Frequency and clinical variants of specific dermatoses in third trimester of pregnancy: a study from a tertiary care centre

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Abstract

Objective: To determine the frequency of patients with dermatoses in the third trimester of pregnancy and to identify various clinical types of dermatoses in the third trimester.

Methods: The study was carried out at the Department of Dermatology and the Department of Gynaecology & Obstetrics, PNS Shifa Hospital, Karachi, from January 2 to July 1, 2008. Two hundred pregnant women in their third trimester were included in the study. The diagnosis was based on history, clinical examination and relevant investigations. Patients with physiological dermatoses and dermatoses which flare up during pregnancy were excluded. A comprehensive pro-forma was used to evaluate different dermatoses. Skin biopsy for histopathology was also done where necessary.

Results: The age of the study population ranged from 17 to 36 years (mean = 27.3 ± 4.86). Five (2.5%) patients had prurigo of pregnancy, 4 (2%) had dermatoses associated with Intrahepatic Cholestasis of Pregnancy (ICP), 3 (1.5%) patients had polymorphic eruption of pregnancy, and 1 (0.5%) patient had pruritic folliculitis of pregnancy. No case of pemphigoidgestationis was observed.

Conclusion: In the study, 6.5% patients presented with specific dermatoses. Prurigo of pregnancy was the commonest condition. Polymorphic eruption of pregnancy was more common in primigravida, while dermatoses with intrahepatic cholestasis was seen more often in multigravida.

Keywords: Pregnancy, Dermatoses, Third trimester (JPMA 62: 244; 2012).

Introduction

Pregnant women are susceptible to various physiological and pathological cutaneous changes.[1,2] These conditions are generally benign, but they cause substantial anxiety in the pregnant woman. Recognition of these changes is essential for correct diagnosis, as some require appropriate management due to the risk of maternal or foetal complications.

There are several skin changes that seem to be specifically related to pregnancy[3] and puerperium. These changes are commonly observed in the third trimester of pregnancy, such as intrahepatic cholestasis,[4] pemphigoidgestationis,[5] polymorphic eruption of pregnancy, pruritic folliculitis of pregnancy and prurigo of pregnancy. Two others are extremely pruritic conditions and come under the umbrella term of atopic eruption of pregnancy which involves 35-50% cases.[6]

Most of these conditions usually resolve at term or during puerperium, and do not carry any foetal risk. In few cases of prurigo of pregnancy there is a risk of developing atopic skin changes in the infant. In patients with pemphigoidgestationis immunoglobulin G cross the placenta, and 5 to 10 percent of newborns have urticarial, vesicular or bullous lesions which gradually resolve within a few months.[5] Intrahepatic cholestasis poses an increased risk of prematurity intrapartalfoetal distress (22-33%),[6] premature delivery (19-60%) and stillbirths (1-2%).[7] Therefore, early diagnosis, prompt treatment, and close obstetric surveillance are mandatory in these cases.

The study was designed to assess the frequency of specific dermatoses in the third trimester. The key rationale for conducting the study was to have a better understanding of these dermatoses. The knowledge of such problems is imperative in order to prevent any event that may endanger the health of the mother and the baby. Despite the high prevalence of pregnancy dermatoses, the data regarding specific dermatoses in the third trimester is insufficient and is not available in our setup.

Patients and Methods

Two hundred pregnant women in their third trimester were included in this descriptive, cross-sectional study. A minimum sample size of 196 patients was required to see 10 percent of dermatosis in them with a bond on error of 0.042 (4.2%) with a power of 0.8, an alpha significance level of

0.05 with a 95% confidence interval.[1,6]

The patients were gathered during a period of six months. All primi and multigravida in their third trimester were selected from the antenatal clinic and dermatology outpatient department. Patients having physiological dermatoses and dermatoses which flare up during pregnancy and those having any previous systemic illnesses causing dermatoses like diabetes mellitus were excluded. A comprehensive pro-forma was used to record all the relevant information. After obtaining consent, full history was taken to ascertain parity, gestational age, any cutaneous eruption in the current pregnancy, its duration and symptoms, past history of similar eruption, and family history of any cutaneous eruption during pregnancy. Each patient was properly examined. Examination included general and cutaneous features, eruption, particularly involving periumbilicalarea, extremities and any blister formation. All patients were monitored through the third trimester of pregnancy. In patients who presented with pruritus, liver function tests and complete blood count was done to exclude other causes of cholestasis. Skin biopsy for histopathology was done where necessary. Sampling technique was probability non-purposive sampling.

