

Dermatological Changes and Diseases in Iraqi Pregnant Women

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Abstract

Background: Pregnancy, childbirth, and puerperium are associated with profound physiological endocrine upheavals. The physiological events of pregnancy and its resolution can also modify a number of concomitant dermatoses, and there are also some pathological skin conditions that are virtually pregnancy specific. **Objective:** This study was an attempt to find the most common dermatological problems that are faced by the Iraqi women during pregnancy. **Patients and Methods:** A convenient sample of 300 pregnant women was included in this cross-sectional study which was conducted in the consultation clinic of dermatology and the consultation clinic of obstetrics and gynecology of Al-Kadhymia Teaching Hospital between February 1, 2012, and the end of June 2012. Clinical diagnosis was based on history and clinical examination, and appropriate investigation including biopsy was done accordingly. **Results:** A total of 300 pregnant women with ages ranged from 14 to 44 years, with a mean age of 29 ± 15 years. Primi/multigravida ratio was 2:3 with gestational age between 2nd and 9th month. Various skin problems were seen among these cases, those with specific dermatosis account for 22.4% of the total, while those with nonspecific diseases constitute 77.6% of the cases. The major ones were infections and infestations (27.3%) followed by eczema and dermatitis (19.3%). Most common physiological skin changes were striae gravidarum which was seen in 78% of cases, followed by melasma in 49% of cases. **Conclusions:** The study showed that the most common skin changes and diseases during pregnancy include (1) pruritus gravidarum (more common started in primigravida and in the third trimester); (2) scabies (may be due to endemic of this disease) and superficial fungal infection; (3) striae gravidarum (more common in multigravida in the third trimester); followed by melasma (more common multigravida in the second trimester).

Keywords: Changes, dermatological, diseases, Iraqi, pregnant

INTRODUCTION

Skin disease is one of the most common human illnesses. It pervades all cultures, occurs at all ages, and affects between 30% and 70% of individuals, with even higher rates in at risk subpopulation.^[1] Collectively, skin conditions ranged from the second to eleventh leading cause of years lived with disability at the country level. At the global level, skin conditions were the fourth leading cause of neonatal disease burden. Disability-adjusted life year ranks when considering skin conditions collectively was the 18th cause.^[1] The prevalence during pregnancy was a case in every 130–300 pregnancy and was seen in 21.6%.^[2]

Pregnancy, childbirth, and puerperium are associated with profound physiological endocrine upheavals.^[3] Pregnancy is characterized by the advent of a new and unique endocrine organ (the placenta). Placental hormones are partly

responsible for the physiological adaptations that occur in pregnancy. The pituitary gland also enlarges and increases its output of adrenocortical trophic hormones, prolactin, and gonadotrophins. Circulating cortisol rises, caused mainly by a decrease in its rate of clearance combined with an increase in cortisol-binding globulin.^[4,5]

Most women notice a generalized increase in skin pigmentation during pregnancy, and the change is more marked in dark-haired than in fair-haired women. In approximately 70% of women,

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especially those of dark complexion, chloasma pigmentation develops during the second half of the pregnancy.^[6,7] Minor degrees of hypertrichosis are not uncommon. Hirsutism is usually accompanied by acne.^[8] Vascular “spiders” are very common in White women but said to be less so in Black women.^[9]

Cell-mediated immunity is depressed during normal pregnancy, which probably accounts for the increased frequency and severity of certain infections such as candidiasis. Condylomata acuminata also can be exacerbated, growing very rapidly and occasionally obstructing the birth canal.^[9,10] Candida, genital warts, and herpes simplex can be transmitted to the baby during childbirth;^[10] however, there are several skin changes that appear to be specifically related to pregnancy and puerperium, distinct from physiological events, and not caused by exacerbation of pre-existing conditions such as pruritus gravidarum, prurigo of pregnancy (PP), pruritic urticarial papules and plaques of pregnancy (PUPPP), herpes gestations, pruritic folliculitis of pregnancy, and linear IgM dermatosis of pregnancy.^[11-13] The most common specific dermatoses of pregnancy are:

1. PP (prurigo gestations): The incidence is approximately one in 300 pregnancies. It presents as pruritic papules primarily on the extensor aspects of the extremities.^[14,15]
2. Pruritus gravidarum and intrahepatic cholestasis of pregnancy (cholestasis of pregnancy, prurigo gravidarum): Pruritus gravidarum is a state of wide clinical variety, which may be an extension of a physiologic pruritic state. In its severe form, it presents as jaundice.^[16,17]
3. PUPPP: It is the most common dermatosis of pregnancy, with an incidence of one in 120–300 pregnancies.^[18-21]

