

**Research Article**

**Evaluation of pruritic dermatoses in obstetrics presenting at  
Medicare Hospital Multan**

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**ABSTRACT**

**Objective:** To evaluate the pruritic dermatoses in obstetrics presenting at Medicare Hospital Multan.

**Material and methods:** This case series study was held at Department of Obstetrics and Gynecology, Medicare Hospital Multan from January 2017 to June 2017. A total of 238 pregnant women fulfilling the inclusion criteria were enrolled in the study. All the patients were evaluated for the presence of pruritic dermatoses of pregnancy. All the information was collected in a proforma.

**RESULTS:** In present study mean age of the obstetrics was  $27.63 \pm 5.42$  years. Pruritic dermatoses were observed in 14 (5.9%) patients. Polymorphic eruption of pregnancy in 5 (35.7%) patients, prurigo of pregnancy in 1 (7.1%), intrahepatic cholestasis of pregnancy in 1 (7.1%) patient, eczema in pregnancy in 4 (28.6%) patients, pruritic folliculitis of pregnancy in 1 (7.1%) patient and pemphigoid gestationis in 2 (14.3%) patients.

**CONCLUSION:** Pruritic dermatoses are common among pregnant women. Polymorphic eruption of pregnancy is most common followed by eczema of pregnancy in our setup.

**KEY WORDS:** Pruritic dermatoses of pregnancy; polymorphic eruption of pregnancy

**INTRODUCTION**

Pregnancy is a physiological state of woman which is associated with complex endocrinological, immunological, metabolic, and vascular changes.<sup>1,2</sup> Due to these changes, a pregnant woman becomes susceptible to changes in skin and appendages. These changes may be physiological (hormonal), changes in pre-existing skin diseases or

development of new pregnancy specific dermatoses.<sup>1,2</sup>

The commonly encountered physiological changes include striae distensae (occurring in up to 90% of pregnant women), hormonal alterations resulting in melasma (occurring in up to 75% of women during pregnancy) and generalized hyperpigmentation. Vascular alterations result in edema, palmar

erythema, spider nevi, varicosities, cutis marmorata, gingival edema and redness. Some women also notice hair and nail changes. Similarly the activity of eccrine and sebaceous glands increases, while that of apocrine gland decreases.<sup>3</sup>

Likewise, the concerns of the patient may range from cosmetic appearance, to the chance of recurrence of the particular problem during a subsequent pregnancy, to its potential effects on the fetus in terms of morbidity and mortality.<sup>4,5</sup>

Pruritic dermatoses of pregnancy include an ill-defined heterogeneous group of pruritic skin eruptions which are seen only in pregnancy. These include atopic eruption of pregnancy, polymorphic eruption of pregnancy, pemphigoid gestationis and intrahepatic cholestasis of pregnancy. Atopic eruption of pregnancy is the most common of these disorders. Most skin eruptions resolve postpartum and require only symptomatic treatment.<sup>6</sup>

Clinical diagnosis is based on morphologic criteria and is very important for specific dermatoses of pregnancy, because unequivocal diagnostic tests are only available for some of them. Specifically immunofluorescences for pemphigoid gestationis or laboratory investigations for intrahepatic cholestasis of pregnancy are available.<sup>7-</sup>

<sup>9</sup>The pruritic dermatoses of pregnancy include atopic eruption of pregnancy, polymorphic eruption of pregnancy, pemphigoid gestationis and intrahepatic cholestasis of pregnancy.<sup>10-13</sup>

While some of these dermatoses are merely unpleasant for the mother due to severe pruritus, others are also accompanied by a significant fetal risk. Unclear clinical definitions, the lack of a practically relevant classification, a lack of safe diagnostic tests, as well as

limited therapeutic possibilities have made their management difficult in past decades.<sup>14</sup>

In a study by Samdani, the following frequencies of pruritic dermatoses was found among pregnant women; polymorphic eruption of pregnancy (PEP) was the most common (38.29%), followed by intra-hepatic cholestasis of pregnancy (25.53%) and pemphigoid gestationis (19.14%).<sup>15</sup>