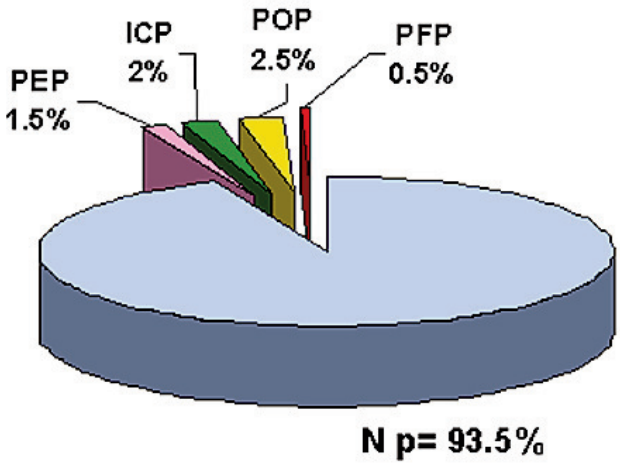
The data was analysed by using the Statistical Package for Social Sciences (SPSS) computer programme. Relevant descriptive statistics, frequency and percentage were employed for categorical variables like dermatoses. Mean and standard deviation were computed for quantitative variables like age, parity and gestational age. No statistical test of significance was applicable for this descriptive study. There was no ethical committee in PNS Shifa at that time so there was no ethical review process in place.

Results

A total of 200 pregnant females in their third trimester were analysed in the study. There were 38(19%) primigravida and 162 (81%) multigravida. Parity was between 0 to 7 (mean 2.51 ± 1.69). Their ages ranged from 17 to 36 years (mean = 27.3 ± 4.86). Gestational age at the time of initial presentation ranged from 28 to 39 weeks (mean =34.21 ± 3.48). Out of the total 13 (6.5 %) had specific dermatoses. Specific dermatoses of pregnancy observed during the study were prurigo of pregnancy, dermatoses with intrahepatic cholestasis of pregnancy, polymorphic eruption of pregnancy and pruritic folliculitis of pregnancy. Of the total, six (46%) patients were primigravida and 7 (54%) were multigravida.

Amongst patients with specific dermatoses, five (2.5 %) had prurigo of pregnancy, 4 (2%) had dermatoses associated with intrahepatic cholestasis of pregnancy, and 3 (1.5%) had polymorphic eruption of pregnancy. Pruritic folliculitis of pregnancy was observed in one (0.5%) patient. During the study, no case of pemphigoidgestationis was observed (Figure-1).

In 12 (6%) patients there was a history of cutaneous eruptions in previous pregnancies which had resolved within three months after the delivery. In all previous pregnancies, the foetal outcome had been normal. Amongst them 6 (3%) patients were asymptomatic in their current pregnancy,



Np: Patients with no specific pregnancy dermatoses.
ICP: Intrahepatic cholestasis of pregnancy.
POP: Prurigo of pregnancy.
PEP: Polymorphic eruption of pregnancy.
PFP: Pruritic folliculitis of pregnancy.

Figure-1: Frequency of various dermatoses with their percentages.

Figure-2: Crusted papules of prurigo on the buttocks.

whereas 2 (1%) had prurigo and 4 (2%) presented with dermatoses of intrahepatic cholestasis of pregnancy.

Prurigo of pregnancy was found to be commonest dermatoses. It was observed in 5 (2.5%) patients. One was primigravida, all others were multigravida. In two multigravida there was history of similar eruption in previous pregnancies with no foetal abnormality. One patient presented with history of asthma since childhood. The lesions were extremely pruritic. On clinical examination there were erythematosus papules with excoriation marks present on extremities and abdomen. One patient had lesions also on buttocks (Figure-2) along with abdomen. Skin biopsy was done in all these cases, but there were non-specific changes.

Dermatoses with ICP was observed in four patients (2%). They all had history of similar eruption in previous pregnancies with normal delivery and a healthy baby. They presented with pruritus, which was more marked over palms and soles, and worsened at night time. The only cutaneous finding was excoriation marks involving different parts of body especially over abdomen. One patient presented with jaundice along with cutaneous eruptions. Laboratory findings revealed slightly elevated transaminase and alkaline phosphatase levels. Hepatitis B and C screening was negative. Ultrasonographic studies were normal in all these cases.

