

# Comprehensive Study For Skin Diseases In Primigravid And Multigravid Pregnant Women

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## ABSTRACT

In gestation, many changes may occur for the pregnant including hormonal, immunological and vascular changes, these changes affect the skin during gestational period and the effect may persist even after pregnancy. The study included 200 pregnant women in the mean ages of (29.89 year). The pregnant women were divided into two groups; primigravid group which included 70 pregnant woman (35% of pregnant) and multigravid group which included 130 pregnant woman (65% of pregnant). During the study period, 136 pregnant women are presented in the 3rd trimester (68%), 54 pregnant women are presented in 2nd trimester (27%) and the other (5%) are presented in first trimester. The dermatological changes and diseases that were diagnosed in this study were divided into three classes: physiological changes and diseases which were seen in 90% of pregnant women, coincidental and preexisting diseases which were seen in 74% of pregnant women and specific dermatoses of pregnancy which were seen in 14% of pregnant women. The physiological skin changes that were seen in pregnant women in this study are Striae Gravidarum (70% of cases), Melasma (38%), Telogen Effluvium (34%), Secondary Areola (22%), Montgomery Tubercle (20%), Linea Nigra (10%), Pitting Oedema (7%), Abdominal Wall Oedema (5%). Striae was the most common physiological change affected upon (70%) of pregnant women and the affect was mainly on multigravid group. The coincidental and preexisting diseases that were seen in pregnant women in this study are divided into inflammatory (mainly Hand Eczema in a percent of 16%) and infections (mainly Vulvovaginal candidiasis in a percent of 25%). The specific dermatoses that were seen in this study are Atopic Eruption (6% of cases), PUPPP (4%), Herpes Gestation (2%) and Ihc (1%). In gestation, many changes may occur for the pregnant including hormonal, immunological and vascular changes, these changes affect the skin during gestational period and the effect may persist even after pregnancy. The study included 200 pregnant women in the mean ages of (29.89 year). The pregnant women were divided into two groups; primigravid group which included 70 pregnant woman (35% of pregnant) and multigravid group which included 130 pregnant woman (65% of pregnant). During the study period, 136 pregnant women are presented in the 3rd trimester (68%), 54 pregnant women are presented in 2nd trimester (27%) and the other (5%) are presented in first trimester. The dermatological changes and diseases that were diagnosed in this study were divided into three classes: physiological changes and diseases which were seen in 90% of pregnant women, coincidental and preexisting diseases which were seen in 74% of pregnant women and specific dermatoses of pregnancy which were seen in 14% of pregnant women. The physiological skin changes that were seen in pregnant women in this study are Striae Gravidarum (70% of cases), Melasma (38%), Telogen Effluvium (34%), Secondary Areola (22%), Montgomery Tubercle (20%), Linea Nigra (10%), Pitting Oedema (7%), Abdominal Wall Oedema (5%). Striae was the most common physiological change affected upon (70%) of pregnant women and the affect was mainly on multigravid group. The coincidental and preexisting diseases that were seen in pregnant women in this study are divided into inflammatory (mainly Hand Eczema in a percent of 16%) and infections (mainly Vulvovaginal candidiasis in a percent of 25%). The specific dermatoses that were seen in this study are Atopic Eruption (6% of cases), PUPPP (4%), Herpes Gestation (2%) and Ihc (1%).

**Keywords:** Skin diseases. Pregnancy. Primigravida. Multigravida.

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## INTRODUCTION

In gestation, many changes may occur for the pregnant including hormonal, immunological and vascular changes, these changes affect the skin during gestational period and the effect may persist even after pregnancy<sup>1</sup>. These skin problems can extend from normal physiological skin changes which may occur in every pregnant woman, to skin diseases that haven't relationship with pregnancy and also to dermatoses that seem to be specially related to pregnancy<sup>2</sup>. Many changes are occurred in pregnancy including hormonal changes like the elevation of serum MSH, this elevation leads to skin physiological changes, mainly hyperpigmentation, like *Melasma* which also called the mask of pregnancy. Other physiological changes are *Linea nigra*, *secondary areola* and *striae gravidarum* that may seen in approximately 90% of third