Ambrose-Rudolph, et al, also performed a study on 505 pregnant women and found the following results: eczema in pregnancy in Pregnant women and found the following results: eczema in pregnancy in 49.7%, polymorphic eruption of pregnancy in 21.6% and miscellaneous dermatoses in 20.6%.<sup>10</sup>

## OPERATIONAL DEFINITIONS

### Pruritic Dermatoses in pregnant women:

It was assigned to the pregnant women who had any of the following lesions (one or more than one):

1. **Pemphigoid gestationis:** The diagnosis was made clinically. It was assigned to the patients who presented with urticarial lesions (reddish raised elevated lesions of < 10 mm in size) or bullous eruption [small (< 5mm) or large (> 5mm) fluid filled lesions in the skin], in a periumbilical distribution that spare the face, palms, and soles.

2. **Polymorphic eruption of pregnancy:** It was assigned to the patients who presented with urticarial papules (itchy redish raised lesions of < 10 mm) and plaques (itchy redish raised lesion of > 10 mm) on the abdomen, legs, arms, buttocks, chest, and back.

3. **Prurigo of pregnancy:** It was assigned to the patients who have eruption with excoriated papules and nodules (linear abrasion in the presence of raised redish skin lesions of any size).

4. **Intrahepatic cholestasis of pregnancy:** This was diagnosed in the patient in whom skin rashes was develop after scratching over the skin

and laboratory showed the evidence of raised bilirubin level ( $> 1.0$  mg/dl).

5. **Eczema in pregnancy:** It was assigned to the patients who had itching all over the body and/or skin damage over the flexor areas of skin. The family history of skin rash was also positive.

6. **Pruritic folliculitis of pregnancy:** It was a clinical diagnosis characterized by redness, itching and/or pus formation in the hair follicle. .

**Pregnancy:**

The term pregnancy was assigned to a female patient with the history of gestational amnorrhea of more than one month and presence of intrauterine conception further confirmed by ultrasonography.

**MATERIAL & METHODS**

This case series study was held at Department of Obstetrics and Gynecology, Medicare Hospital Multan from January 2017 to June 2017.

**INCLUSION CRITERIA**

- Age: 20 – 40 years
- Gravidity: Primigravida or multigravida

**EXCLUSION CRITERIA**

- Patients with history of drug reaction (appearance of skin lesions after receiving medication) were excluded from the study
- Patients who had any past history of skin disorders (like systemic lupus erythematosus)

**DATA COLLECTION PROCEDURE**

Two hundred and thirty eight pregnant females fulfilling the inclusion criteria who presented to the gynecology outpatient department (OPD) for routine clinical follow checkup were included in the study. Informed verbal consent was taken. General data including age socioeconomic status and educational level was collected. The socioeconomic status was classified into three sub-groups on monthly income basis as low=

$<10,000$  Rs, middle= 10,000 to 50,000 Rs and high= 50,000 to onward. The educational status was categorized as literate (who can read and write) and illiterate.

All the patients received skin examination for the detection of pruritic dermatoses i.e. following lesions were searched (as per operational definition): pemphigoid gestationis, polymorphic eruption of pregnancy, prurigo of pregnancy, intrahepatic cholestasis of pregnancy, eczema in pregnancy and pruritic folliculitis of pregnancy. Patients who had any of the above lesions were labeled as having pruritic dermatoses. All the information was collected on pre-designed proforma.

**DATA ANALYSIS**

All the collected data were entered into SPSS version 10 and analyzed. The qualitative data variables related to pruritic dermatoses i.e. pemphigoid gestationis, polymorphic eruption of pregnancy, prurigo of pregnancy, intrahepatic cholestasis of pregnancy, eczema in pregnancy and pruritic folliculitis of pregnancy were presented as frequency distribution and percentages. Quantitative data variables in the study i.e. age (in years) was presented as means and standard deviations. The main outcome variable was pruritic dermatoses that were presented as frequency distribution table. Age, socio-economic, education and gravidity wise stratification of data in relation to outcome variables was carried and looked for significant variation in outcome in different age groups, if any.

