

Clinical Study of Cutaneous Manifestations in Pregnancy

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Abstract: 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 mechanical alterations. During pregnancy profound immunologic, metabolic, endocrine and vascular changes occur, that are responsible for the changes of the skin and its appendages, both physiologic and pathologic. The main aim of our study was to evaluate the incidence of physiological and pathological skin changes in pregnancy. This study included 400 pregnant women attending the DVL OPD, Obstetrics and Gynaecology Department of a ACSR Govt. General hospital, Nellore, Andhra Pradesh, India, with skin problems. The present study was conducted from August 2017 to December 2018 over a period of 16 months. Detailed history elicitation and complete physical and dermatological examination were performed. Cutaneous changes were seen in a majority of patients, of which physiological changes were the most common (100%). The most common physiological changes were pigmentary changes (692 cases). In Pigmentary changes Linea nigra was most common in 242 (60.5%) cases, Secondary aerola in 195 (48.75%) cases, Hyperpigmentation in 132 (33%) cases, Melasma in 124 (31%) cases, Pigmentary demarcation lines in 9 (2.25%) cases, Melanocytic Nevus in one (0.25%) case. Second most common physiological change noted was Striae gravidarum in 336 (84%) cases. Third most common physiological change noted was vascular changes in 110 (27.5%) cases. Other miscellaneous common physiological changes noted were Glandular activity in 48 (12%) cases. Hair changes were seen in 10 (2.5%) cases, Nail changes in 9 (2.25%) cases, Mucous membrane changes in 67 (16.75%) cases, Pruritus in 20 (5%) cases, Molluscum fibrosum gravidarum in 8 (2%) cases, Acanthosis Nigricans in 11 (2.75%) cases, Xerosis in 6 (1.5%) cases, Urticaria in 6 (1.5%) cases, out of the total 1323.

Key words: Cutaneous, Dermatophytes, infections, Gravidarum, Pregnancy etc.

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I. Introduction

Pregnancy is a period throughout which women undergo significant changes. The intense immunological, endocrinal, metabolic and vascular alterations may predispose the pregnant women to increased susceptibility to physiological and pathological skin changes [1]. Pregnancy related skin changes can be classified as physiological changes, specific dermatoses and pregnancy related dermatoses. Along with this the Pre-existence skin conditions may either improve or exacerbate in pregnancy, due to immunological changes in pregnancy [2]. Decreased Cell mediated immunity during pregnancy leads to increase in severity and frequency of various skin infections. Physiological changes in pregnancy are based on the extent of the cutaneous involvement during pregnancy and the stigma experienced by the patients. The fact that many of these alterations are described as physiological which does not minimize discomfort for the patients. Pigmentary changes are extremely common and affect up to 90% of pregnant women [3]. Patients are more concern about skin disorders ranging from cosmetic appearance to recurrence of the skin problems during pregnancy which are specific and its potential effects on fetus in terms of morbidity and mortality, the investigations and categories of skin disorders, the choice of the treatment and for prognosis of mother and fetus [4]. Because some dermatoses of pregnancy like ICP and pemphigoid gestation is constitute health including prematurity, fetal distress or even stillbirth [5]. Hence the awareness and recognition of these skin conditions and familiarity with their treatment and outcome are important [6]. Therefore the present work was undertaken for the early diagnosis and prompt treatment which was essential for improving maternal and fetal outcome and to minimize their morbidity.

II. Materials and Methods

This study included 400 pregnant women attending the DVL OPD, Obstetrics and Gynaecology Department of a ACSR Govt. General hospital, Nellore, Andhra Pradesh, India. The present study was conducted from August 2017 to December 2018 over a period of 16 months. The age group of patients ranges from 18 to 39 years. Ethical committee clearance and informed consent from patients was taken. Detailed

history elicitation and complete physical and dermatological examination were performed. Cases were subjected to investigations as per requirement. Gram staining was done for folliculitis and other bacterial infections. KOH test (10%) was done to demonstrate fungal hyphae and yeast cells. Scabies mite demonstration was done with the help of skin scraping. Tzanck smear was done from the vesicles of infection in 11 cases which showed multinucleated giant cells. Ultrasound color Doppler study was done on a single pregnant women who was diagnosed as arterio venous malformation. Hemogram was done for all anemic pregnant women found microcytic hypochromic anemia commonly seen.

III. Results

Age of the patients ranged from 18 years to 39 years, with average age being 23.54 years \pm SD 4.33. Majority of the sample belong to 21-25 years. In the present study among the 400 pregnant women the incidence of skin changes in primi gravida were 198 (49.5%) and multi gravida were 202 (50.5%)[7]. The present study revealed that physiological changes are the most common skin changes in pregnancy.



