

Distribution of Dermatological Changes in Pregnancy: A Tertiary Care Centre StudySanjay Pancholi¹, Nidhi Sharma², Kamna Dubey³, Priyanka Solanki^{4*}, Yusuf Kagzi⁵¹Professor, Department of D.V.L., Amaltas Institute of Medical Science, Dewas, M.P.²Demonstrator, Department of Pathology, MGM Medical College, Indore, M.P.³Senior Resident, Department of Anaesthesia, MGM Medical College, Indore, M.P.⁴Assistant Professor, Department of Pathology, MGM Medical College, Indore, M.P.⁵Medical officer, Primary health centre, Ujjain, M.P.

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Abstract:**Introduction:** Various endocrine, immunologic, metabolic and vascular changes occur during gestation, which make the woman prone to changes of the skin and its appendages. Patient concerns may range from cosmetic issue, to the chance of recurrence of the lesion during subsequent pregnancy, to its potential ill effects on the embryo/foetus in terms of morbidity and mortality.**Material & Methods:** A cross sectional study conducted on total of 550 pregnant women. Dermatological manifestations in pregnancy was categorised into three -1) Physiological skin changes, 2) Specific dermatoses of pregnancy and 3) Dermatological manifestations not specific to pregnancy.**Result:**Majority of patients were from Second trimester followed by third trimester. Primigravidae cases constitute 56% of cases. Physiological changes of pregnancy seen in 98%, specific dermatoses of pregnancy in 6.5% cases and Non-specific skin changes in pregnancy seen in 40% of cases.**Conclusion:**The specific dermatoses of pregnancy, which is uncommon entity, may cause significant stress and concern to the pregnant female and need timely medical attention. Clinicians in ANC patients should differentiate between physiological skin changes and specific dermatoses of pregnancy for timely management.**Keywords:** Gestation, Dermatoses, Physiological etc.

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Introduction

Various endocrine, immunologic, metabolic and vascular changes occur during gestation, which make the woman prone to changes of the skin and its appendages. Several genetic hormonal occurs during gestation [1,2] Physiological changes of skin are mostly reversible and benign. Changes ranges from pigmentary skin changes like linea nigra to connective tissue changes like stria gravidarum. Patient concerns may range from cosmetic issue, to the chance of recurrence of the lesion during subsequent pregnancy, to its potential ill effects on the embryo/foetus in terms of morbidity and mortality [3].

Pregnancy is the physiological condition where the course of few infections like candidiasis, herpes viral infections; diseases of immunity like SLE, Rheumatoid arthritis; metabolic diseases like, porphyria ; connective tissue disorders like Ehlers Danlos syndrome, pseudoxanthoma elasticum etc [4]. Certain conditions like intrahepatic cholestasis of pregnancy may constitute a life threatening risk to foetus. We conducted this study with aim to

determine the proportion of various gestation related dermatological conditions among antenatal women presenting to the outpatient department. And also to find various clinical parameters associated with them.

Material & Methods:

This was a cross sectional study conducted in the out-patient department of dermatology at Amaltas Institute of Medical Science, Indore. Clearance from Institutional Ethical was taken. All pregnant women sent for dermatological review from obstetric department between September 2022 and June 2023 was included in the study.

Patients of any duration of gestation and gravidity were included. Informed consent was obtained before the interview and clinical examination. A total of 550 pregnant women were included in the study. History including demographic data, chief presenting complaints related to skin, presence of pruritis, other skin lesions, onset in relation to duration of pregnancy, any vaginal discharge, any

relevant family history of similar lesions, exacerbating factors, associated medical or skin disorders etc. was elicited and recorded. Complete examination was done in all cases included in the study was done.

If any dermatoses of pregnancy were present, the morphology of lesions, their distribution and sites involved were studied. Required systemic examination was performed. Previous lab investigations were studied. If any pre-existing skin disease was present, any evidence of its exacerbation or remission was recorded.