PATIENTS AND METHODS

A convenient sample of 300 pregnant women with different gestational age were included in this cross-sectional study which was conducted in the consultation clinic of dermatology and the consultation clinic of obstetrics and gynecology of Al-Kadhymia teaching hospital in Baghdad between the February 1, 2012, and the end of June 2012. Clinical diagnosis was based on history and clinical examination, and appropriate investigations including skin biopsy was also done accordingly. Dermatoses of pregnancy in this study were divided into three categories: (1) specific dermatoses of pregnancy, (2) skin diseases affected by pregnancy, and (3) physiological skin changes.

Inclusion criteria

All pregnant women with a life baby were included in this study, all ages, and parity.

Exclusion criteria

The patients with intrauterine death, missed abortion, or incomplete abortion were excluded.

Statistical analysis

Descriptive statistical analysis was done using scientific calculator.

Ethical considerations

An official agreement document was obtained from the Ministry of Health and from Al-Kadhymia Teaching Hospital. The patient was approached in the waiting room of consultation clinic of dermatology and consultation clinic of obstetrics and gynecology. All of them were informed about the aim of the study, verbal consent was taken from them, and the privacy was taken into consideration.

RESULTS

The ages the participants ranged between 14 and 44 years with a mean age of 29 ± 15 years. 110 (36.6%) of them were primigravidas and 190 (63.3%) were multigravidas. Primi/multigravida ratio was 2:3. The gestational age was between 2nd and 9th month. 132 cases were in the second trimester (44%), 105 cases were in the third trimester (35%) and 67 cases were in the first trimester (21%) [Table 1].

Various skin problems were seen among these cases; those with specific dermatosis account for 67 (22.4%) of the total, while those with nonspecific diseases constitute the majority 233 (77.6%) of the cases [Table 2]. The different specific dermatoses which were found in this study are presented in Table 3; their incidence in relation to parity is shown in Table 4; their onset in relation to duration of pregnancy is shown in Table 5. 233 (77.6%) out of total 300 pregnant seen in this study have been presented with skin problems that are nonspecific to pregnancy [Tables 6-10];

Table 1: Distribution of studied sample according to the parity and trimester

Sample	n (%)
Primigravida	110 (36.6)
Multigravida	190 (63.3)
1 st trimester	63 (21)
2 nd trimester	132 (44)
3 rd trimester	105 (35)

Table 2: Distribution of the sample according to specific and nonspecific dermatological disease during pregnancy

Dermatological disease	n (%)	Age range (mean)
Specific disease	67 (22.4)	17-38 (25.6)
Nonspecific disease	233 (77.6)	14-44 (29)
Total	300 (100)	14-44 (29)

Table 3: Distribution of the study sample according to specific dermatoses of pregnancies

specific dermatoses	n (%)
Pruritus gravidarum	31 (10.3)
Prurigo of pregnancy	19 (6.3)
Pruritic urticarial papule and plaque of pregnancy	14 (4.6)
Herpes gestations	2 (0.6)
Pruritic folliculitis of pregnancy	1 (0.3)
Total	67 (22.3)

Table 4: Distribution of the study sample with specific dermatoses according to their parity

Parity	PG	PP	PUPPP	HG	PF	Total	Percentage
Primigravida	15	7	9	1	1	33	11
Multipara (all pregnancies affected)	6	8	3	-	-	17	5.6
Multipara (intermittent pregnancies affected)	10	4	2	1	-	17	5.6
Total	31	19	14	2	1	67	22.3

PG: Pruritus gravidarum, PP: Prurigo of pregnancy, PUPPP: Pruritic urticarial papule and plaque of pregnancy, HG: Herpes gestations, PF: Pruritic folliculitis of pregnancy

Table 5: Distribution of the study sample according to specific dermatoses

Trimesters	PG	PP	PUPPP	HG	PF	Total	Percentage
1 st trimester	6	4	1	-	-	11	3.6
2 nd trimester	8	10	5	1	1	25	8.3
3 rd trimester	17	5	8	1	-	31	10.3
Total	31	19	14	2	1	67	22.3