Polymorphic eruption of pregnancy was observed in 3 (1.5%) patients. All of them were primigravida and eruption appeared in their third trimester. The most common symptom was pruritus, often leading to disturbed sleep patterns. Urticated papules and plaques initially started from abdominal striae and then slowly spread to the rest of the body involving chest, thighs and buttocks. The characteristic feature was sparing of periumbilical region, palms and soles. There was no mucosal involvement observed. Skin biopsy findings showed epidermalspongiosis, papillary dermal oedoema and a perivascular inflammatory infiltrate with numerous eosinophils.

In the study only one patient had pruritic folliculitis of pregnancy (0.5%). The patient was multigravida and there was no previous history of similar eruption Small erythematous, follicular papules were initially observed on the abdomen and then spread to the legs. These lesions were extremely pruritic. Pus swab for culture revealed a sterile pustule. During the study period, no case of pemphigoidgestationis was observed.

Discussion

Pregnancy is a period during which women undergo significant cutaneous changes. These alterations may range from normal cutaneous changes that occur with almost all pregnancies, to common skin diseases that are not associated with pregnancy,[7] to eruptions that appear to be specifically associated with pregnancy.[8] It can be a stressful time for women so it is essential that physicians should be aware of the normal skin changes and some specific changes during pregnancy in order to prevent the patient's stress, unnecessary investigations and treatments. Certain dermatoses are specifically seen in pregnancy or in the postpartum period.[9] It is, therefore, important to recognise and appropriately manage these cutaneous disorders because of the risk of maternal or foetal complications.[10,11]

Despite frequent association of pregnancy with skin eruptions, there are few studies on the subject in our population. Our study assessed the frequency of specific dermatoses of pregnancy in the third trimester. We highlighted various aspects in the study and analysed the frequency of specific dermatoses which erupt in the third trimester along with various other factors such as age, gestational age, parity of patients, history of similar eruptions in their previous pregnancies, and family history.

The term-specific dermatoses of pregnancy have always been confusing. It was used for the first time by Holmes and Black in 1982.[12] It encompasses polymorphic eruption, prurigo of pregnancy, pemphigoidgestationis and pruritic folliculitis of pregnancy. Atopic eruption of pregnancy is a relatively new term which encompasses prurigo and pruritic folliculitis of pregnancy.[6] Prurigo of pregnancy is strongly associated with past or family history of atopic dermatitis. Initially, they did not include dermatoses of intrahepatic cholestasis as specific dermatoses of pregnancy. It was in 2003 that Kroumpouzos G et al[4] suggested that dermatoses associated with intrahepatic cholestasis of pregnancy should also be considered, as this disorder is associated with pregnancy and its manifestations must be differentiated from other specific dermatoses. It was then, included in the classification of specific pregnancy dermatoses.[13] Atopic eruptions of pregnancy is also highlighted as an eruption which is a combination of prurigo of pregnancy, pruritic folliculitis of pregnancy and eczema of pregnancy.[7]

Our study evaluated the frequency of specific dermatoses in pregnant women compared to other studies which only reported the percentages of diseased cases. A single local study evaluated the frequency of physiological dermatoses and dermatoses which flare up during pregnancy in all trimesters.[14] As no data is available on frequency of specific dermatoses, we only compared the results of patients with specific dermatoses with other studies. These percentages are only among the patients with specific dermatoses.[15]

Our study showed that specific dermatoses were not rare among pregnant women. We compared the result of our study with various other national and international studies. Prurigo was frequently observed in contrast to other studies, where polymorphic eruption was commonest dermatoses.[16,17] It is commonly observed in primigravidas.

In contrast to other studies, prurigo of pregnancy was found to be the most common specific dermatoses,[15] Excoriated papules were present predominantly on the arms and the legs. It can affect either primigravida or multigravida. Patients in our study had history of similar eruptions in previous pregnancies.

Dermatoses with intrahepatic cholestasis were the second most common disorder. Two patients had family history of similar eruptions during pregnancy. It is important to investigate all patients of dermatoses with intrahepatic cholestasis thoroughly to exclude any other systemic illness.

In other published studies, polymorphic eruption was the commonest pregnancy-associated dermatoses,[17] while in our study it was .the second most common dermatoses. All patients were primigravida. Lesions were initially localized to abdominal striae and then slowly spread to the rest of the body. Patients with pruritic folliculitis presented with generalised red follicular papules distributed on the abdomen and the limbs. These papules were extremely itchy.[18,19]

The focus of our study was on specific dermatoses and did not address other physiological skin conditions. A similar study on the frequency of pregnancy dermatoses had been done by Muzaffar F et al in 1999.[20] We included patients in their third trimester whereas they had included 140 pregnant females from all trimesters for any cutaneous eruption. Their emphasis was mainly on the dermatoses which flare up during pregnancy and also physiological skin changes observed during pregnancy.

