Study of Cutaneous manifestation of pregnancy in a Tertiary Care Hospital, South India

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Abstract

Background: Pregnancy is a period of profound immunologic, endocrine, metabolic and vascular changes, which makes them venerable for physiological and pathological changes in skin and its appendages. Dermatoses unique to pregnancy are important to recognize for the clinician as they carry considerable morbidity for pregnant mothers and in some instances constitute a risk to the fetus.

Objectives: To determine the frequency and pattern of dermatoses in pregnancy.

Methods: A total of 600 pregnant women attending out- patient department of dermatology and obstetrics at tertiary care hospital having symptoms related to skin, nail and its appendages between June 2014 and July 2015 were studied. Detailed history, clinical examination and relevant investigations were performed. The data was analyzed by using SPSS software version 16.

Results: Age of patients ranged from 18 years to 44 years. Primigravida group accounted for about 396 (66%). Commonest physiological changes noted was Striae distensae 288 (48%) followed by Linea nigra 270 (45%), Gingival hyperemia/ gingivitis was seen 20 (3.33%), Pigmentary changes 198 (33%), Melasma 192 (32%). Polymorphic eruption of pregnancy (PEP) 31 (5.6%) was the commonest specific dermatosis followed by Atopic eruption of pregnancy (AEP) 12(2%) Pemphigoid Gestations (PG) 1 (0.16%) and Intrahepatic Cholestasis Pregnancy (ICP) 1 (0.16%) Fungal infection 40 (6.6%) was the commonest infection, followed by bacterial infections 12(2%). 4 patients showed skin scraping positive for Scabies mite.

Conclusion: Physiological dematoses are common in Primigravida compared to multigravida. Specific dermatoses of pregnancy are also not uncommon, can be a source of significant distress to the patients which warrants specific care in turn influences the maternal and fetal outcome. The awareness, recognition of these skin conditions, familiarity with their treatment, antepartum surveillance, early diagnosis and prompt treatment is essential for improving maternal and fetal prognosis thus minimizes their morbidity.

Keywords: Pregnancy, Cutaneous manifestations**,** Dermatoses, Fungal infection

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Introduction

Pregnancy is a state of complex endocrinological, immunological, metabolic and vascular changes which can lead to numerous skin changes. Dermatoses of pregnancy are defined as disorders that are limited to pregnant and puerperal women. Skin changes occur in about 90% pregnant women in one form or the other[1]. Maternal skin and appendages undergo various physiological (hormonal) changes during pregnancy, as do other organs of the body which are well tolerated.

Physiological skin changes in pregnancy include changes in pigmentation, alterations of the connective tissue, vascular system as well as changes in hair and nails[2]. Some skin eruptions are specific to pregnancy and are called pregnancy specific dermatosis (PSDs) which are common in third trimester. Most recent rationalized classification of PSDs has been proposed by Ambros-Rudolph et al in 2006[3] which includes pemphigoid gestations (PG), polymorphic eruption of pregnancy (PEP), intrahepatic cholestasis of pregnancy (ICP) and atropic eruption of pregnancy (AEP). While AEP starts significantly earlier, PEP, PG and ICP presents in late pregnancy. The uncertain dermatoses of pregnancy are linear:

1. IgM disease of pregnancy
2. papular dermatitis of pregnancy
3. pustular psorisis of pregnancy
4. auto-immune progesterone dermatitis of pregnancy

Although most of these dermatoses are benign and resolved in post-partum period, few of the specific dermatosis are associated with increased risk of prematurity, intrapartal fetal distress (22%-33%), premature delivery (19%-60%) and still births (1%-2%)[4,5,6,7]. Hence the awareness, recognition of these skin conditions, familiarity with their treatment, antepartum surveillance, early diagnosis and prompt treatment is essential for improving maternal and fetal prognosis thus minimizes their morbidity.

The present study is undertaken to note the various cutaneous manifestations in pregnancy and to classify them as non-specific and specific dermatoses of pregnancy.