PG: Pruritus gravidarum, PP: Prurigo of pregnancy, PUPPP: Pruritic urticarial papule and plaque of pregnancy, HG: Herpes gestations, PF: Pruritic folliculitis of pregnancy

Table 6: Distribution of the study sample with nonspecific skin diseases during pregnancy

Diseases	n (percentage of 300)
Infection and infestation	82 (27.3)
Eczema and dermatitis	58 (19.3)
Acne vulgaris	15 (5)
Insect bite	11 (3.7)
Postinflammatory hyperpigmentation	11 (3.7)
Hyperkeratosis of the heel	10 (3.3)
Diffuse hair fall	9 (3)
Perniosis	7 (2.3)
Corn and callosity	4 (1.3)
Urticaria	4 (1.3)
Drug rash	3 (1)
Pityriasis rosea	3 (1)
Psoriasis	3 (1)
Xanthelasma	2 (0.7)
Erythema nodosum	2 (0.7)
Vitiligo	2 (0.7)
Milia	2 (0.7)
Erythema multiform	2 (0.7)
Lichen planus	1 (0.3)
Alopecia areata	1 (0.3)
Polymorphic light eruption	1 (0.3)
Total	233 (77.6)

of these, the major ones were infections and infestations (27.3%) followed by eczema and dermatitis (19.3%).

Discussion

In 1983, Holmes and Black created an important clarification by grouping most of the entities as late-onset PP, such as pruritic papular eruptions of pregnancy, Spangler dermatitis, toxemic rash of pregnancy, toxic erythema of pregnancy, and

PUPPP, into a unique entity called polymorphic eruption of pregnancy (PEP).^[22]

The incidence of PEP varies between 0.4% and 0.8% of pregnant women.^[22-25] PEP predominantly affects primiparous women (57.5%–70%), mainly in the third trimester of pregnancy (75%–83%).^[22,25-30] However, earlier or postpartum onsets are possible. However, in this study, the specific dermatoses of pregnancy seem to be a major dermatological problem during pregnancy as they accounted for 22.4% of the total patients. Moreover, in an old Iraqi study done in 1990 by Al-Edani (which was the only Iraqi study about this subject), the percentage of specific dermatoses of pregnancy was 18.5%.^[31]

Other studies such as Kumari and Jaisankar's study about dermatosis of pregnancy in Indian women showed that the specific dermatosis of pregnancy percentage constitutes 3.6% from the total cases.^[32]

In our study, the most common disease was pruritus gravidarum constituting 10.3% from the total cases, which was nearly similar to AL-Edani's study constituting 8%.^[31] In other study like Kumari's study, the pruritic urticarial papule and plaque was the most common problem found in 2.3%.^[32] And also, there were other study such as Holmes and Black, Roger *et al.*, and Vaughan Jones *et al.* that found cutaneous lesions being mainly urticarial papules and plaques.^[22,25-30]

Regarding the parity and the specific dermatoses of pregnancy, the most common type of skin diseases was prurigo gravidarum in both the primigravida and multigravida. While in Al-Edani's study, pruritic urticarial papule and plaque was common in the primigravida and prurigo gravidarum was common in multigravida cases.^[31]

Regarding dermatoses of pregnancy and trimester, most of the diseases started during the third trimester in this study, and it was 10.3% of cases started during the third trimester so was with other reported study.^[32]

Pruritic folliculitis, also called herpes gestationis of pregnancy, is a very rare eruption, with only 24 reported cases, which developed during the third trimester of pregnancy. It is characterized by papules and sterile follicular pustules on the trunk and sometimes the upper limbs.^[29] In this study, we have two cases (0.6%) which confirmed by biopsy. Regarding nonspecific dermatoses of pregnancy

Table 7: Distribution of the study sample according to infections and infestations in pregnant women

Disease	n	Percentage of 82 patients	Percentage of 300 patients
Scabies	25	30.5	8.3
Superficial fungal infections	21	25.6	7
Bacterial vaginosis	7	8.5	2.33
Viral wart	6	7.3	2
Herpes simplex	5	6.1	1.66
Molluscum contagiosum	5	6.1	1.66
Cutaneous leishmaniasis	4	4.9	1.3
Folliculitis, ecthyma, impetigo	4	4.9	1.3
Intertrigo	3	3.6	1
Paronychia	2	2.4	0.66
Total	82	100	27.33

Table 8: Distribution of the study sample according to fungal infection in pregnant women

