



AN OBSERVATIONAL STUDY ON SPECIFIC DERMATOSES OF PREGNANCY IN A TERTIARY HEALTH CARE SETUP

Dermatology

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ABSTRACT

Certain dermatoses are specifically seen in pregnancy or postpartum period. It is therefore important for the clinicians to recognize and treat these cutaneous disorders to minimize maternal and fetal morbidity. The commonest pregnancy related dermatoses were polymorphic eruption of pregnancy seen in 18.57% patients, prurigo of pregnancy was seen in 5% patients, pruritic folliculitis of pregnancy was seen in 1% patients. It was seen that the skin disorders were commonest in the third trimester

KEYWORDS

pregnancy; dermatoses; prurigo; pruritis; urticaria; polymorphic eruption

INTRODUCTION

Pregnancy induces notable shifts in the hormonal, metabolic, and immune functions of the body, resulting in a spectrum of skin changes, encompassing both physiologic and pathologic alterations.[1] These changes can range from typical alterations to specific skin conditions associated with pregnancy. Additionally, pregnancy can induce the fastening of existing dermatological conditions. Concerns of pregnant individuals may vary from cosmetic appearance to the possibility of the issue recurring in future pregnancies, as well as potential impacts on the health of the developing infant in ways of both morbidity and mortality.[2]

In this current study aimed to determine the frequency of specific dermatoses of the skin during pregnancy.

Aims And Objectives

- To study the prevalence of specific dermatoses of pregnancy.
- To correlate the prevalence of the major cutaneous changes and diseases in relation to different trimesters of pregnancy and with gravidity.
- To inculcate awareness and recognition of the specific pregnancy conditions and familiarity with their outcomes and treatment are essential for better management and care of pregnant women.

MATERIALS AND METHODS

This is an observational study of 70 pregnant patients presenting to department of dermatology, venereology and leprosy in Chettinad Hospital and Research Institute, Kelambakkam in age group of 18-40 years from November 2022 to November 2023.

Specific attention was given to any dermatoses related to pregnancy, including their appearance, distribution, and affected areas. Systemic examinations were also performed, noting any exacerbation or remission of preexisting skin conditions. Additional investigations, including laboratory tests and skin biopsies, were carried out as needed to confirm diagnoses.

Statistical comparisons of significant skin changes among primigravida and multigravida pregnant individuals, as well as across different trimesters, were conducted using Fisher's exact test and Chi-square test, respectively.

Inclusion Criteria:

Patients with pregnancy dermatoses with the following criteria:

- Age 18-40 years
- All trimesters
- All gravida
- Patients consents for the study
- Patient willing to undergo the investigation if required

Exclusion Criteria

- Age below 18 and above 40 years
- Patients not willing for the study
- Patients not willing to undergo the required investigation.

RESULTS

During the period from November 2022 to November 2023, a sum of 70 gravid females were included in the study. Among them, 28 (40%) were experiencing their first pregnancy (primigravidas), while 42 (60%) had been pregnant before (multigravidas). Within the multigravida's group, 25 (35.71%) were on their second pregnancy, 14 (20%) were on their third pregnancy, and 3 (4.28%) were on their fourth pregnancy.

The distribution of cases across trimesters as follows: 15 (21.42%) in the first trimester, 19 (27.12%) in the second trimester, and 36 (31.36%) in the third trimester.

Table 1 illustrates how patients are distributed across various gravidas and trimesters.

TABLE 1

Distribution of cases among various gravidas and trimesters (n= 70)							
Parity	I Trimester		II Trimester		III Trimester		Total
	No of Pregnant women	%	No of Pregnant women	%	No of Pregnant women	%	No of Pregnant women
Gravida 1	7	10	9	12.8	12	17.1	28
Gravida 2	5	7.1	6	8.5	14	20	25
Gravida 3	3	4.28	3	4.2	8	11.4	14
Gravida 4	0	0	1	1.4	2	2.8	3
Total	15	21.4	19	27.1	36	51.4	70

The age range of patients spanned from 18 to 40 years old, with the youngest being 18 and the oldest 40. Twenty-six individuals, comprising 37.14% of the sample, fell within the 26-29 age group (Table 2). Many cases exhibited type four or five skin type and a significant portion came from lower socioeconomic backgrounds.

TABLE 2

Age distribution of the pregnant women in the study group (n=70)

Age group in years	Total Number	Percentage
18-21	5	17.14%
22-25	22	31.42%
26-29	26	37.14%
30-33	14	20%
34-40	3	4.28%

Table 3

Distribution of specific dermatoses observed during pregnancy (n= 70)														
Dermatoses	I Trimester				II Trimester				III Trimester				Total	Percentage (n= 70)
	G1	G2	G3	G4	G1	G2	G3	G4	G1	G2	G3	G4		
Pruritis gravidarum	0	0	0	0	0	0	0	0	5	2	2	0	9	12.85
PUPP	0	0	0	0	0	0	0	0	7	4	1	1	13	18.57
Prurigo of pregnancy	0	0	0	0	0	0	0	0	2	1	1	0	4	5.71
Pruritic folliculitis	0	0	0	0	0	0	0	0	1	0	0	0	1	1.42
Pemphigoid gestationis	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Dermatoses specific to pregnancy were exclusively seen in the last trimester, totalling 27 cases (38.57%), as detailed in Table 3

Table 4 Statistical analysis of association between specific dermatoses and gravidity.

Specific dermatoses	Present	Absent	Test of significance
Primigravida	15(21.42%)	13(18.57%)	P=0.0465
Multigravida	12 (17.14%)	30 (42.85%)	

According to Fisher's exact test, there was a statistically significant variation in the proportions of specific skin conditions between first-time pregnant women (primigravida) and those who had been pregnant multiple times (multigravida), with a p-value of 0.0465 (table 4).

