

CLINICAL AND EPIDEMIOLOGICAL STUDY OF CUTANEOUS MANIFESTATIONS OF PREGNANCY

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ABSTRACT: BACKGROUND: Pregnancy is a period of profound immunologic, endocrine, metabolic and vascular changes which are tolerated by the body for a relatively short time. Almost all pregnant women (90%) may develop both physiologic and pathologic changes in the skin, nails, and hair which should be recognized and appropriately managed¹. Moreover, pregnancy modifies the course of a number of pre-existing dermatological conditions. **AIMS:** To find out the frequency and pattern of skin changes in pregnant women i.e. physiological skin changes, dermatoses modified by pregnancy and specific dermatoses of pregnancy. **DESIGN:** Prospective descriptive study. **METHODS AND MATERIAL:** A total of 300 pregnant women attending antenatal OPD and those admitted in wards having symptoms related to skin and mucosa, at tertiary care centre between June 2011 and November 2012 were studied. Patients not willing to give informed consent were only excluded. . Detailed history, clinical examination and relevant investigations were done. **RESULTS:** In our study age distribution of pregnancy, was in range of 16-30 years. Most of the cases belonged to 2nd and 3rd trimester (93%). Pigmentary changes were the most common non specific pregnancy dermatosis, seen in almost all cases. Of these linea nigra (87%) being the commonest. Overall 54 cases showed specific dermatoses of pregnancy. Of these the most common was prurigo of pregnancy (12%) followed by pruritus of pregnancy (4%), PUPPP (2%). Among the other dermatological conditions, scabies (16%) was the commonest. Fungal infections were seen in 14%, viral infections in 8% and bacterial infections in 5%. **CONCLUSION:** Majority of the dermatoses associated with pregnancy were observed in third trimester and among multigravidas. Pigmentary changes was the commonest physiological change observed. Prurigo of pregnancy was the commonest specific dermatosis of pregnancy. There were no cases of dermatoses modified during pregnancy like lichen planus, psoriasis, connective tissue disorders etc.

KEYWORDS : Cutaneous manifestations, Pregnancy, dermatosis

INTRODUCTION: Pregnancy is a period of profound immunologic, endocrine, metabolic and vascular changes which are tolerated by the body for a relatively short time. Almost all pregnant women (90%) may develop both physiologic and pathologic changes in the skin, nails, and hair. Moreover, pregnancy modifies the course of a number of pre-existing dermatological conditions.

Pregnancy is associated with significant and complex physiological changes like hyperpigmentation, striae, melasma etc. Most of these are due to de novo production of variety of protein and steroid hormones by fetoplacental unit as well as by the increased activity of maternal pituitary, thyroid, adrenal glands².

Certain dermatoses are specific to pregnancy or the postpartum period. These include pruritic urticarial papules and plaques of pregnancy (PUPPP), prurigo of pregnancy, pruritic folliculitis of pregnancy, pemphigoid gestationis etc.

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Pregnancy can alter the course of certain infections like candidiasis, herpes viral infections; immunological diseases like SLE, systemic sclerosis; metabolic diseases like, porphyria cutanea tarda; connective tissue disorders like Ehlers-Danlos syndrome, pseudoxanthoma elasticum etc.,³

The concerns of the patient having any of the above disorders 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. Correct diagnosis is important for the choice of treatment and for the prognosis of mother and child, because some dermatoses of pregnancy, such as pemphigoid gestationis, constitute a health risk.

MATERIALS AND METHODS: A total of 300 pregnant women irrespective of the duration of pregnancy and gravidity attending antenatal OPD and those admitted in wards having symptoms related to skin and mucosa, at tertiary care hospital between June 2011 and November 2012 were studied. Patients not willing to give informed consent for taking part in the study were excluded. Institute ethical clearance was obtained before the start of the study. Informed consent, detailed history including chief complaints related to skin, onset in relation to duration of pregnancy and associated skin / medical disorders was obtained. Complete general physical & systemic examination was done. Relevant investigations like CBP, RBS, LFT, HBsAg, VDRL, HIV 1&2, were done routinely. KOH mount & Skin biopsy were performed wherever required.