trimester pregnant wome in different region especially in abdomen and thighs<sup>3</sup>. Many diseases are previously present in the pregnant women but these diseases may be improved or exacerbated during gestation, one good example is Psoriasis which improves during gestation<sup>4</sup>. The immunological changes have a significant role in pregnancy, the clinical presentation may be altered due to maternal immunity impairment leading to serious problems to mother and may even fetus like *genital warts*, *candida vulvovaginitis* and *scabies*<sup>5</sup>. An interesting challenge in pregnancy is the sexually transmitted diseases that are ranged from asymptomatic to fatal. STDs are responsible on physical and emotional pain and on other changes leading to adverse pregnancy outcome<sup>6</sup>. Genital warts are the most sexual transmitted disease found in pregnancy and these show increase in size and

number, increase in vaginal involvement and increase rate of secondary bacterial infections<sup>7</sup>. Therefore Sexually transmitted diseases (STDs) are a major health problem<sup>8</sup>. The other challenge in pregnancy is the sexually transmitted infections (STIs) which continue to major public health<sup>9</sup>. Candidiasis is very common and was seen to be the common cause of white discharge per vagina. Pityrosporum folliculitis, caused by Pityrosporum ovale, is more common in pregnancy<sup>10</sup>. Other major problem is Herpes simplex virus infection and Varicella zoster virus infection that affect the pregnancy<sup>11,12</sup>. Dermatoses in pregnancy represent a severe pruritic and heterogeneous inflammation group of dermatoses associated exclusively with pregnancy and/or the immediate post-partum time which can be very distressing for the mother. They involve polymorphic eruption of pregnancy (PEP), formerly known as pruritic urticarial papules and plaques of pregnancy (PUPPP); pemphigoid gestationis (PG), formerly known as herpes gestationis; intrahepatic cholestasis of pregnancy (ICP); and atopic eruption of pregnancy (AEP). AEP includes eczema of pregnancy (EP), prurigo of pregnancy (PP) and pruritic folliculitis (PF)<sup>13</sup>.

#### MATERIAL AND METHODS

The study was performed on 200 pregnant women in the private dermatology clinic in Fallujah city with many cases coming from obstetrics and gynecology specialists. The study on the pregnant patients was persisted for two years for the period of September 2016 to September 2018. The full detailed history and examination were done for skin lesions involving the existence of itching, the relationship between onset and pregnancy duration, jaundice, vaginal discharge, history of family of similar lesions, worsening factors, associated medical or skin disorders was elicited and recorded. Fully skin examinations were done for each case to understand all of the physiological changes of skin and skin appendages. If any pregnancy specific dermatosis was found, the morphology of skin lesions, distribution and the sites included were studied. Related systemic examination was

performed. When preexisting skin disease was observed, any evidence of worsening or improvement was saved. Consistent tests were done to prove diagnosis for specific cases like immunological and biochemical tests. In addition to laboratory practical procedures like Tzanck smear, the mount of KOH and Gram's stain were performed. To prove diagnosis, skin biopsy and DIF were performed for many specific cases. For each case with pruritic history related to specific problems of pregnancy, liver function tests were performed. In sexually transmitted disease the examination of the contact was performed for each case.

#### RESULTS AND DISCUSSION

Many diseases were diagnosed in this study and were grouped into three groups: physiological changes and diseases which were seen in 90% of pregnant women, coincidental and preexisting diseases which were seen in 74% of pregnant women and specific dermatoses of pregnancy which were seen in 14% of pregnant women. During the period of study, 136 pregnant women are presented in the 3rd trimester (68%), 54 pregnant women are presented in 2nd trimester (27%) and the other (5%) are presented in first trimester. The physiological skin changes that were seen in pregnant women in this study included many diseases, the highly percentage is for *Striae Gravidarum* which comprise 70% of total cases, the study showed that *Striae Gravidarum* affect multigravid women more than primigravid women, (45%) and (25%) respectively. In all cases the *Striae Gravidarum* was seen mainly in abdomen and also seen in a lesser range in thighs and breasts. *Striae* was seen in (45%) in third trimester followed by (20%) in second trimester and only (5%) in first trimester. Generally, the physiological changes affect the multigravid women in third trimester more than primigravid women in first and second trimester (table 1).

Table 1: The percentages of Physiological skin changes and diseases in main gravidity and trimester.