Diseases	n	Percentage of 21 patients	Percentage of 300 patients
Candidal vaginitis	12	57.1	4
Pityriasis versicolor	3	14.2	1
Tinea corporis	2	9.5	0.66
Tinea cruris	2	9.5	0.66
Tinea unguium	1	4.7	0.33
Tinea pedis	1	4.7	0.33
Total	21	100	7

Table 9: Distribution of the study sample with eczema and dermatitis seen among pregnant women

Types	n (percentage of 300)
Hand eczema	18 (6)
Atopic dermatitis	11 (3.66)
Contact dermatitis	9 (3)
Seborrheic dermatitis	6 (2)
Pompholyx	4 (1.3)
Lichen simplex chronicus	4 (1.3)
Discoid eczema	3 (1)
Infective eczema	3 (1)
Total	58 (19.3)

which constitute 77.6%, infections and infestations were found to be a major problem (27.3%) followed by eczema and dermatitis (19.3%). In other studies such as Al-Edani's study, infections and infestations constitute 29.2% followed by eczema and dermatitis (19.6%),^[31] while Kumari found that the infections (candidal infection 2.8%) were the most common followed by the inflammatory diseases (acne vulgaris 2.4%).^[32] Scabies was the most common infestation (8.5%) in this work followed by fungal infection (candidiasis 4%) and these results simulate the results of Al-Edani's study, while in Kumari's study, it is found that the most common infection is candidal infection (21.3%).^[32] Hand eczema

was the most common inflammatory condition followed by atopic dermatitis and acne vulgaris, so was Al-Edani's study,^[31] while in Kumari's study, acne vulgaris was the most common finding.^[32]

Regarding physiological skin changes, hyperpigmentation is usually more localized, targeting the areola and/or nipples, which are the most commonly affected site (40%).^[33]

Linea alba that corresponds to an aponeurosis extending from the symphysis pubis to the xiphisternum often becomes hyperpigmented during pregnancy, most markedly below the umbilicus. It is referred to as linea nigra and found in 75% of pregnant females, Melasma, chloasma, or mask of pregnancy may affect up to 70% of pregnant women.^[33] Regarding physiological skin changes in our study, the major problem was found to be melasma. It was seen in different degrees and distributions which constitute 148 cases about 49.3%, and the mask shape was the most common type more than the butterfly shape; it was more common to be started in the second trimester and also Al-Edani's study had the same findings,^[31] while in Kumari's study, melasma was seen in 2.5% of cases and most of cases (80%) started in the first trimester of pregnancy.^[32]

Spider telangiectasias, also termed spider angiomas, spider nevi, or nevi aranei, develop in approximately 60% of White pregnant women but are found much less frequently in dark-skinned women.^[33,34] However, in this study, it constitutes 7.6% of the total cases.

Intensae (striae gravidarum) are a cause of great concern for pregnant women. They occur in 60%–90% of White women but less commonly in Asian women,^[34,35,36] and it was found to be about 78% of the total of the cases in this study.

CONCLUSIONS

The study showed that the most common skin changes and diseases during pregnancy include: (1) pruritus gravidarum (more common started in primigravida and in the third trimester); (2) scabies (may be due to endemic of this disease) and superficial fungal infection; (3) striae gravidarum (more common in multigravida in the third trimester) followed by melasma (more common multigravida in the second trimester).

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Conflicts of interest

There are no conflicts of interest.

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Table 10: Distribution of the study sample according to the presence of the physiological skin changes in pregnant women

Skin changes	Parity		Trimester			Total	Percentage
	Primi	Primi	1 st	2 nd	3 rd		
Striae gravidarum	75	159	34	92	108	234	78
Melasma	62	86	33	65	50	148	49.3
Generalized hyperpigmentation	24	77	18	38	45	101	33.6
Hirsutism	19	58	8	23	46	77	25.6
Leg edema	16	34	1	21	28	50	16.6
Palmer erythema	20	29	3	18	28	49	16.3
Nail changes	9	21	2	18	10	30	10
Leg varicosity	3	26	1	12	16	29	9.6
Spider angioma	8	15	2	9	12	23	7.6
Male pattern baldness	5	14	4	6	9	19	6.3
Pregnancy gingivitis	2	13	2	5	8	15	5
Molluscum gravidarum	4	6	-	4	6	10	3.3

More than one change may affect the same woman

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