RESULTS: A total of 300 pregnant cases with complaints regarding to skin and mucous membranes were included in study. Maximum no. of patients in the study belong to 21-25yrs (45%), then followed by 16-20yrs (34%). The youngest age noticed was 16yrs and the eldest was 30 yrs with a mean age of 22.71yrs. Most of the patients were housewives constituting 45%. Among 300 patients studied 51% were primigravida. Maximum no. of patients were in Third trimester (63%). Pigmentary changes were the most common seen more in multigravida, Linea nigra was seen in 87% followed by pigmentation of areola & nipple (68%) and melasma (30%).

Among connective tissue changes striae abdomen was observed more in multigravidas (84%). Striae on the breast were observed only in 6% of multigravidas. Pedal edema was 18% followed by Gum hyperplasia (4%) were the other physiological changes observed. Prurigo of pregnancy was the most common specific dermatoses (12%) followed by Pruritus of pregnancy (4%). 11% of specific dermatoses of pregnancy is seen among multigravida. Specific dermatoses of pregnancy were seen in 2nd trimester constituting 10%. Scabies (15%) was the commonest associated dermatosis of pregnancy, followed by Acne vulgaris (13%) Pityriasis versicolor (8%). Dermatoses like lichen planus, psoriasis, connective tissue disorders etc, are not observed.