Required investigations were done to confirm the diagnosis if required. Bedside laboratory procedures like KOH mount, Tzanck smear and Gram's stain were carried out. To confirm the diagnosis, skin biopsy and DIF were done in a few cases. In all cases with history of pruritus related to specific disorders of pregnancy, liver function tests were done. Screening for syphilis and HIV was done in all the cases. Examination of the 'contact' was done in all cases of sexually transmitted disease. Results were tabulated and analysed. Dermatological manifestations in pregnancy was categorised into three -1) Physiological skin changes, 2) Specific dermatoses of pregnancy and 3) Dermatological manifestations not specific to pregnancy (incidental dermatological disorders in pregnancy).

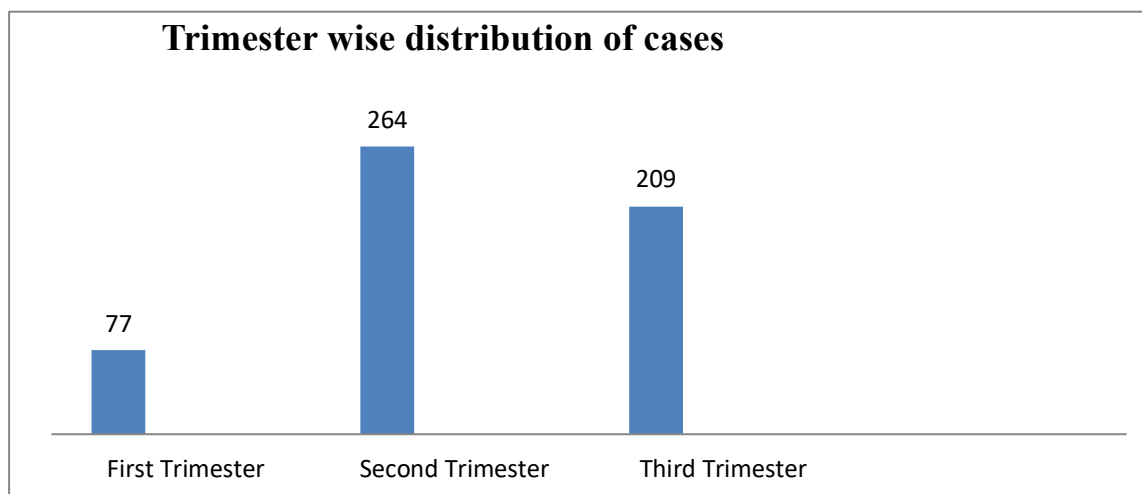
Results:

Of total 550 cases, 264 were between 19-25 years of age. Majority of patients were from Second trimester followed by third trimester. Primigravidae cases constitute 56% of cases. We distributed skin lesions into three broader categories- Physiological changes of pregnancy (seen in 98%), specific dermatoses of pregnancy (in 6.5% cases) and Non-specific skin changes in pregnancy seen in 40% of cases. Among physiological changes Jacquemier-Chadwick sign, Goodell's sign are most common finding followed by Linea nigra areolar hyperpigmentation, Striae gravidarum, Montgomery tubercles, non-pitting edema, melasma, LSCS scar hyperpigmentation and others. Out of 550 cases only 36 cases show specific dermatoses, among them Pruritic urticarial papules and plaques of pregnancy (PUPPP) in 23 cases, Pruritus gravidarum in 09 cases, Pemphigoid gestationis in 02 cases and one case each of Prurigo gestationis of Besnier and Pruritic folliculitis. Among Non-specific dermatoses of pregnancy infective lesions are most common.

Lesions of Dermatophytosis were most common followed by Candidal vaginitis, Varicella, Molluscum contagiosum, Scabies and others. Lesions of Herpes labialis, Herpes zoster, Verruca vulgaris and Hansen reported lesion in few cases. Acne vulgaris lesions were seen in 10% of cases.

