
11. Czeizel A.E., Rockenbauer M., Sørensen H.T., Olsen J. A population-based case-control teratologic study of oral erythromycin treatment during pregnancy. Reprod Toxicol. 1999;13 (6):531–536. Doi: 10.1016/s0890-6238 (99)00046-5. [DOI] [PubMed] [Google Scholar]
12. Czeizel A.E., Rockenbauer M., Sørensen H.T., Olsen J. Augmentin treatment during pregnancy and the prevalence of congenital abnormalities: A population-based case-control teratologic study. Eur J Obstet Gynecol Reprod Biol. 2001;97 (2):188–192. Doi: 10.1016/s0301-2115 (00)00545-5. [DOI] [PubMed] [Google Scholar]
13. Czeizel A.E., Rockenbauer M., Sørensen H.T., Olsen J. Use of cephalosporins during pregnancy and in the presence of congenital abnormalities: A population-based, case-control study. Am J Obstet Gynecol. 2001;184 (6):1289–1296. Doi: 10.1067/mob.2001.113905. [DOI] [PubMed] [Google Scholar]
14. Dréno B., Blouin E., Moyse D., Bodokh I., Knol A., Khammari A. Acne in pregnant women: A French survey. Acta Derm Venereol. 2014;94 (1):82–83. Doi: 10.2340/00015555-1594. [DOI] [PubMed] [Google Scholar]
15. Milstone E.B. Pseudomembranous colitis after topical application of clindamycin. Arch Dermatol. 1981;117 (3):154–155. [PubMed] [Google Scholar]
16. Murase J.E., Heller M.M., Butler D.C. Safety of dermatologic medications in pregnancy and lactation. J Am Acad Dermatol. 2014;70 (3): 401.e1–401.e14. Doi: 10.1016/j.jaad.2013.09.010. [DOI] [PubMed] [Google Scholar]
17. Pagliarello C., Di Pietro C., Tabolli S. A comprehensive health impact assessment and determinants of quality of life, health and psychological status in acne patients. G Ital Dermatol Venereol. 2015;150 (3):303–308. [PubMed] [Google Scholar]
18. Panchaud A., Csajka C., Merlob P., Schaefer C., Berlin M., De Santis M. Pregnancy outcome following exposure to topical retinoids: A multicenter prospective study. J Clin Pharmacol. 2012;52 (12):1844–1851. Doi: 10.1177/0091270011429566. [DOI] [PubMed] [Google Scholar]
19. Park-Wyllie L., Mazzotta P., Pastuszak A. Birth defects after maternal exposure to corticosteroids: Prospective cohort study and meta-analysis of epidemiological studies. Teratology. 2000;62 (6):385–392. Doi: 10.1002/1096-9926 (200012)62:6<385::AID-TERA5>3.0.CO;2-Z. [DOI] [PubMed] [Google Scholar]
20. Parry M.F. Pseudomembranous colitis caused by topical clindamycin phosphate. Arch Dermatol. 1986;122 (5):583. [PubMed] [Google Scholar]
21. Plewig G. Pyoderma faciale. A review and report of 20 additional cases: Is it rosacea? Arch Dermatol. 1992;128 (12):1611–1617. Doi: 10.1001/archderm.128.12.1611. [DOI] [PubMed] [Google Scholar]
22. Polachek H., Holcberg G., Sapir G., Tsadkin-Tamir M., Polacheck J., Katz M. Transfer of ciprofloxacin, ofloxacin and levofloxacin across the perfused human placenta in vitro. Eur J Obstet Gynecol Reprod Biol. 2005;122 (1):61–65. Doi: 10.1016/j.ejogrb.2004.11.031. [DOI] [PubMed] [Google Scholar]
23. Powell J.L., Bailey C.L., Coopland A.T., Otis C.N., Frank J.L., Meyer I. Nd: YAG laser excision of a giant gingival pyogenic granuloma of pregnancy. Lasers Surg Med. 1994;14

(2):178–183. Doi: 10.1002/1096-9101 (1994)14:2<178::aid-lsm1900140211>3.0.0.co;2-w. [DOI] [PubMed] [Google Scholar]

24. Pugashetti R., Shinkai K. Treatment of acne vulgaris in pregnant patients. Dermatol Ther. 2013;26 (4):302–311. Doi: 10.1111/dth.12077. [DOI] [PubMed] [Google Scholar]

25. Ramrakha S., Fergusson D.M., Horwood L.J., Dalgard F., Ambler A., Kokaua J. Cumulative mental health consequences of acne: 23-year follow-up in a general population birth cohort study. Br J Dermatol. 2016; 175:1079–1081. Doi: 10.1111/bjd.13786. [DOI] [PMC free article] [PubMed] [Google Scholar]