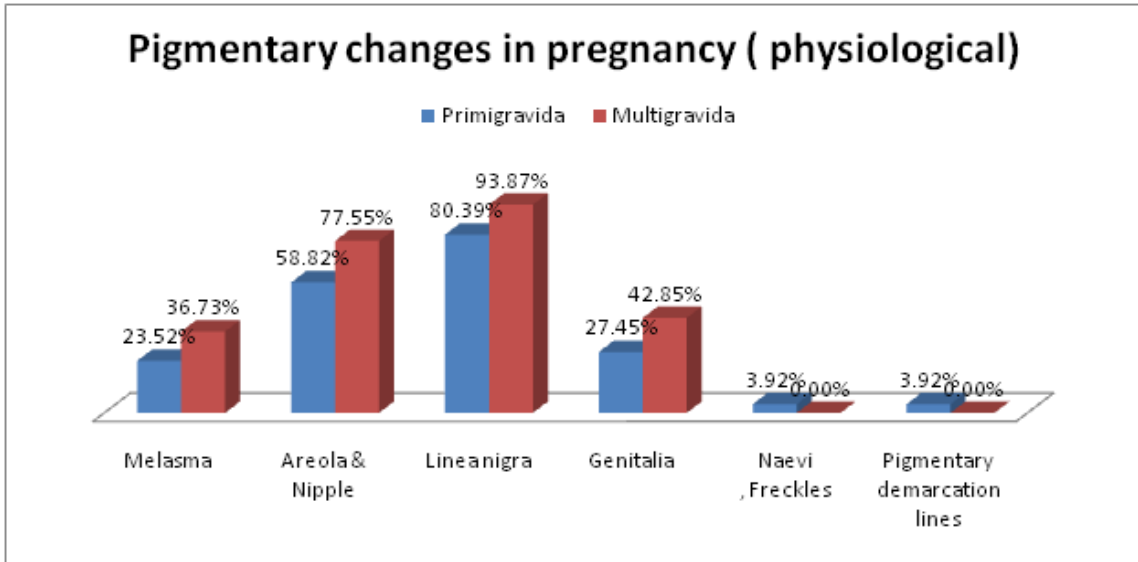


FIGURE 1

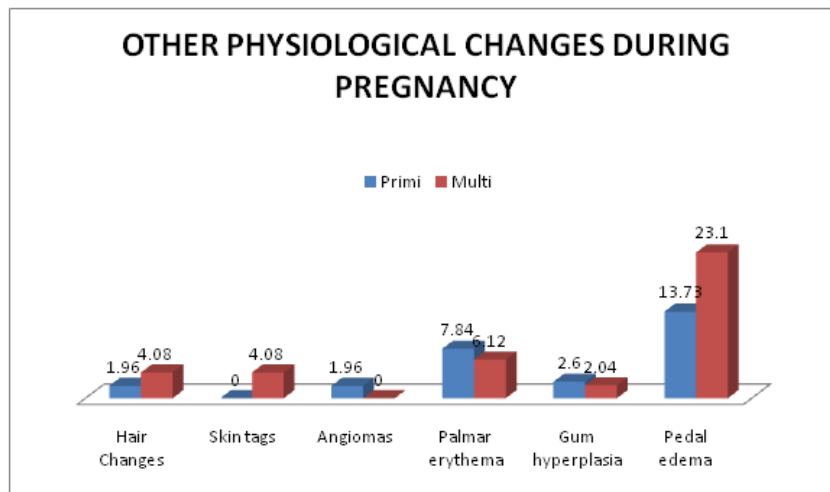


FIGURE 2

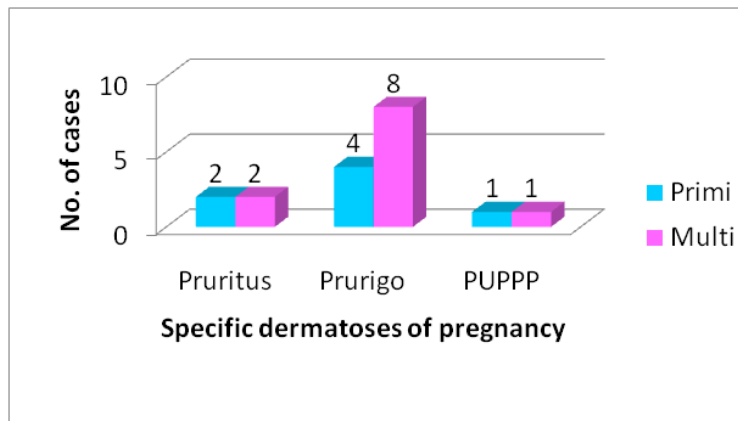


FIGURE 3 : GRAVIDITY DISTRIBUTION OF SPECIFIC DERMATOSIS

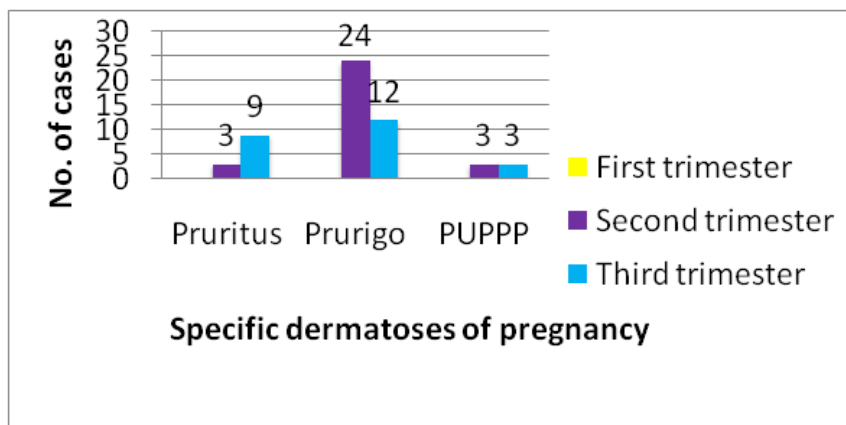


FIGURE 4 : TRIMESTER DISTRIBUTION OF SPECIFIC DERMATOSIS

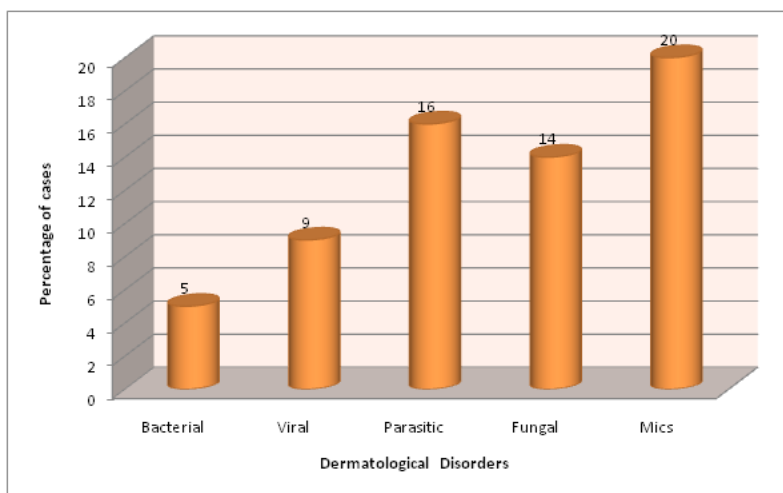


FIGURE 5: OTHER DERMATOLOGICAL DISORDERS OBSERVED IN PREGNANCY

DISCUSSION: Pregnancy is a period throughout which women undergo significant changes. Virtually all body systems are affected, including the skin. Most changes in the female body are due to hormonal and/or mechanical alterations. Intense immunological, endocrinological, metabolic and vascular alterations make pregnant women susceptible to physiological and pathological skin changes which can be specific to pregnancy or it can alter the pre-existing dermatoses. The concerns of the patient having any of the disorders may range from cosmetic appearance, to the chance of recurrence of the particular problem during a subsequent pregnancy.

In this study, physiological changes, specific dermatoses of pregnancy and associated dermatoses of pregnancy are studied in 300 cases of pregnant women. Age distribution of pregnancy, was in range of 16-30years with mean age of 22. 71years, which is similar to studies of Thappa et al⁴ and Muzaffar et al⁵. An almost equal incidence of primigravidas(51%), and multigravidas (49%) was found, observations are similar to studies of Shiva kumar et al⁶, and Thappa et al⁷. In the present study, most of the cases belonged to 2nd and 3rd trimester (93%) which is similar to earlier studies. ^{6,4}

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Pigmentary changes occurred in all cases. All of them had one or other pigmentary changes. Most common being linea nigra (87%), followed by pigmentation of areola and nipple (53%) and melasma (30%). Incidence of melasma is more in present study (30%), compared to Thappa et al⁸ (2.5%). This may be due to the fact that most of pregnant women in our study were labourers. Hence, sun exposure was an additional precipitating factor. Pigmentary demarcation lines were seen in 2 cases of primigravida, which are known to appear for the first during pregnancy. Generalized pigmentation was observed in 2 cases.