Materials and Methods

A total of 600 pregnant females attending out-patient department of dermatology and obstetrics having symptoms related to skin, nail, hair and its appendages at tertiary care hospital from June 2014 to May 2015 were studied. Detailed history, clinical examination was carried out in the form of general physical examination, cutaneous examination including mucosa, Hair and Nails. Per speculum examination was carried out whenever required. Cases were subjected to investigation as per requirement. Routine investigation was done for all patients. Relevant bedside laboratory procedure such as Gram staining, KOH mount, Skin scrapings to demonstrate Itch mite and Tzanck smears were carried out. Specific investigation like skin biopsy was done after taking consent. Pregnant women were classified according to age, trimester and parity.

Inclusion Criteria: Pregnant women with skin lesions, either pre-existing or recently developed in pregency.

Exclusion Criteria: Patients having other underlying or renal problems. Patients not willing to give informed consent were also excluded.

The data was analyzed by using the statistical package for social sciences (SPSS) version 16. Relevant descriptive statistics, frequency and percentage were employed for categorical variables like dermatoses. Mean and standard deviation were computed for quantitative variables. No statistical test of significance was applicable for the descriptive study.

Results

A total of 600 pregnant females were included in the study. Age of patients ranged from 18 years to 44 years with maximum number of pregnant females 242(40.33%) in the age group of 35 to 44 years [Table 1]. 126(21%) patients were in first Trimester, 166(27.66%) were in second Trimester and 308(51.33%) were in third Trimester. Primigravida were 396(66%) and multigravida were 204(44%) [Table 2].

Commonest physiological changes noted was Striae distensae 288(48%) followed by Linea nigra 270(45%), Gingival hyperemia/ gingivitis was seen 20 (3.33%), Pigmentary changes 198(33%), Melasma 192(32%)[Table 3]. In some of the pregnant females there was more than one clinical changes or manifestations.

Polymorphic eruption of pregnancy (PEP) 31(5.6%) was the commonest specific dermatosis followed by Atopic eruption of pregnancy (AEP) 12(2%) Pemphigoid gestations (PG) 1(0.16%) and Intrahepatic Cholestasis Pregnancy (ICP) 1(0.16%) [Table 4].

Commonest infections seen was fungal in 40 cases (6.6%), followed by bacterial infections 12(2%). 4 patients showed skin scraping positive for Scabies mite. Other coincidental dermatoses includes acne vulgaris 9(1.5%), eczema 5(0.833%), contact dermatitis 8(1.33%) and psoriasis 2(0.33%) [Table 5].

Discussion

The present study involved 600 cases of pregnant females presenting to the outpatient department of Dermatology and OBG with skin changes. The age group ranged from 18 years to 44 years with an average of 29.5 years. In Kumari et al study the age range was 18 to 36 years with a mean of 23 years which is nearer to this study[8]. In Raj et al study age range was from 16 to 30 years[9]. In Rathore et al[10] study the age range of patients was 18 to 40 years (mean 26.42±4.05); 63.55% cases were up to 25 years of age which is in contrast to the study done by Shiva Kumar et al who observed that majority belonged to the age group of less than 20 years (49.41%)[11]. Reddy BN et al[12] study age range was from 18-42 years (average 24.84±4.8 years).

In our study earliest cutaneous change was noted at 15-38 weeks of the antenatal period, with the mean at 28.77 weeks of gestation [Table 1]. Kumari et al considered all pregnant women in her study[8]. In study done by shiva kumar et al.[11] third trimester attendance accounted for 105 cases (61.76%), second trimester for 46 cases (27.5%) and first trimester for 19 cases (11.17%). In Rathore et al study, 56.35% were primigravida; 53.85% cases were in the third and 34% in the second trimester of pregnancy[10].