**RESULTS**

Distribution of patients by Age:

The mean age of the patient was  $27.63 \pm 5.42$  (range 20–40 years). There was 91 (38.2%)

patient in the age range of 20–25 years while the age of 75 (31.5%) patients was in the age range of 26–30 year, 48 (20.2%) patients of age range of 31–35 years and 24 (10.1%) patients of age range of 36–40 years. (Table 1)

**Distribution of patients by Socio-economic Status:** Out of the total 238 pregnant women in the study, there were 130 (59%) women who belonged to low socioeconomic status, 68 (29%) women who belonged to middle socio-economic status and 40 (17%) women who belonged to high socio-economic status. (Figure 1)

**Distribution of patients by gravidity:**

There were 114 (48%) women who were primigravida and 124 (52%) women who were multigravida. (Figure 2)

**Distribution of patients by dermatoses of pregnancy:**

There were 14 (5.9%) patients in whom a dermatoses of pregnancy was found while in rest of 224 (94.1%) patients any dermatoses of pregnancy was not found. (Figure 3)

**Distribution of patients by type of dermatoses of pregnancy:** The type of dermatoses was also defined among 14 patients who were diagnosed with dermatoses of pregnancy. Out of those 14 patients, pemphigoid gestation was seen among 2 (14.3%) patients, polymorphic eruption of pregnancy in 5 (35.7%) patients, prurigofo pregnancy in 1 (7.1%), intrahepatic cholestasis of pregnancy in

1 (7.1%) patients, eczema in pregnancy in 4 (28.6%) patients and pruritic folliculitis of pregnancy in 1 (7.1%) patients. (Table 2)

**Age group distribution of dermatoses of pregnancy:**

The dermatoses of pregnancy was detected in 5 (35.7%) patients in the age group 20 – 25 years, 4 (28.6%) patients of age group of 26 – 30 years, 2 (14.3%) patients of age group of 31 – 35 years and 3 (21.4%) patients of age group of 36 – 40 years of age. (Table 3)

**Socio-economic status group distribution of patients by dermatoses of pregnancy:**

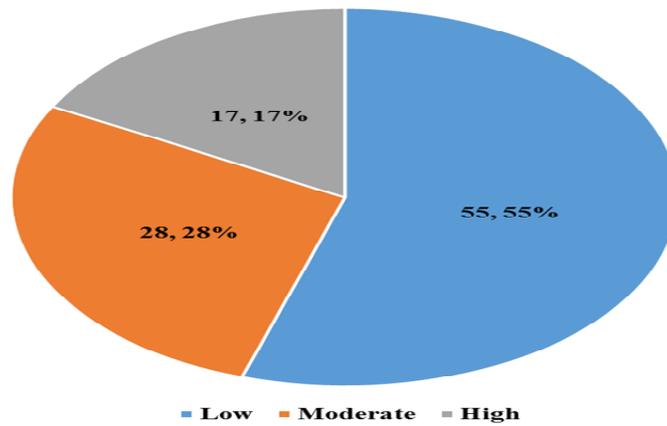
Out of the 14 patients with diagnosis of dermatoses of pregnancy, this was seen in 8 (57%) patients of low socio-economic group, 4 (28.7%) patients of middle socio-economic group and 2 (14.3%) patients of high socio-economic group. (Table 4)

**Gravidity group distribution of patients by dermatoses of pregnancy:** Out of the 14 patients with dermatoses of pregnancy, there were 8 (57.1%) patients who were primigravida and 6 (42.9%) patients who were multigravida. (Table 5) **Educational status group distribution of patients by dermatoses of pregnancy:** Out of 14 patients with dermatoses of pregnancy, there were 8 (57.1%) patients who were literate and 6 (42.9%) patients who were illiterate. (Table 6)

