



PREGNANCY RELATED SYMPTOMATIC DERMATOSES IN A TERTIARY CARE HOSPITAL IN NORTH INDIA: AN OBSERVATIONAL STUDY

KEYWORDS

Pregnancy, dermatoses, cutaneous changes

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ABSTRACT

INTRODUCTION: Pregnancy is characterized by varied physiological cutaneous changes that may be alarming for some women. Some disorders are specifically affected by pregnancy and are associated with adverse perinatal outcome. This study highlights the symptomatic cutaneous changes during antenatal and postpartum period.

OBJECTIVE: To study the onset and pattern of various symptomatic dermatoses during antenatal and postpartum period.

MATERIALS AND METHODS: A total of hundred patients were selected for the study. Only symptomatic pregnant and postpartum females were included. The disorders were divided into specific dermatoses of pregnancy and the dermatoses unrelated to pregnancy.

RESULTS: Out of 100 study cases, 71% were primigravida and 29% were multigravida. In 13% cases, various specific dermatoses noted were: intrahepatic cholestasis of pregnancy (8%), atopic eruption of pregnancy (4%), polymorphic eruption of pregnancy (1%) and pemphigoid gestationis (1%). Amongst dermatoses unrelated to pregnancy, fungal infection (17%) was found to be the most common infection, followed by parasitic infections (16%), eczemas (14%), herpes labialis (7%), urticaria (6%) and other miscellaneous disorders in that order.

CONCLUSIONS: This study highlights the occurrence of symptomatic cutaneous changes during antenatal and postpartum period in North India.

INTRODUCTION

Pregnancy is a state of profound hormonal, metabolic and immunological readjustments which make the pregnant women susceptible to the changes in the skin and its appendages. These cutaneous changes and eruptions during pregnancy though very common but can cause substantial anxiety on the part of the prospective mother.

These conditions vary from the changes which occur normally in the skin in all pregnancies, to specific skin changes associated with pregnancy or to skin problems which are unrelated to pregnancy. Some cutaneous diseases are modified by pregnancy (exacerbated/decreased in intensity).

Although most of the cutaneous lesions encountered during pregnancy are benign and reversible after delivery but sometimes they can have potential effects on the foetus in terms of morbidity and mortality. It is thus important to be aware of these changes to differentiate benign dermatoses from more serious ones, so that the mother can either be reassured or given appropriate necessary treatment.

MATERIALS AND METHODS

This was a cross sectional observational study done at Department of Skin & STD attached to a tertiary care center in North India during 2013-2014. Informed consent was taken from each patient. A total of hundred, antenatal and postpartum patients presenting with dermatological complaints to outpatient and in patient department of Dermatology, Venereology and Leprosy and Obstetrics & Gynaecology were recruited in the present study.

A detailed clinical history regarding the demographic profile, presenting complaints, skin lesions, gestational age, postpartum period, associated symptoms, treatment taken, dermatoses in previous pregnancies and family history of similar dermatoses were recorded in a prescribed proforma.

Only the presenting complaints of the patients were taken into account. Detailed systemic and dermatological examination was carried out in each case. If any cutaneous lesion was found, its onset,

morphology, distribution, symmetry was noted. Neonatal examination was also carried out in relevant cases of postpartum patients.

Simple non-invasive investigations e.g. scrapings for fungus, smear for vaginal discharge, gram staining, or tzanck smear were done wherever appropriate. Other relevant investigations e.g. complete haemogram, liver function tests (serum bilirubin, SGOT, SGPT, serum alkaline phosphatase) or renal function tests were performed to confirm the provisional clinical diagnosis. In doubtful cases, skin biopsy was done to confirm the diagnosis. Screening investigations like Venereal disease research laboratory (VDRL) and ELISA for HIV was done in every case. Partners were also examined for any similar complaints wherever required. Results were tabulated and statistically analyzed.

RESULTS

Of these 100 patients, 71(71%) were primigravida and the remaining 29(29%) were multipara. Their age range was 19 to 35 years with a mean age of 22 years (Table 1). Majority of the patients i.e. 67% presented in third trimester, followed by post partum patients 12%, 11% in second trimester and 9% in first trimester.

Pregnancy dermatoses are divided into following three categories:

- Physiological skin changes
- Specific dermatoses of pregnancy
- Skin diseases affected by pregnancy

For the present study, only symptomatic patients were enrolled irrespective of the physiological and pathological nature of the cutaneous changes. Most of the patients presented with specific dermatoses of pregnancy and skin diseases affected by pregnancy. Amongst the skin diseases affected by pregnancy, most of the cases were found to be due to fungal infections [tinea cruris and tinea corporis 17(17%) and candidiasis 1(1%)], followed by parasitic infections [scabies 6 (6%)], eczemas 14(14%), viral infections 13(13%), urticarial 6 (6%), striae 4 (4%), syphilis 2(2%), acne vulgaris 2 (2%), and 1 (1%) each of verrucous epidermal nevus, lower abdominal pain, vaginal discharge, generalized drug rash, fixed drug eruption, alopecia areata, neurofibromatosis-1 (Table 3).