In our study primigravida were 396 (66%) and multigravida were 204 (44%)[Table 2]. Thus, majority of the cases were primigravida. Whereas Shiva Kumar et al[11] reported almost equal incidence of primigravida and multigravida, with 86 cases (50.58%) 84 cases (49.41%) respectively. In kumara et al study out of 607 patients 303 (49.9%) were primigravida and 304 (51.1%) were multi gravidas.

In our study, physiological changes were more common in Primigravidae accounting about 396(66%) compared to Multigravidae 204(44%). Commonest physiological changes noted were Striae distensae 288(48%) developing on abdomen, hips, buttocks and breast occurs especially in the 6th-7th months of pregnancy approximately 90% of pregnant women[13,14]. Followed by Linea nigra 270(45%), Gingival hyperemia/gingivitis was seen in 20(3.33%), Pigmentary changes were noted in 198(33%), Melasma 192(32%). Stria distansea appears as atrophic bands after birth. Sometimes it may be accompanied by mild pruritus. This situation makes striae less visible but never completely disappears[15,16]. Muzaffer et al.[17] reported incidence of striae in pregnancy as 77%, Kumari et al[8] as 79%. In most of the studies pigmentary changes were noted in 90% of the cases, whereas our study showed pigmentary changes in 390(65%) patients. 72(12%) of our pregnant women complained of loss of hair mainly in third trimester, whereas 48(8%) gave positive report of hair growth in first and second trimester. In studies on estrogen, its

effect was found at the anagen and telogen phase[18]. Late in pregnancy telogen ratio has increased from 35% to about 50%. In the postpartum period, telogen effluvium returns to normal[19]. Due to high estrogen levels during pregnancy, trichogram follicular cycle is responsible for the prolongation of the anagen phase. Anagen hair was seen in 81% of pregnant women of first trimester, while 84% of non-pregnant women. For the second and third trimester this ratio is 90% and 94% respectively and the presence of anagen hair is higher than that first trimester count. Furthermore, compared to non-pregnant, it has been reported that pregnant women have increasing rate of thick hair and hair growth is slowed[20].

Acanthosis Nigricans was seen in 18(3%) of pregnant women which could be because of endocrinal variations. In our study hypertrichosis was seen in 48(8%) of pregnant women. This observation is in agreement with the studies conducted by Pence et al[21] and Dertlioglu et al[22]. Nail changes was seen in 30(5%) of pregnant women in our study whereas Dertlioglu et al repoted 38.5% nail changes.

Gingival hyperemia/gingivitis was seen in 20 (3.33%) of patients compared with study by Dertlioglu et al which showed changes in 16.4%[22]. Gingival hyperemia/gingivitis may be due to hormonal changes or can develop due to gingival poor hygiene, malnutrition and local irritant factors[8,13,23].

Total patients with pregnant specific dermatoses were 45(7.5%). In Raj et al. Study 17 cases (14.91%), Shivakumar and Madhavamurthy et al study 26 cases (9.41%), Kumari et al. study 22 cases (14.97%) in comparision with our study. Among them polymorphic eruption of pregnancy (PEP) were common accounting to 31 (5.16%) in multigravida over extensor aspects as described by Black et al[15] commonly seen in second to third trimester. This was consistent with Black et al study[15]. Most western literature quote an incidence of 2%. Atopic erpution of pregnancy (AEP) in 12 (2%). Pemphigoid gestations (PG) in 1 (0.16%) of patients and Intrahepatic Cholestasis Pregnancy (ICP) in 1 (0.16%). In Indian study by Shivkumar and Madhava Murthy[11] found pruritis to be the commonest symptoms (58.82%).

Coincidental disorder [Table 5] includes acne vulgaris 9(1.5%), contact dermatitis 8(1.33%), eczema 5(0.833%), dermatitis artefacta 3(0.5%) and psoriasis 2(0.33%). Among the infective dermatosis 40(6.66%) dermatophytic infections were common (T. corporis, P. versicolor, Candidiasis) followed by bacterial infections 12 (2%) in the form of pyodermas, folliculitis, furuncles. Finally by 6 (1%) viral infections. Scabies was seen in 4 (0.66%) patients. Study by Shivakumar and Madhava Murthy found Candidiasis (21.78%) as the commonest cause of white discharge per Vagina[11].