Connective tissue changes like striae was seen in 90% cases, most of which developed in multigravidae in 2nd trimester over abdomen which is in consonance with earlier studies.^{6,9} Pedal edema and gingival hyperplasia are more in our study, when compared to Thappa et al study⁴, probably because of poor nutrition status and rural background of our patients. Hair changes (telogen effluvium) was seen in 9 cases in our study.

Overall 54 cases showed specific dermatoses of pregnancy. Of these the most common was prurigo of pregnancy (12%) followed by pruritus of pregnancy (4%), PUPPP (2%). Most of the cases of Prurigo of pregnancy was seen in 2nd trimester (26 to 30 weeks) and in multigravida. This finding is consistent with study of Shiva kumar et al⁶. In all 12 cases of Pruritus of pregnancy, alkaline phosphatase levels were elevated as mentioned by other studies⁶. 6 cases of PUPPP was seen in this study, one each in primi and multigravida, in 3rd trimester. This is in concordance with the study of Shiva kumar.

Among the other dermatological conditions, scabies (16%) was the commonest. This could be explained by the fact that majority of pregnant women were from rural background and poor personal hygiene. Fungal infections were seen in 14%, viral infections in 8% and bacterial infections in 5%. Herpes labialis was reported in 6 cases, which were of recurrent in nature, noticed in the 2nd trimester. Molluscum contagiosum in 9 cases and Varicella in 6 cases, was seen in 2nd trimester. These diseases did not have any affect on fetus, as they were followed up later. Acne vulgaris was seen in 39 cases, out of these 21 had no change during pregnancy, 12 developed exacerbation and 6 of them developed acne lesions first time during pregnancy. Miliaria rubra was seen 12 cases, all of them came for consultation during summer. Other disorders include drug rash (1%) and urticaria (2%).