We encountered 14(14%) cases of specific dermatoses. Out of these, 8(8%) were of intrahepatic cholestasis of pregnancy, 4(4%) had atopic eruption of pregnancy, 1(1%) each was suffering from polymorphic eruption of pregnancy and pemphigoid gestationis (Table 2). All these patients presented in third trimester, except for one who presented in second trimester. Liver function tests were found to be within normal limits except for raised alkaline phosphatase in 3 (3%) cases.

DISCUSSION

Dermatological changes are common during pregnancy. Some of these are benign and reversible after delivery, whereas others can have potential effects on the foetus in terms of morbidity and mortality. It is important to be aware of these changes so that the benign dermatoses can be differentiated from more serious skin diseases.

Physiological changes include striae distensae (in approximately 90%), chloasma (75%) and generalized hyperpigmentation because of the hormonal alterations. Vascular changes may lead to cutaneous changes like pedal edema, palmar erythema, spider nevi, varicosities, cutis marmorata, gingival edema and redness and telogen effluvium¹. Most of the cutaneous changes observed during pregnancy are so common that they are not usually considered as being abnormal, except in cosmetically concerned or working females. Hence, only symptomatic cases were included in our study.

During pregnancy maternal immune response is shifted (immunodeviation) from Th1 (cell mediated) to Th2 (humoral mediated) type. Th2 type response is beneficial due to the production of cytokines². Puerperium is the period following childbirth during which the body tissues, specially the pelvic organs revert back approximately to the prepregnant state both anatomically and physiologically. Fourth trimester is the time taken from delivery until complete physiological involution and psychological adjustment².

As not many studies focussing on symptomatic dermatoses affecting antenatal and postpartum patients have been undertaken from this part of our country; this study was undertaken to review the pattern of cutaneous lesions amongst antenatal and postpartum females.

In the present study, 57(57%) patients were up to 25 years of age, about 34(34%) were in the age group of 26-30 years and about 8 (8%) were in the age group of 30-35 years and 1(1%) was above 35 years of age group. These findings indicate that the majority of women (91%) in our part of country get married and bear children at ages less than 30 years.

In this study, 71% of patients were primigravidae whereas 29% were multigravidae. Higher prevalence of primigravidae in our study could be because of the fact that a woman in her first pregnancy is more anxious and is more likely to take antenatal care. As the primigravidae are more likely to be younger age group, slightly higher prevalence of primigravidae can also be because of the increased awareness regarding regular antenatal care in the younger generation and better health care facilities.

Out of 100 cases, 67% of patients presented in third trimester, 13% in postpartum period, 11% in second trimester and only 9% in first trimester. This may be because of the fact that most of the specific dermatoses occur in second half of pregnancy. Postpartum period is a period of immunomodulation, so course of some diseases is affected during this time period².

Intercurrent skin diseases were seen in 87% of our patients, which indicates that even dermatoses not directly related to pregnancy are quite common in pregnancy. As cell mediated immunity is depressed during normal pregnancy, which accounts for increased severity and frequency of skin infections³.

Specific dermatoses of pregnancy refer to the skin diseases seen only

during gestation and almost never without it. Specific dermatoses of pregnancy are almost always associated with pruritus and an eruption of variable severity. The incidence of these disorders is 0.5% to 3%⁴. We observed 14(14%) cases of specific dermatoses. The high prevalence of these disorders in our study could be attributed to exclusion of asymptomatic physiological cutaneous dermatoses.

The classification of specific dermatoses is controversial, the most recent rationalized classification is the one proposed by Ambros-Rudolph et al in 2006. They presented four main conditions: 1) atopic eruption of pregnancy (AEP), 2) polymorphic eruption of pregnancy, 3) pemphigoid gestationis and 4) intrahepatic cholestasis of pregnancy. They included three conditions – eczema in pregnancy (EP), prurigo of pregnancy and pruritic folliculitis of pregnancy under AEP due to their overlapping features⁵.

Out of 14 cases observed in our study, 8 had intrahepatic cholestasis of pregnancy, 4 had atopic eruption of pregnancy, 1 each had polymorphic eruption of pregnancy and pemphigoid gestationis. All the patients presented in third trimester, except one who presented in second trimester.