Prurigo of pregnancy was found to be the commonest dermatoses in our study group whereas in Samdani AJ's[6] study, polymorphic eruption was the commonest dermatoses. It was present in 38.29% cases. There was no case of pemphigoid gestationis in our study, whereas in that study it was quite frequent with approximately 20% patients with specific dermatoses having it. Average age of patients with dermatoses was 22 years, whereas in our study the average age of patients with specific dermatoses was 30.2 years.

In response to the study conducted by Roger et al[15] our study highlighted the various other aspects like association of dermatoses in previous pregnancies and our study is different in this aspect that they also extended their study to evaluate the pregnancy outcomes of these dermatoses. In their study, the commonest dermatoses was polymorphic eruption of pregnancy, which was present in 43.8% cases. Intrahepatic cholestasis was present in 38.6% cases, pemphigoidgestationis was in 12.3% cases, whereas pruritic folliculitis was the rare dermatoses they observed in their study.

We also compared our results with an international study conducted in 1999 by Voughan Jones SA et al.[16] The commonest dermatoses in their study, like earlier studies, were polymorphic eruption of pregnancy. In our study most of the women with prurigo were multigravida, while in the study of Voughan et al 33% women with prurigo of pregnancy were primigravida. In our study dermatoses with cholestasis was commonly observed in multigravida. They showed that the incidence of intrahepatic cholestasis was 75% in the third trimester and most of the patients were primigravida. In our study, all the patients with polymorphic eruption of pregnancy were primigravida, while in their study 55% were primiparous. In our study, pruritic folliculitis was observed in multigravida and their results showed that all patients with pruritic folliculitis were primigravida, and 86% of them presented in their third trimester. Another retrospective study on pregnancy dermatoses was done in March 2006 by Ambrose CM.[21] This study had evaluated the frequency and clinical characteristics of pruritic dermatoses in pregnancy and to assess a rationalised classification. This study is different from our study in the sense that they did not even evaluate the specific dermatoses but they also inducted pregnant women with other pruritic conditions like eczema and atopic dermatitis. They included women in all the trimesters. In their study, polymorphic eruption of pregnancy was found to be the commonest dermatoses. It was present in 21.6% cases. Pemphigoidgestationis was observed in 4.2% cases, intrahepatic cholestasis of pregnancy was in 3% cases, and prurigo of pregnancy was in 0.8% cases, while pruritic folliculitis of pregnancy was observed in 0.2% cases. They also included some miscellaneous dermatoses like eczema and some other pruritic conditions. Our study is different from this study because we focused only on specific dermatoses in the third trimester.[22]

Our study highlighted the frequency of dermatoses that are unique to gravid state. Early detection and early management of specific dermatoses prevent maternal and foetal morbidity and sometimes mortality. Major advances have contributed to a better understanding of the classification, pathogenesis and treatment of the specific dermatoses of pregnancy. Laboratory findings are diagnostic of dermatoses with intrahepatic cholestasis, whereas distinct clinical characteristics facilitate the diagnosis of polymorphic eruption and prurigo of pregnancy.

The short duration of our study limits its significance because most of the other studies were of long durations. Other trimesters of pregnancy were not included in this study so it cannot be stated that theses dermatoses present only in

the third trimester of pregnancy. Besides, our study did not highlight the outcome of the pregnancy. Hence, it did not assess the foetal outcome which should be assessed in every patient with pregnancy dermatoses during a subsequent pregnancy to see its potential effect on the factors.

Other limitations of the study included limited external and internal validity. It was a single-center study. There was variability in examination by different dermatologists which could be a bias in this study. This could be addressed in future studies by using one or two dermatologists. A multi-center study should be undertaken in the future to substantiate the findings of this study.

Conclusions

Pregnancy is frequently complicated by skin abnormalities. Awareness of pregnancy related skin changes can facilitate improved care of pregnant women by identifying those skin changes that require further evaluation. Our study suggests that specific dermatoses of pregnancy are not uncommon. Prurigo of pregnancy is found to be the commonest dermatoses of pregnancy. Cutaneous eruptions in previous pregnancies are not rare. After the evaluation of our study results, we recommend that follow-up of patients during pregnancy and after delivery should be done to see resolution of symptoms and foetal complications.

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