No.	Physiological skin changes and diseases	No. of cases	Percentage of cases	Main Gravidity	Main Trimester
1	Sriae gravidarum	140	70	Multi	3 <sup>rd</sup>
2	Melasma	76	38	Multi	3 <sup>rd</sup>
3	Telogen effluvium	68	34	Multi	3 <sup>rd</sup>
4	Secondary areola	44	22	Multi	3 <sup>rd</sup>
5	Montgomery tubercle	40	20	Primi	3 <sup>rd</sup>
6	Linea nigra	20	10	Primi	3 <sup>rd</sup>
7	Pitting oedema	14	7	Primi	3 <sup>rd</sup>
8	Abdominal wall oedema	10	5	Primi	3 <sup>rd</sup>

The physiological skin changes that were seen in pregnant women as shown in (table 1) also included *Melasma* in a percent of 38% affected mainly the multigravid women and principally in the third trimester of pregnancy, *Telogen effluvium* was seen principally in multigravid women and principally in the third trimester of pregnancy in a percent of 34%, *Secondary areola* was seen principally in multigravid women and principally in the third trimester of pregnancy in a percent of 22%, *Montgomery tubercle* was seen principally in primigravid women and principally in the third trimester of pregnancy in a percent of 20%, *Linea nigra* was seen principally in primigravid women and principally in the third trimester of pregnancy in a percent of 10%, *Pitting oedema* was seen principally in primigravid women and principally in the third trimester of pregnancy in a percent of 7% and

*Abdominal wall oedema* was seen principally in primigravid women and mainly in the third trimester of pregnancy in a percent of 5%.

The coincidental and preexisting diseases that were seen in seen (74%) of pregnant women in this study are grouped into infections and inflammatory diseases. Each group has many diseases in a different percentages, gravidity and trimester. The inflammatory group included mainly *Hand Eczema* which was seen in (16%) of cases mainly in the third trimester of multigravid women as shown in (table 2). Hand Eczema was also seen in all trimesters of primigravida and multigravida but in a few cases.

Table 2: The percentages of inflammatory coincidental and preexisting diseases in main gravidity and trimester.

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No.	Inflammatory coincidental and preexisting diseases	No. of cases	Percentage of cases	Main Gravidity	Main Trimester
1	Hand eczema	32	16	Multi	3 <sup>rd</sup>
2	Urticaria	12	6	Multi	3 <sup>rd</sup> + 2 <sup>nd</sup>
3	Pityriasis rosea	12	6	Multi	3 <sup>rd</sup> + 2 <sup>nd</sup>
4	Atopic dermatitis	10	5	primi	3 <sup>rd</sup>
5	Psoriasis	6	3	Multi	3 <sup>rd</sup>
6	Acne vulgaris	6	3	Multi	3 <sup>rd</sup>
7	Discoïd eczema	2	1	Multi	3 <sup>rd</sup>

The inflammatory coincidental and preexisting diseases that were seen in pregnant women shown in (table 2) also included *Urticaria* in a percent of 6% affected mainly the multigravid women and similarly in both second and third trimester of pregnancy, *Pityriasis rosea* was seen mainly in multigravid women and similarly in both second and third trimester of pregnancy in a percent of 6%, *Atopic dermatitis* was seen mainly in primigravid women and mainly in third trimester of pregnancy in a percent of 5%, *Psoriasis* was seen mainly in multigravid women and mainly in third trimester of pregnancy in a percent of 3%, *Acne vulgaris* was seen mainly in

multigravid women and mainly in third trimester of pregnancy in a percent of 3% and *Discoïd eczema* was seen mainly in multigravid women and mainly in third trimester of pregnancy in a percent of 1%.

The infection group included mainly *Vulvovaginal Candidiasis* which was seen in (25%) of cases mainly in the third trimester of multigravid women as shown in (table 3). *Vulvovaginal Candidiasis* was also seen in other trimesters of multi and primigravida in a lesser extent.

Table 3: the percentages of infection coincidental and preexisting diseases in main gravidity and trimester.

No.	Infection coincidental and preexisting diseases	No. of cases	Percentage of cases	Main Gravidity	Main Trimester
1	Vulvovaginal candidiasis	50	25	Multi	3 <sup>rd</sup>
2	Genital wart	30	15	Multi	3 <sup>rd</sup>
3	Scabies	24	12	Multi+Primi	3 <sup>rd</sup>
4	Tinea corporis	18	9	multi	3 <sup>rd</sup>
5	Molluscum contagiosum	16	8	Multi	3 <sup>rd</sup>
6	Tinea versicolor	12	6	Multi	3 <sup>rd</sup>
7	Bacterial vaginosis	8	4	Multi	3 <sup>rd</sup>
8	Herpes genitals	6	3	Primi	3 <sup>rd</sup>
9	Herpes zoster	6	3	Multi+Primi	2 <sup>nd</sup> +3 <sup>rd</sup>
10	Herpes labialis	4	2	Primi	3 <sup>rd</sup>