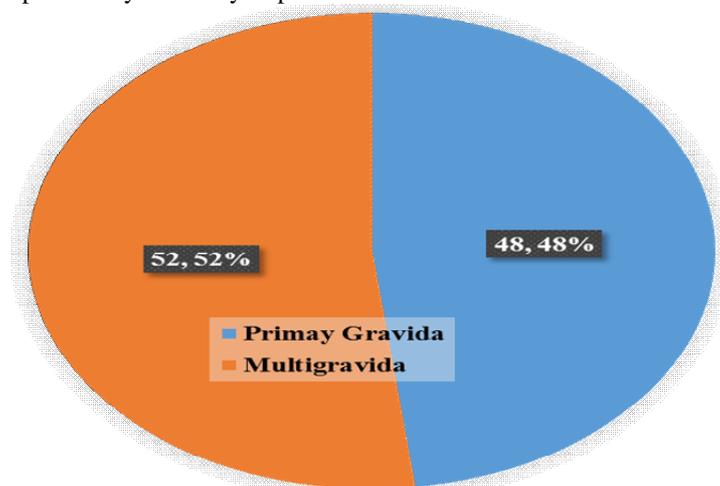
**Table 1:** Distribution of patients by age (n=238)

Age (Years)	No.	Percentage
20 – 25	91	38.2
26 – 30	75	31.5
31 – 35	48	20.2
36 – 40	24	10.1
Mean±SD	27.63 ± 5.42	
Range	20 – 40	

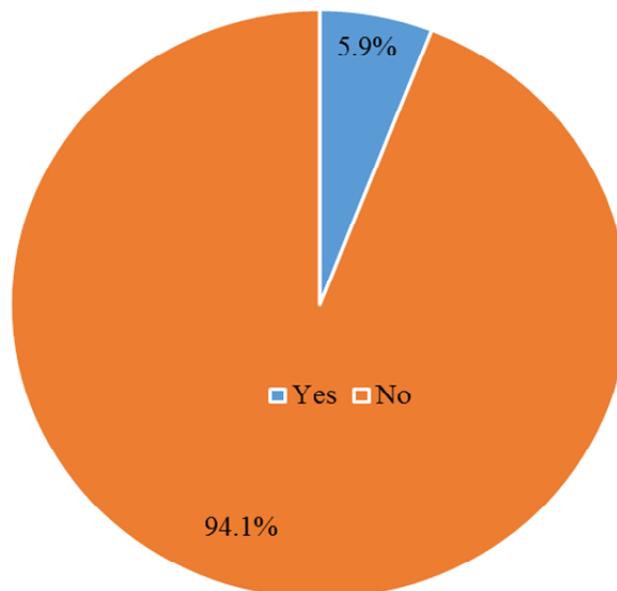
**Fig. 1:** Socio-economic Status



**Figure 2:** Distribution of patients by Gravidity of patients



**Figure 3:** Distribution of patients by Frequency of Dermatoses



**Table 2:** Distribution of patients by type of Dermatoses (n=14)

	Yes		No		Total	
	No.	%	No.	%	No.	%
<b>Pemphigoid Gestationis</b>	2	14.3	12	85.7	14	100
<b>Polymorphic Eruption Of Pregnancy</b>	5	35.7	9	64.3	14	100
<b>Prurigo Of Pregnancy</b>	1	7.1	13	92.7	14	100
<b>Intrahepatic Cholestasis Of Pregnancy</b>	1	7.1	14	92.7	14	100
<b>Eczema In Pregnancy</b>	4	28.6	10	71.4	14	100
<b>Pruritic folliculitis of pregnancy</b>	1	7.1	13	92.7	14	100

**Table 3:** Age group distribution of Dermatoses of Pregnancy

Age (Years)	Dermatoses of pregnancy	
	No.	Percentage
20 – 25	5	35.7
26 – 30	4	28.6
31 – 35	2	14.3
36 – 40	3	21.4