No confirmatory laboratory tests are available for specific pregnancy dermatoses, except direct immunofluorescence which is diagnostic of pemphigoid gestationis and elevated serum level of bile acids of intrahepatic cholestasis of pregnancy. Diagnosis of other types of pregnancy dermatoses are based usually on clinical criteria.

Intrahepatic cholestasis of pregnancy is characterized by pruritus with or without jaundice, absence of any primary skin lesions, and with laboratory markers of cholestasis. Most commonly predisposed sites are extensor aspect of extremities, abdomen and back. The severity of skin lesions correlates with duration of pruritus. It is associated with increased risk of prematurity, meconium stained liquor, intrauterine death due to anoxia caused by decreased fetal elimination of toxic bile acids, vitamin K deficiency and coagulopathy. Its incidence was 8% in our study as opposed to 0.68% in previous studies⁶.

Polymorphic eruption of pregnancy is also known as pruritic urticarial papules and plaques of pregnancy (PUPPP) and is common in primigravida. Although the exact etiology is unknown but conditions leading to increased abdominal size are attributed like multiple gestation and increased maternal weight gain⁷. We reported 1% incidence of PUPPP which is comparable to 0.62% incidence in previous studies.

Herpes gestationis is a rare autoimmune disorder characterized by pruritic, urticarial and vesicobullous skin lesions. Lesions are periumbilical, recur in subsequent pregnancies and are characterized by subepidermal vesicle formation (figure 1). We found 1% incidence as opposed to 0.002% incidence in previous pregnancies⁷.

Atopic eruption of pregnancy (AEP) includes eczemas, prurigo of pregnancy and pruritic folliculitis of pregnancy. Eczemas are common in primigravida due to immunological changes of increased T-helper 2 cells (Th2) production in pregnancy⁷. We reported 4% cases of AEP. The higher incidence of specific dermatoses may be attributed to the differential selection of cases in our study. These are benign disorders and usually resolve after delivery.

Amongst the diseases not related to pregnancy, their incidence was found to be similar as that of the general population. In most of previous studies of pregnancy dermatoses, only antenatal cutaneous changes are taken into account, which occur because of the altered hormonal milieu in the body of a pregnant patient, occurring in all pregnancies, thus their higher prevalence in previous studies is obvious. Not all of these changes are symptomatic, specially in multipara females who are well versed with their benign and reversible nature in their previous pregnancies, thus signifying their

low prevalence in our study. It is suggested that as majority of the physiological cutaneous changes were already known to the patients, therefore dermatological consultation was not taken by majority of these patients.

Postpartum period is the period of altered immune regulation, when there is readjustment of physiological changes which had taken place during pregnancy. This period is often missed and is not considered while considering cutaneous changes during pregnancy. The study brings into focus the symptomatic cutaneous changes of both antenatal and postpartum period, which were not highlighted in previous studies.

Table 1 Showing age distribution of patients

S. No	Age group (in years)	No. of patients (out of 100)
1	Less than 20	2
2	20-25	55
3	26-30	34
4	31-35	8
5	More than 35	1
	Total	100

Table 2 Showing specific disorders related to pregnancy (Out of 100 cases)

S.No	Diseases	No. of cases	Presentation in first trimester	Presentation in second trimester	Presentation in third trimester
1	Intrahepatic cholestasis of pregnancy	8	0	1	7
2	Atopic eruption of pregnancy	4	0	0	4
3	Polymorphic eruption of pregnancy	1	0	0	1
4	Pemphigoid gestationis	1	0	0	1
	Total	14	0	1	13

Table 3 Miscellaneous cutaneous disorders coinciding with pregnancy and postpartum period (n= 86)

S.No	Diseases			No of cases	Course
1	Infections (49%)	Bacterial	Pyodermas	3	New onset
		Viral	Molluscum contagiosum	2	New onset
			Herpes labialis	7	New onset
			Verruca vulgaris	1	New onset
			Varicella	3	New onset
		Parasitic	Scabies	16	New onset
		Fungal	Tinea cruris and corporis	17	Exacerbated
			Candidiasis	1	New onset
2	Eczemas (14%)			14	Exacerbated
3	Sexually transmitted infections (4%)	Lower abdominal pain		1	New onset
		Vaginal cervical discharge		1	New onset
		Syphilis		2	New onset
4	Urticaria			6	Exacerbated
5	Straie			4	New onset
6	Nevus			1	No change
7	Acne vulgaris			2	New onset

8	Drug rash			1	New onset
9	Alopecia areata			1	New onset
10	Neurofibromatosis 1			1	No change



Figure 1 showing grouped vesicular lesions in Herpes gestationis

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