Fig-1: Linea Nigra



Fig-2: Striae Gravidarum



Fig-3 Secondary areola



Fig-4 Non pitting Edema

In this study among the 400 pregnant women the incidence of skin changes observed were as follows: 1323 physiological entities, nonspecific dermatoses of pregnancy were 134 and 26 cases of specific dermatoses of pregnancy [8-11]. The most common physiological changes were pigmentary changes (692 cases). In Pigmentary changes Linea nigra was most common in 242 (60.5%) cases, Secondary aerola in 195 (48.75%) cases, Hyperpigmentation in 132 (33%) cases, Melasma in 124 (31%) cases, Pigmentary demarcation lines in 9 (2.25%) cases, Melanocytic Nevus in one (0.25%) case. Second most common physiological change noted was Striae gravidarum in 336 (84%) cases. Third most common physiological change noted was vascular changes in 110 (27.5%) cases. Other miscellaneous common physiological changes noted was Glandular activity in 48 (12%) cases. Hair changes were seen in 10 (2.5%) cases, Nail changes in 9 (2.25%) cases, Mucous membrane changes in 67 (16.75%) cases, Pruritus in 20 (5%) cases, Molluscum fibrosum gravidum in 8 (2%) cases, Acanthosis Nigricans in 11 (2.75%) cases, Xerosis in 6 (1.5%) cases, Urticaria in 6 (1.5%) cases, out of the total 1323[12-14].

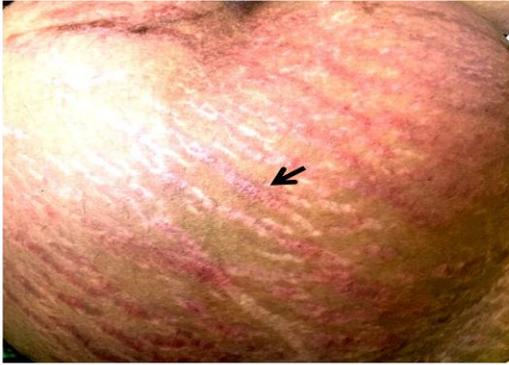


Fig-5 Polymorphic eruptions of pregnancy



Fig-6 Pruritic folliculitis of pregnancy



Fig-7 Herpes Progenitalis



Fig-8 Molluscum Contagiosum



Fig-9 Varicella zoster viral infection



Fig-10 Herpes Labialis



Fig-11 Acne vulgaris



Fig-12 Tinea corporis

IV. Discussion

IV. 1. Age

In our present study, patients age group ranges from 18 to 39 years, with an average age being 23.54 years. 123 cases (30.75%) were less than 20 years, 163 cases (40.75%), were within the range of 21-25 years, 90 cases (22.5%), were within the range of 26-30 years and rest of 24 cases were less than the age of 40 years. In Rathore et al. study the age range of patients was 18 to 40 years (mean 26.42)⁶⁹, in Kumari et al. study the age range was 18 to 36 years with a mean of 23 years⁷⁰, in Iffat Hassan et al. study the age range of patients was 17 to 39 years (mean 24 year) ⁷¹ and Sharath kumar et al. study the mean age was 22.7 years⁷² all are similar to this study^[15-18].

IV. 2. Gestational age

In this study earliest cutaneous change was noted at 16 weeks of gestation and on the other end as late as 38 weeks of the antenatal period, with the mean at 30.2 weeks of gestation. Most of them presented in the third trimester (225 cases, 63.5%) and in second trimester (145 cases, 36.5%). Because majority of the women in the studied area belongs to rural, where this study was conducted, women start attending the antenatal clinic after first trimester. In Shiva kumar et al. third trimester attendance accounted for 105 cases (61.76%) and second trimester for 46 cases (27.5%) [14] which were nearer to this study. In Rathore et al.^[15] study 53.85% cases were in the third and 34.00% in the second trimester of pregnancy⁶⁹. Kumari et al. considered all pregnant women irrespective of gravida and gestational age of pregnancy during the course of her descriptive study^[13]. In Sharath kumar et al.^[18] study most of cases belonged to 2nd and 3rd trimester (93%)^[19] which is similar to the present study.

IV. 3. Gravida

In the present study 198 cases (49.5%) were primigravida and 202 (50.5%) were multigravidas. Among the multigravidas, 145 cases(36.25%)were gravida two, 54 cases(13.5%) were gravid three, followed by three cases (0.75%) who were gravida four. An almost equal incidences of primigravida and multigravida was found in above observations [11,12, 14] which were similar to present study. In the present study the most common cutaneous manifestations in pregnancy observed were physiological skin changes followed by coincidental dermatological disorders affected in pregnancy (134) and specific dermatoses (26) of pregnancy.

IV. 4. Physiological skin changes in pregnancy

In the present study the data reveals that physiological changes are the most common skin changes in pregnancy as mentioned in other studies like Kumari et al. Sharath kumar et al., and Iffat Hassan et al.^[17,18].