The infection coincidental and preexisting diseases that were seen in pregnant women shown in (table 3) also included *Genital wart* in a percent of 15% affected mainly the multigravid women in third trimester of pregnancy, *Scabies* in a percent of 12% affected both primigravid and multigravid women in third trimester of pregnancy, *Tinea corporis* in a percent of 9% affected mainly the multigravid women in third trimester of pregnancy, *Molluscum contagiosum* in a percent of 8% affected mainly the multigravid women in third trimester of pregnancy, *Tinea versicolor* in a percent of 6% affected mainly the multigravid women in third trimester of pregnancy, *Bacterial vaginosis* in a percent of 4% affected mainly the multigravid women in third trimester of pregnancy, *Herpes genitals* in a percent of 3% affected mainly the primigravid women in third trimester of

pregnancy, *Herpes zoster* in a percent of 3% affected both the primigravid and multigravid women in both second and third trimester of pregnancy and *Herpes labialis* in a percent of 2% affected mainly the primigravid women in third trimester of pregnancy. The specific dermatoses of pregnancy which were seen in 14% of pregnant women which are shown in (table 4) included mainly *Atopic eruption* which was seen in (6%) of cases mainly in the third trimester of primigravid women. Despite the occurrence of Atopic eruption in other gravidity and different trimester but it appears mainly in third trimester of primigravid women.

Table 4: the percentages of specific dermatoses in main gravidity and trimester.

No.	Specific dermatoses	No. of cases	Percentage of cases	Main Gravidity	Main Trimester
1	Atopic eruption	12	6	Primi	3 <sup>rd</sup>
2	PUPPP	8	4	Primi	3 <sup>rd</sup>
3	Herpes gestation	4	2	Multi+Primi	2 <sup>nd</sup>
4	IHC	1	0.5	primi	3 <sup>rd</sup>
5	Pruritic folliculitis	1	0.5	Multi	1 <sup>st</sup>

The specific dermatoses that were seen in pregnant women shown in (table 4) also included *PUPPP* in a percent of 4% affected mainly the primigravid women in third trimester of pregnancy, *Herpes gestation* in a percent of 2% affected both the primigravid and multigravid women in the second trimester of pregnancy, *IHC* in a percent of 0.5% affected mainly the primigravid

women in third trimester of pregnancy and *Pruritic folliculitis* in a percent of 0.5% affected mainly the multigravid women in the first trimester of pregnancy. From the results of this study, the multigravid women, especially in third trimester, are more prone to skin diseases from primigravida. Also the third trimester of pregnancy has the big share of dermatological problems

comparing with the first and second trimester and this can be attributed to hormonal and immunological changes that occur in during pregnancy. *Striae gravidarum* appears in pregnant women because the rapid rate of skin stretching causing collagen fiber disruption and elastin<sup>14</sup>, in addition to hormones effect and many other factors like the obesity and if the infant is large<sup>15</sup>. *Melasma* appeared in a high percent in this study after *Striae* this can be justified by severe increase in the level of estrogen and progesterone causing increased production of melanin pigment, therefore *Melasma* is also called hyperpigmentation and it is fade after delivery or after breastfeeding. *Hand Eczema* was seen in a percent of (16%) mainly in multigravid women in the third trimester, this can be attributed to the immunological changes that occur during pregnancy. *Vulvovaginal candidiasis* in a percent of (25%) was identified in multigravid women in the third trimester and this results match other previous studies, this can be explained by an immunological alteration concomitant the pregnancy, high level of estrogen and increased production of glycogen in vagina. *Genital wart* is a sexually transmitted infections was seen in (15%) of multigravid women in the third trimester, *Genital wart* is caused by a certain strain of papillomavirus. *Molluscum contagiosum* is a sexually transmitted disease which was seen in (8%) of cases of multigravid women in the third trimester, this infection can be caused by skin contact or by viral infection through sexual contact. *Bacterial vaginosis* in a percent of (4%) was seen in multigravid women in the third trimester. *Bacterial vaginosis* is common in sexually active women and may cause many complications for mother and the fetus. *Herpes genitals* is a sexually transmitted infection seen in this study in (3%) of cases mainly in primigravid women in the third trimester.

#### CONCLUSIONS

The results of this study showed many various diseases that may occur during pregnancy in a different percentages, the results showed that the more prone pregnant to skin diseases during pregnancy is the multigravid woman despite the appearance of significant percentages that were seen in primigravid women. Most of skin diseases that were diagnosed in this study occurred in the third trimester of pregnancy this may be due to sever hormonal changes that occur in this period of pregnancy in addition to immunological changes.

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