**Table 4:** Socio-economic group distribution of Dermatoses of Pregnancy (n=14)

Age (Years)	No.	Percentage
Low	8	57
Middle	4	28.7
High	2	14.3

**Table 5:** Gravidity group distribution of Dermatoses of Pregnancy

Age (Years)	No.	Percentage
Primigravida	8	57.1
Multigravida	6	42.9

**Table 6:** Educational status group distribution of Dermatoses of Pregnancy

Age (Years)	No.	Percentage
Literate	8	57.1
Iliterate	6	42.9

## DISCUSSION

This prospective case series was carried out in 238 pregnant women. The results of the study showed that, pruritic dermatoses were seen among 5.9 % patients. Of these, polymorphic eruption was seen most commonly i.e., among 35.7 % patients, followed by eczema of pregnancy i.e. 28.6% patients.

In literature, there have always been efforts to find out the patterns and frequency of pruritic dermatoses among pregnant women. Many studies have been conducted in this regard. Almost every study has shown different results.

Samdani AJ, et al, also performed a study on 47 pregnant patients with established diagnosis of pruritic dermatoses to find out the frequency and

pattern of the dermatoses.<sup>15</sup> Among these 47 patients, polymorphic eruption (PEP) was the most common (38.29%) of the pregnancy-related dermatoses followed by intra-hepatic cholestasis of pregnancy (25.53%), pemphigoid gestationis (19.14%), prurigo of pregnancy (8.51%), pruritic folliculitis (4.25%) and impetigo herpetiformis (4.25%). Like our study, polymorphic eruption was the most common of all the disorders. The other results of this study were also comparable. However, in study by Samdani AJ, et al, the frequency of intrahepatic cholestasis were high, i.e. 25.5% while this was 7.1% in our study.<sup>15</sup>

The age group most affected by this disorder in study by Samdani AJ, et al was 21-30 years (42.55%), followed by 31-40 years (38.29%), < 20 years (12.76%) and > 40 (6.38%). The maximum

incidence of pregnancy related dermatoses is also comparable to our results as majority of patients belong to younger age group. This higher population of younger age group can be related to early marriages of young female as a cultural trend in our country.<sup>15</sup>

In a study by Ambros-Rudolph CM, et al, 505 pregnant female were studied. The following frequency of dermatoses was observed: eczema in pregnancy (49.7%), polymorphic eruption of pregnancy (PEP) (21.6%), pemphigoid gestationis (PG) (4.2%), intrahepatic cholestasis of pregnancy (ICP) (3%), prurigo of pregnancy (0.8%), pruritic folliculitis of pregnancy (0.2%), and miscellaneous dermatoses (20.6%). The most common dermatoses observed in their study was eczema, while in our study was polymorphic eruption of pregnancy. In both studies, PG, ICP, prurigo of pregnancy and pruritic folliculitis were low.<sup>5</sup>

In a study by Kumari R, et al, a total of 607 pregnant women were included in this study. 22 (3.6%) cases of specific dermatoses of pregnancy were seen. Of these the most common was PUPPP (also known as polymorphic eruption of pregnancy) with a total of 63.6% (14/22) cases followed by 5 (22.7%) cases of pruritus gravidarum.<sup>3</sup> In their study, 49.9% pregnant women were primigravida and 51.1% were multigravida. This observation is quite comparable to our study, in which, 48% were primigravida and 52% were multigravida.<sup>3</sup>

The above discussion suggests that frequency of pruritic dermatoses varies greatly among the authors across the different parts of globe. This frequency (5.1%) may be higher than that observed in our study as most of the patients in our set up do not present to tertiary care units due to negligence, poverty and lack of facilities. This may also be due to delayed referral by quacks.

This study has some limitations. Being hospital based study and convenience sampling; one has to be careful in generalizing the result of this study to general population.

## CONCLUSION

Pruritic dermatoses of pregnancy are not uncommon among pregnant women and should be considered while evaluating pregnant women. Polymorphic eruption of pregnancy is most frequent followed by eczema of pregnancy. However, ICP is seen among a small population of the patients. However, there is a need for large, multicentre, randomized trials to know the exact figures in our setup.

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