IV. 4.1. Pigmentary skin changes

Among the 400 pregnant females, skin changes commonly observed were Pigmentary changes 692 entities .In the pigmentary changes the most common being Linea nigra 242 cases (60.5%), followed by pigmentation of areola and nipple (Secondary aerola) 194 cases (48.75%), 122 cases of Hyperpigmentation (30.5%) and 124 cases (31%) of Melasma were observed. The Pigmentary demarcation lines 9 cases (2.25%) and one case of Melanocytic Nevus was observed. In the present study most common pigmentary change was Melasma in 124 (31%) cases. It can be sub-classified depending upon the site of pigmentation as centrofacial, malar and mandibular. The centrofacial pattern of melasma is the most common type(like other studies)^[11-13] noted in 72 (62.9%) cases, followed by malar in 42(33.8%) cases and mandibular pattern in 4(3.3%) cases.

IV. 4.2. Hyper pigmentation

The pattern of hyperpigmentation were probably due to regional differences in the number of melanocytes in the skin and stimulating effect of oestrogen and progesterone on the melanocyte stimulating hormone^[14]. Pigmentary changes were seen more in multigravida. Among primigravida Linea nigra (64%) was the first most common pigmentary change followed by secondary areola (47%) and hyper pigmentation (29.64%). In multigravida most common was linea nigra followed by secondary areola and melasma. Melasma mostly seen in multigravida (36.8%) than in primigravida (25%). Pigmentary demarcation lines commonly seen in primigravida than multigravida (0.5%). The pigmentary changes in the present study similar to the study of Kumari et al, Sharath kumar et al. and Iffat Hassan et al. [16-18]. Among the Pigmentary changes linea nigra was most commonly seen. The second most common pigmentary change secondary areola was followed by melasma [16, 17, 18].

IV. 4.3. Striae Gravidarum

In this study striae were observed in 336 cases (84%), they were distributed over the abdomen in 223 cases (66.36%), both over the abdomen and thighs in 33 cases (9.82%) and all three sites including the

abdomen, thigh and breast regions seen in 8 cases (2.38%). Including all the above three sites and other sites seen in 72 cases (21.42%). Striae gravidarum commonly seen in primi gravida (174 cases) than in multi gravida (158 cases). The striae over the abdomen were commonly seen in both primi and multi gravida followed by thigh, breast and other regions. In a study of Kumari et al. 79.7% cases of striae and in study of. Shiva kumar et al. found 66.47% of their cases developed striae Gravidarum[16, 19]. These studies are close to the present study.

IV. 4.4. Vascular changes

The study of V.Vora.et al. stated that the vascular changes result from distention, instability and proliferation of vessels and regress in postpartum. Non pitting edema of legs, eyelids, face and hands is present in about 50% of women during the third trimester⁷⁸. Vascular changes seen in present study include non pitting edema of feet in 84 (12%) cases and Purpura in 3 cases (0.75%). Spider Angiomas on the chest were seen in 3 cases (0.75%) and Varicosities seen in 11 cases (2.75%). Of these cases, six cases were hemorrhoidal, four cases were saphenous and vulval varicosities were seen in one case. Further, Telangiectasia seen in 4 cases (1%)and Palmar erythema seen in 5 cases (1.25%). Total vascular changes are 110 cases (27.5%). In the study of V. Vora et al. Vascular spider (spider agniomas) appeared in67% of white and 11% of black women [19-20].

IV. 4.5. Miscellaneous physiological changes

Other common miscellaneous physiological changes noted were Glandular activity seen in 48 cases (12%). Hair changes seen in cases 10 (2.5%), Nail changes 9 cases (2.25%), Mucous membrane changes 67 cases (16.75%), Prurtius 20 cases (5%), Molluscum fibrosum gravidum 8 cases (2%), Acanthosis Nigricans cases 11 (2.75%), Xerosis 6 cases (1.5%), Urticaria 6 cases (1.5%) the total physiological changes were1323.

IV. 4.6. Glandular activity

In the present study Miliaria seen in 32 cases and Acne vulgaris in 16 cases. In study of Sharath kumar et al[18] observed 12 cases of Miliaria rubra and 39 cases of Acne vulgaris In the study of Annapurna Kande et al.[25] Miliaria was seen in two cases and Acne vulgaris in 30 cases³⁵. In study of Kumari et al. Miliaria was seen in 10 cases⁷⁰. In this study Miliaria observed more in number because all of them mostly came for consultation during summer. In Shivakumar et al. Glandular activity seen [16] in 13.76% similar to the present study.

IV. 4.7. Hair changes: cases 10 (2.5%)

In study of Rita V. Vora et al. [24] showed a mild to moderate hirsutism and hypertrichosis during pregnancy there is an increased proportion of anagen growing hairs due to estrogen and androgen stimulation in the second half of pregnancy. In study of Iffat Hassan et al. 1.8% cases of Hair changes⁷¹ were seen and study of Kumari et al 2.6% cases of Hair changes⁷⁰ observed which were similar to the present study [16, 17].