Table 1: Distribution of patients according to age-

Age (years)	Number of cases	Percentage %
19-25	264	48%
26-30	182	33%
31-35	60	11%
36-40	33	06%
41-45	11	02%
	550	100%



Graph 1: Trimester wise distribution of cases

Table 2: Distribution of cutaneous manifestations in pregnancy

Spectrum of cutaneous manifestations in pregnancy	No. of cases(Out of 550 cases)	Percentage %
Physiological changes	539	98%
Specific dermatoses of pregnancy	36	6.5%
Dermatoses not specific to pregnancy	220	40%

Table 3: Distribution of physiological changes

Physiological changes	Number of Cases (539)	Percentage %
Linea nigra	463	86%
Areolar hyperpigmentation	410	76%
Melasma	86	16%
LSCS scar pigmentation	17	3.2%
Pigmentary demarcation line	6	1.0%
Striae gravidarum	419	77.7%
Montgomery's tubercles	194	36%
Miliaria	10	1.8%
Non pitting edema of feet	54	10%
Palmar erythema	32	6%
Jacquemier-Chadwick sign	518	96%
Goodell's sign	528	98%
Gingivitis	11	2%
Brittle nails	4	0.8%

Table 4: Specific disorders of pregnancy

Specific dermatoses	Number of cases (out of 36)	Percentage %
Pruritic urticarial papules and plaques of pregnancy (PUPPP)	23	63.8%
Pruritus gravidarum	09	25.0%
Pemphigoid gestationis	02	5.5%
Prurigo gestationis of Besnier	01	2.7%
Pruritic folliculitis	01	2.7%

Table 5: Distribution of Non-specific dermatoses of pregnancy

Non-specific dermatoses	Number of cases (out of 220)	Percentage %
Dermatophytosis	35	16%
Candidal vaginitis	9	4.1%
Scabies	5	2.3%
Varicella	9	4.0%
Molluscum contagiosum	8	3.6%
Herpes labialis	2	1%
Herpes zoster	1	0.5%
Verruca vulgaris	1	0.5%
Hansen's Disease	1	0.5%
Acne vulgaris	22	10%

Discussion

Total 550 cases were studied in our study. Majority of the patients (48%) were in the age group of 19-25 years followed by 33% in the age group of 26-30 year, findings are similar to study by Chakraborty et al [5] where patients of age group 20-25 constitute 55%. Mean age of cases in our study was 28.8 years, which correlated with studies by Nair et al who reported the mean age to be of 27.3 years with (range: 19-42 years). [6] The age wise distribution was however found to be slightly lower in Kumari et al, Hassan et al and Nair et al. [6,7,8] Kumari et al observed age of patients

ranged from 18 to 36 years with the mean age being 23 years. Hassan et al found the mean age to be of 24 years (range: 17-39 years).

We observed 308 (56%) patients were primigravidae whereas, 242 (44%) patients were multigravidae, which were in accordance with Kumari et al, Hassan et al, Chakraborty et al and Nair et al.[5-8] Kumari et al, found among 607 women, primigravidae accounted for 303 (49.9%) of the patients whereas 304 (51.1%) were multigravidae. Whereas Hassan et al, found out of a total of 650 women 272 (42%) were primigravidae, while 378 (58%) were multigravidae.6 The study

by Nair et al on factors influencing pregnancy dermatoses, of a total of 175 antenatal women, 95 were primigravidae (54.3%) and 80 (45.7%) were multigravidae.

In our study, 77 (14%) patients belonged to first trimester, while 264 (48%) and 209 (38%) patients were in second and third trimester of pregnancy respectively, as seen in study conducted by Kumari et al. and Chakraborty et al.

Physiological changes in skin were present in 539 (98%) of the patients, specific dermatoses of pregnancy were observed in 36 (6.5%) of the patients and dermatoses not specific to pregnancy were documented in 220 (40%) patients, which corroborated with studies by Kumari et al, Hassan et al and Chakraborty et al. [5,6,7,8]. Study conducted by Kumari et al, of 607 pregnant women, physiological skin changes were seen in all cases, specific dermatoses of pregnancy were present in 22 (3.62%) of their cases whereas dermatoses not specific to pregnancy were reported in 125 (20.59%) of their patients [7]. Hassan et al, found all patients had physiological skin changes, specific dermatoses of pregnancy in 32 (4.92%) patients whereas dermatoses not specific to pregnancy were observed in 48 (7.38%) of their patients [8].