Table 5 Statistical analysis of association between specific dermatoses and various trimesters.

Specific dermatoses		Present	Absent	Test of significance
Trimester	I	0	15 (21.42%)	p < 0.001
	II	0	19 (27.14%)	
	III	27(38.57%)	9 (12.85%)	

The Chi-square test indicated a statistically significant difference in the proportion of specific skin conditions across different trimesters of pregnancy, with a p-value of less than 0.001 (table 5).

Nine patients, accounting for 12.85% of the total cases (n=9), experienced pruritus gravidarum. Among these cases, 5 (7.14%) were primigravidas, and 4 (5.71%) were multigravida, all with primigravida. Onset of severe pruritus primarily localized to the abdomen, later spreading across the body, was observed exclusively in the third trimester, accompanied by additional skin abnormalities such as scratches and irritated papules. None of the patients clinically exhibited jaundice, and most had normal liver function tests, except for two patients with increased alkaline phosphatase amounts.

Pruritic urticarial papule and plaque of pregnancy were the most prevalent condition, observed in 13 cases (18.57%). The majority were primigravidas (n=7, 10%), with 6 cases (8.57%) occurring in multigravidas (G2, G3, and G4), all with singleton pregnancies. Skin lesions typically emerged during the third trimester, starting on the lower abdomen, (figure1.a ,1.b) particularly around striae distensae, and progressively spreading to other body areas. The predominant manifestation in many patients was reddish urticarial wheals and plaques.

Prurigo of pregnancy manifested in 4 patients (5.71%), 2 cases (2.8%) occurring in primigravidas and 2 (2.8%) in multigravidas. Skin lesions typically emerged during the third trimester, characterized by itchy hyperpigmented papules and excoriations primarily appearing on the extensor surfaces of the limbs, later spreading to the abdomen and trunk. All affected patients had singleton pregnancies, and none of the women who had given birth multiple times had encountered comparable rashes during earlier pregnancies.

Pruritic folliculitis was observed in 1 case (1.42%), occurring in a primigravida during the third trimester, presenting as pruritic reddish follicular papules over the legs (Figure 4).

In all specific dermatoses, the face and mucous membranes were unaffected. No cases of pemphigoid gestationis were seen in the group.



Figure 1.a



Figure 1.b

Urticarial papules and plaques seen over the striae of a primi in third trimester (figure 1.a, figure 1.b)



Figure 2. Primi presented with urticarial papules in both hands with PUPPP in third trimester



Figure 3. PUPPP seen over the thighs in last trimester



Figure 4. Reddish pustules and papules over leg in a primi with folliculitis in third trimester

DISCUSSION

Pregnancy induces various cutaneous alterations in the skin, categorized into specific conditions termed dermatoses of pregnancy, those influenced by pregnancy, and common physiological changes. While most physiological skin changes do not pose health risks to the mother or fetus, certain ones may have cosmetic implications and are

noteworthy for dermatologists.

Pruritus is frequently associated with specific dermatoses of pregnancy, manifesting as a variable severity eruption. Kumari et al. [2] reported 23 patients (3.6%) of dermatoses specific to pregnancy. In our study, specific dermatoses of pregnancy were noted in 38.57% (n = 27) of cases, with a notable occurrence during the last trimester, which was statistically significant ($p < 0.001$). A higher prevalence of specific dermatoses was noted in primi females (21.42%), which was also statistically significant ($P = 0.0465$).

In the literary works, pruritus gravidarum typically occurs during the last trimesters of pregnant women in 60% of patients [5], with reported incidences ranging from 0.03% to 3% of gravid females.[8] Shiva Kumar and Madhava Murthy [4] documented pruritus gravidarum in 3.52% of patients, while Raj et al. [6] documented it in 0.1% of patients.

In our research, we observed pruritus gravidarum in 9 cases (12.85%). Among those affected, 5 (7.1%) were primigravidas, and the onset occurred during the last trimester. This timing of onset aligns with findings from another trial studies. [5,4,6]

The prevalence of polymorphic eruption of pregnancy or PUPPP ranged from one in one hundred and thirty gravidas to one in three hundred gravidas.[1] Shivakumar and Madhava Murthy [4] documented PUPPP in 3% of patients, while Raj et al. [6] documented it in 0.3% of patients. Kumari et al. [2] documented PUPPP in 14 out of 22 cases. In our research, PUPPP was the predominant specific dermatosis observed in 13 cases (18.57%). The majority of affected individuals were primigravida patients (10%). Our study did not find an association with multiple gestations. All patients experienced the characteristic eruption. During the third trimester. The pattern of primigravidas being more affected and the development seen in the last trimester aligns with findings from other studies. [2,4,8-10] Additionally, the hypothesis is supported by the fact that the onset typically occurs in the third trimester and that primigravidas are more affected. This theory proposes that rapid stretching of the stomach wall in primi might lead to connective tissue damage, resulting in the formation of striae.

Shivakumar and Madhava Murthy,[4] Raj et al. [6] documented incidences of prurigo of pregnancy at rates of 9%, 1.3%, and one case out of 23 patients. Our research observed prurigo of pregnancy among 5.71% (4 cases) of the total patients.

Pruritic folliculitis of pregnancy was observed in 1.42% (1 case), aligning with findings from another research.[2]

Pemphigoid gestationis occurs in approximately 1 out of every Fifty thousand pregnancies.[5] No participants in our study were diagnosed with pemphigoid gestationis.

CONCLUSION

The above study shows the prevalence of specific dermatoses related to pregnancy was 38.5% of which PUPPP (18.57%) was the most prevalent disease encountered, Pruritus gravidarum (12.85%), followed by prurigo in pregnancy (5.71%), and folliculitis of pregnancy (1.42%).

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