In present study, no cases of psoriasis, lichen planus, connective tissue disorders etc, which are supposed to be modified during pregnancy were not seen.

CONCLUSION: In our study, commonest age group was 21-25yrs of age group. Majority of the patients were house wives. Majority of the dermatoses associated with pregnancy were observed in third trimester and among multigravida. Pigmentary changes was the commonest physiological change observed. Prurigo of pregnancy was the commonest specific dermatosis of pregnancy. There were no cases of dermatoses modified during pregnancy like lichen planus, psoriasis, connective tissue disorders etc. Scabies, acne vulgaris and fungal infections were the commonest other dermatoses observed.

SUMMARY: A total of 300 pregnant women attending DVL & antenatal OPD and those admitted for delivery, were examined for dermatological problems. Most of the patients belonged to age group of 21-25years (45%) with a mean age of 22. 71years. Majority of the pregnant women were

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agricultural labourers (45%), housewives (40%) and others (15%). Most of the cases belonged to third trimester (63%) followed by second trimester (30%) and first trimester (7%). Pigmentary changes were the most common physiological change among pregnant women occurring in 100% cases, followed by connective tissue changes 90%. Dermatoses modified during pregnancy were not found in our study. Among 18 cases of specific dermatoses of pregnancy, prurigo of pregnancy was commonest (12%), followed by pruritus of pregnancy (4%), both occurring in 2nd trimester. 13 other dermatoses were observed in the study, where scabies was found to be commonest (16%), followed by fungal infections (14%), bacterial infections (5%), viral infections (9%), acne vulgaris (13%), miliaria rubra (4%), drug rash (1%), urticaria (2%).

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| Age group (yrs) | Number of cases & Percentage (%) |
|-----------------|----------------------------------|
| 16- 20 | 102(34.00) |
| 21 – 25 | 135(45.00) |
| 26 – 30 | 63(21.00) |
| TOTAL | 300 |

TABLE NO: 1: AGE DISTRIBUTION (N=300)

- Maximum no. of patients in the study belong to 21-25yrs(45%), then followed by 16-20yrs(34%). The youngest age noticed is 16yrs and the eldest is 30 yrs with a mean age of 22.71yrs.

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| Gravida | No. of cases & Percentage (%) |
|---------|-------------------------------|
| Primi | 153(51.00) |
| Multi | 147(49.00) |
| TOTAL | 300 |

TABLE NO. 2: GRAVIDITY DISTRIBUTION (N=300)

- Among 300 patients studied 51% were primigravida.

| Trimester | Number of cases & Percentage (%) |
|--------------------------|----------------------------------|
| First (1 – 3 Months) | 21(07.00) |
| Second (4 – 6 Months) | 90(30.00) |
| Third (7 – 9 Months) | 189(63.00) |
| TOTAL | 300 |

TABLE NO. 3: TRIMESTER DISTRIBUTION (N=300)

- Maximum no. of patients were in Third trimester (63%)

| Pigmentation | Primi (n=153) | Percentage (%) | Multi (n=147) | Percentage (%) |
|------------------------------|---------------|----------------|---------------|----------------|
| Melasma | 36 | 23.52 | 54 | 36.73 |
| Areola & Nipple | 90 | 58.82 | 114 | 77.55 |
| Linea nigra | 123 | 80.39 | 138 | 93.87 |
| Genitalia | 42 | 27.45 | 63 | 42.85 |
| Naevi, Freckles | 6 | 3.92 | 0 | 0 |
| Pigmentary demarcation lines | 6 | 3.92 | 0 | 0 |

TABLE NO. 4: PIGMENTARY CHANGES IN PREGNANCY (PHYSIOLOGICAL) (N =300)

- Pigmentary changes were seen more in multigravida, Linea nigra was seen in 87% followed by pigmentation of areola & nipple(68%) and melasma (30%).

| Striae | Primi (n=153) | Percentage (%) | Multi (n=147) | Percentage (%) |
|---------|---------------|----------------|---------------|----------------|
| Breast | 0 | 0 | 9 | 6 |
| Abdomen | 96 | 62.74 | 123 | 84 |