Conclusion

Physiological dematoses are common in Primigravida compared to multigravida. Infective dermatosis during pregnancy should be diagnosed at the earliest to prevent morbidity during antenatal period. Specific dermatoses of pregnancy are also not uncommon, can be a source of significant distress to the patients which warrants specific care inturn influences the maternal and fetal outcome. The awareness, recognition of these skin conditions, familiarity with their treatment, antepartum surveillance, early diagnosis and prompt treatment is essential for improving maternal and fetal prognosis thus minimizes their morbidity.

Table 1: Pregnant females according to age group and trimester

Age	15-24	25-34	35-44	Total
Trimester I	34	30	62	126(21%)
Trimester II	26	74	66	166(27.66%)
Trimester III	66	128	114	308(51.33%)
	126(21%)	232(38%)	242(40.33%)	600

Table 2: Gravida in present study

Gravida	**No. of PTS**	**Percentage (%)**
G1	396	66%
G2	154	25.66%
G3	32	5.33%
G4	18	3%

Table 3: Physiological skin changes in Cases

Physiological skin changes	**No. of cases**	**Percentage of Cases (%)**
Pigmentary changes	198	33
Linea nigra	270	45
Striae distensae	288	48
Melasma	192	32

Secondary areola	158	26
Hair loss	72	12
Hypertrichosis	48	8
Nail changes	30	5
Pruritus	90	15
Xerosis	48	8
Skin Tags	12	2
Acanthosis Nigricans	18	3
Seborrheic Dermatitis	6	1
Gingival hyperemia/gingivitis	20	3.33

Table 4: Specific Dermatoses of Pregnancy

Type of pregnancy specific dermatoses	No. of cases	Percentage of cases (%)
Atopic erpution of pregnancy (AEP) (Prurigo of Pregnancy Prurigo gestations Early onset prurigo of pregnancy Pruritic folliculitis of pregnancy Eczema in pregnancy)	12	2
Polymorphic eruption of pregnancy (PEP) (Pruritic urticarial papules & plaques of pregnancy Toxic erythema of pregnancy Toxemic rash of pregnancy Late onset prurigo of pregnancy)	31	5.16
Pemphigoid gestations (PG)/ Herpes gestationis	1	0.16
Intrahepatic Cholestasis Pregnancy (ICP) (Obstetric cholestasis Cholestasis of pregnancy Jaundice of pregnancy Pruritus/ Prurigo gravidarum)	1	0.16

Table 5: Coincident dermatological disorders of pregnancy

Type of dermatological disease	No. of cases	Percentage of cases (%)
Acne vulgaris	9	1.5
Dermatitis artefacta	3	0.5
Eczema	5	0.833
Bacterial infections	12	2.00
Viral infections	6	1.00
Fungal infections	40	6.66
Contact dermatitis	8	1.33
Psoriasis	2	0.33
Scabies	4	0.66

Table 6: Specific dermatosis in comparison with various studies

Specific Dermatosis	Raj et al (1992)	Shivakumar et al (1999)	Kumari et al (2007)	Reddy et al (2013)	Present study (2016)
Atopic erpution of pregnancy (AEP)	14(1.2%)	16 (9.41%)	1 (4.5%)	24 (5.3%)	12 (2%)
Polymorphic eruption of pregnancy (PEP)	2(0.2%)	4 (2.35%)	14 (63.6%)	9 (2%)	31 (5.16%)
Pemphigoid gestations (PG)	-	-	1 (4.5%)	0.0	1 (0.16%)
Intrahepatic Cholestasis Pregnancy (ICP)	1(0.1%)	6 (3.52%)	5(22.7%)	3 (0.7%)	1 (0.16%)

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