Common physiological changes are pigmentary alterations, stretch marks, vascular spiders and edema feet .[10] I The most common physiological changes seen in pregnancy were mucosal changes which included Goodell's sign in 528 patients(98%) followed by Chadwick sign (96%) and gingivitis (2%). In the study by Kumari et al, Jacquemier-Chadwick sign was reported in all (100%) patients thus corroborating the findings of our study whereas gingivitis was reported in 1.5% of the patients.5

Most common pigmentary change in our study was found to be linea nigra, in 463 (86%) of the cases followed by areolar hyperpigmentation in 410 cases (76%). Melasma was reported in 86 (16%) patients. and pigmentary demarcation lines in 6 (1%) patients. In the study by Kumari et al, the commonest pigmentary change reported was linea nigra (91.4%), which corroborates our study findings, followed by areolar hyperpigmentation (78.4%), however the incidence of melasma (2.5%) was much lower than the present study.5 The possible reason for this difference in prevalence of melasma in our study and other similar studies on pregnant women could be due to difference in the environmental factors and skin phototypes.

In our study striae gravidarum was reported in 419 (77.7%) patients. This finding was consistent with Kumari et al and Rathore et al who reported striae gravidarum in (79.7%) and (64.8%) of their

patients respectively.[5-9] Most common glandular change observed was montgomery's tubercles in 194 (36%) patients followed by miliaria in 15(3.7%) patients. In study by Kumari et al montgomery's tubercles was recorded in 36.2% of patients and miliaria 1.8% of the patients [7], Rathore et al found similar results [9].

The common vascular changes recorded in our study were non pitting edema of feet in 54 (10%) cases, followed by palmar erythema 32 (6%), these results were in similar with Rathore et al, and Kumari et al. [7,9] The prevalence of nail changes in our study were similar to that reported by Rathore et al who reported nail changes in 2.1% of their patients with brittle nails in 0.8% [9].

In our study pregnancy specific dermatoses were observed in 36 (6.5%) patients. The most common specific dermatoses of pregnancy seen in our study was Pruritic urticarial papules and plaques of pregnancy (PUPPP) in 23 (64% of specific dermatoses) followed by Pruritus gravidarum in 09 cases (8%), Pemphigoid gestationis in two, and one case each of Prurigo gestationis of Besnier & Pruritic folliculitis, results are similar to study by Hassan et al.

We reported 35 cases of Dermatophytosis (16%), 09 (4.1%) patients with Candidal vaginitis, the results are similar to study done by Kumari et al where it was reported in 2.8% of the patients. Five cases (2.1%) of scabies infestation were reported which is similar to the findings by Hassan et al who reported scabies infection in 2% of the patients. Results of our study differed from those by Kumari et al, and Hassan et al, as they did not find any varicella case in pregnancy, in contrast to 09 patients (4%) reported by us. Majority of the patients in our study belonged to poor low socioeconomic strata and live under conditions of low hygiene, overcrowding, this coupled with the harsh winter in Malwa region of central India may be responsible for the high incidence of varicella observed in the present study.

We observed 22 patients (10%) with acne vulgaris in our study, which was similar to that reported by Rathore et al (8.4%).

Conclusion

Dermatological findings are common in gestation period. Mostly they are physiological changes and do not need any management. The specific dermatoses of pregnancy, which is uncommon entity, may cause significant stress and concern to the pregnant female and need timely medical attention. Clinicians in ANC patients should differentiate between physiological skin changes and specific dermatoses of pregnancy for timely management. As pregnancy is a state of immunosuppression so patients are more prone for

infection. Also demographical and environmental and personal factors of patients contribute to above causes.

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