IV. 4.8. Mucous membrane changes: 67 cases (16.75%).

In the present study 67 (16.75%) pregnant women showed that the changes like gingivitis in 32 (8%) cases and angular cheilitis 35(8.6%) cases. Edema and hyperemia due to hormonal changes as well as local irritation and nutritional deficiencies may be responsible. Gingivitis was seen in nine (1.48%) out of 607 pregnant women in study of Kumari et al.[16].

IV. 4.9. Nail changes: 9 cases (2.25%)

Nail changes in pregnancy like transverse ridging, nail brittleness, leuconychia, distal onycholysis were observed in present study in 9 cases (2.25%). The study of Ayse Neslin Akkoca et al. showed 10 cases (2.5%) had nail changes that occur during pregnancy like Nail breakage and transverse ridging which were very common⁷⁷ and similar to present study.

IV. 4.10. Other changes

In the present study 6 (1.5%) cases of urticaria, xerosis 6 cases (1.5%) and one cases (0.25%) of Arterio Venous Malformation, 11 (2.75%) cases of Acanthosis Nigricans were noted. Molluscum Fibrosum Gravidarum seen in 8 cases (2%). In the study of Annapurna Kande et al. 5% of cases of urticaria³⁵, in study of Sharath kumar et al. 2% of urticaria⁷², 1.5% Of cases of urticaria in study of Christina M. Ambros-Rudolph et al.⁶⁴ which were similar to the present study. In study of Kumari et al. 15 cases of Molluscum Fibrosum Gravidarum nearer to present study [16-18, 25].

IV. 5. Pruritus

Pruritus (with or without any specific cause) was the most common primary symptom observed in 226(56.5%) cases. Among the 226(56.5%) cases of pruritus, those who had primary cause mainly consist of infections and infestations (fungal, bacterial folliculitis & scabies) and pregnancy specific dermatoses 6.5%. Other causes are xerosis 1.5%, seborrheicdermatitis 2%, urticaria 1.5% and anemia 12.5% cases. However in five percent (20 cases), the pruritus could not be ascribed to any cause and hence form the part of physiological entity observed in this study [13, 14, 26].

IV. 6. Coincidental dermatological disorders affected in Pregnancy

In the present study under this category the main constituents were the infections in 117 cases, allergic contact dermatitis in 5 cases, SLE in two cases, keloids in two cases and Seborrheic Dermatitis in 8 cases. Bacterial infections manifesting as folliculitis were noted in 8 cases. Pityriasis versicolor was noticed in 17 cases, tinea corporis in 26 cases, tinea pedis in 2 cases, vaginal candidiasis in 28, oral candidiasis in 3, Herpes Labialis in 4 cases and Herpes Progenitalis in 5 cases, Condyloma acuminata in 7 cases, Varicella Zoster in 2 cases Molluscum Contagiosum in 2 cases, Scabies in 6 cases and Trichomoniasis cases in 4 cases. Candidiasis (vulvo-vaginitis) was by far the commonest infection with a 7% percent incidence and the commonest cause of white discharge per vagina. The total number of pregnant women with specific dermatoses of pregnancy were 26 cases. Of this categories the maximum cases (16 cases) were reported under the heading of Atopic Eruption of Pregnancy, which is contributed by prurigo of pregnancy (8 cases) and eczema in pregnancy (6 cases) and Pruritic folliculitis of Pregnancy (1 case). The incidence of polymorphic eruption of pregnancy was 11 cases (2.75%). All the affected patients were primigravida with gestational ages ranging from 7th to 9th months. In total 26 cases of specific dermatoses of pregnancy 23 cases in primigravida and three cases in multigravida were observed. Out of these 26 cases 24 cases in 3rd trimester and two cases in 2nd trimester were observed [24-27].

V. Conclusions

In the present study the most common cutaneous manifestations in pregnancy observed were physiological skin changes in pregnancy, followed by coincidental dermatological disorders and specific dermatoses of pregnancy. Among physiological changes pigmentary changes were observed most commonly (100%) seen. This study reveals that physiological changes like striae Gravidarum, linea nigra and melasma are the common entities. Coincidental dermatological disorders during the course of pregnancy like tinea corporis, Pityriasis versicolor, candidiasis, HSV and HPV infections, allergic contact dermatitis and acne are also important for timely treatment and to prevent spread and transmission to the neonate. The specific dermatoses of pregnancy in this study showed eczema in pregnancy, prurigo of pregnancy, pruritic folliculitis of pregnancy and polymorphic eruption of pregnancy. Timely treatment for such conditions will prevent morbidity during the antenatal period.

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