TABLE NO 5: CONNECTIVE TISSUE CHANGES IN PREGNANCY (PHYSIOLOGICAL) (N = 300)

- Striae abdomen was observed more in multigravidas (84%).
- Striae on the breast were observed only in 6% of multigravidas.

| Condition | Primi (n=153) | Percentage (%) | Multi (n=147) | Percentage (%) |
|--------------|---------------|----------------|---------------|----------------|
| Hair Changes | 3 | 1.96 | 6 | 4.08 |
| Skin tags | 0 | 0 | 6 | 4.08 |

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|-----------------|----|-------|----|------|
| Angiomas | 3 | 1.96 | 0 | 0 |
| Palmar erythema | 12 | 7.84 | 9 | 6.12 |
| Gum hyperplasia | 4 | 2.60 | 3 | 2.04 |
| Pedal edema | 21 | 13.73 | 34 | 23.1 |

TABLE NO 6: OTHER PHYSIOLOGICAL CHANGES DURING PREGNANCY (N = 300)

- Pedal edema was 18% followed by Gum hyperplasia (4%) were the other physiological changes observed.

| Dermatoses | No. of cases & Percentage (%) |
|---|-------------------------------|
| Pruritus of pregnancy | 12 (4.00) |
| Prurigo of pregnancy | 36 (12.00) |
| Polymorphic eruption of pregnancy (PUPPP) | 6 (2.00) |

TABLE NO. 7: SPECIFIC DERMATOSES OF PREGNANCY (N=300)

- Prurigo of pregnancy was common specific dermatoses (12%) followed by Pruritus of pregnancy (4%).

| | Primi (n=153) | Percentage (%) | Multi (n=147) | Percentage (%) |
|--------------------------------------|------------------|-------------------|------------------|-------------------|
| Pruritus of pregnancy | 2 | 3.92 | 2 | 8.16 |
| Prurigo of pregnancy | 4 | 13.72 | 8 | 24.48 |
| Polymorphic eruption of pregnancy | 1 | 1.96 | 1 | - |

Table No. 8: GRAVIDITY DISTRIBUTION OF SPECIFIC DERMATOSES (N=300)

- 11% of specific dermatoses of pregnancy is seen among multigravida.

| DERMATOSES | Number | Percentage (%) |
|--------------------------|--------|----------------|
| Bacterial : | | |
| Folliculitis | 15 | 5.00 |
| Viral : | | |
| Herpes simplex labialis | 6 | 2.00 |
| Herpes genitalis | 6 | 2.00 |
| Molluscum contagiosum | 9 | 3.00 |
| Varicella | 6 | 2.00 |
| Parasitic : | | |
| Scabies | 48 | 16.00 |
| Fungal | | |
| Tinea corporis | 18 | 6.00 |
| Tinea versicolor | 24 | 8.00 |

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| Oral mucosa : | | |
|------------------------|----|-------|
| Angular stomatitis | 9 | 3.00 |
| Miscellaneous : | | |
| Acne vulgaris | 39 | 13.00 |
| Miliaria | 12 | 4.00 |
| Psoriasis | - | - |
| Lichen planus | - | - |
| CTD | - | - |
| Urticaria | 6 | 2.00 |
| Drug reactions | 3 | 1.00 |

TABLE NO. 9: OTHER DERMATOLOGICAL DISORDERS OBSERVED IN PREGNANCY (N = 300)

- Scabies (15%) was the commonest associated dermatosis of pregnancy, followed by Acne vulgaris (13%) Pityriasis versicolor (8%).
- Dermatoses like lichen planus, psoriasis, connective tissue disorders etc, are not observed.

PHYSIOLOGICAL CHANGES:



Fig. 6: Linea



Fig. 7: Melasma



Fig. 8: Nipple and Areola Pigmentation



Fig. 9: Striae



Fig. 10: Gum Hyperplasia



Fig. 11: Vulval Edema

SPECIFIC DERMATOSES OF PREGNANCY:



Fig. 12: Prurigo of Pregnancy



Fig. 13: Polymorphic Eruption of Pregnancy (PUPPP)

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