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RESEARCH ARTICLE
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"CLINICAL PATTERNS AND PREVALENCE OF PREGNANCY-RELATED DERMATOLOGICAL ISSUES"

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ABSTRACT

Background: Hormonal adaptations, immunologic and vascular changes cause numerous physiological and pathological changes in the skin during pregnancy. The dermatological changes in pregnancy may interfere with the maternal well-being, psychosocial well-being and in some instances, maternal fetal outcomes. Although they are common, information about the trends and the rate of such conditions is scarce in Pakistan.

Objective: The purpose of this study was to find out the clinical patterns and the number of pregnant women with skin problems in relation to their pregnancy who visited the dermatology department of Hayatabad Medical Complex, Peshawar.

Methods: A cross-sectional study was done at Hayatabad Medical Complex, Peshawar from February, 2025 to July, 2025. In total, 150 pregnant women at any stage of the pregnancy were the ones to take part in the research. Women taking part in the study were subjected to structured interviews and thorough dermatological examination. Both physiological and pathological skin diseases were recorded, and the data were analysed to find out the prevalence and patterns according to age groups and trimesters. The criteria for inclusion were all pregnant women attending the outpatient departments who gave their consent, while those having pre-existing chronic dermatological conditions, systemic comorbidities that affect the skin, or medication-induced dermatoses were the ones to be excluded.

Results: Physiological dermatoses were found in 65.3% of cases, with the most common alterations being hyperpigmentation, linea nigra, striae gravidarum, and melasma. Dermatological conditions of the skin caused by underlying diseases were seen in 34.7% of cases and were mainly due to atopic eruption of pregnancy, PUPPP, prurigo, and intrahepatic cholestasis of pregnancy. The second trimester had a peak of 59% of the participants with skin problems. The age distribution showed a higher proportion of 26–30-year-old women with skin problems.

Conclusion: Dermatological manifestations during pregnancy are very common, with physiological changes being the most common. Pathological dermatoses, although they are less common, need to be diagnosed and treated promptly. Antenatal care should include regular dermatological evaluations and counselling for the patients in order to enhance maternal comfort, knowledge, and outcomes.

Keywords: Pregnancy, Dermatological Manifestations, Physiological Dermatoses, Pathological Dermatoses, Antenatal Care, Prevalence, Hayatabad Medical Complex, Peshawar, Hyperpigmentation, Striae Gravidarum, Atopic Eruption of Pregnancy

INTRODUCTION

Pregnancy is a special physiological condition, the condition of complicated hormonal, immunological, and metabolic changes which find their reflection in the skin, hair, nails, and mucous membranes, and in most cases provoke specific dermatological changes, which may be either harmless physiological deviations or severe dermatological conditions associated with pregnancy (1). Dermatological problems in pregnancy are rapidly growing as a significant part of maternal health on a global scale since they influence the level of physical comfort, emotional state, and the quality of life of a woman throughout pregnancy (2). Such dermatoses have a wide range of burdens among different populations because some individuals have certain characteristics due to ethnicity, genetic factors, environmental exposure and health-seeking behaviours, and it is imperative to record the patterns of these dermatoses among particular demographic groups (3). Recent studies indicate that not only physiological but also pathological skin alterations are common during pregnancy, and new clinical knowledge is needed to make timely diagnosis, counselling, and treatment decisions (4).

Calamitous changes are seen in the maternal endocrine, such as increased estrogen, progesterone, cortisol, and melanocyte-stimulating hormone, all of which have direct dermatological effects which can manifest as either pigmentation disorders, vascular alterations, or changes in glandular activity (5). It has been reported in several studies that over 90 per cent of pregnant women have some kind of cutaneous change, which supports the universality of the changes but indicates significant differences in their frequency and severity across different regions (6). Clinical and epidemiological studies further highlight the fact that pregnancy provokes normal adaptive responses of the skin along with pathological processes like atopic eruption of pregnancy, polymorphic eruption of pregnancy, as well as intrahepatic cholestasis, which have different levels of maternal and fetal risk (7). Clinicians in the obstetric and dermatology setting should be able to identify these patterns because early distinction between beneficial and dangerous manifestations can significantly influence the clinical outcomes (8).

However, despite the non-harmful nature of most of the dermatological changes in pregnancy, the psychological trauma of the visible skin changes can be significant, especially in women with a high cosmetic anxiety or worry regarding the well-being of their pregnancy (9). Research carried out in South Asian contexts indicates that social and cultural expectations and a lack of awareness usually put off medical consultation on dermatological issues during pregnancy, which may worsen treatable diseases (10). Psoriasis has been of special concern to the clinically significant dermatoses affecting pregnancy because its behaviour is unpredictable during pregnancy, and the disease can actually improve in certain pregnant women and deteriorate in others (11). Further, a recent review of data shows that the classification and the conceptualisation of pregnancy-related skin disorders remain dynamic, which implies that research and area-specific epidemiological information are required in the long term (12).

Pregnant hormonal and immunomodulatory changes do not just change existing skin disorders but may cause new dermatoses, and recent systematic reviews highlight the variety of pregnancy effects, such as changes in disease course, severity, and expression (13). Examples of pregnancy-related changes in psoriasis include the need to pay close attention to therapeutic planning to prevent risks to the fetus and, at the same time, maintain maternal comfort and control of the condition (14).

Similarly, cross-sectional studies in South Asian groups have re-established the heterogeneity of changes on the cutaneous changes faced during pregnancy and the significance of determining their prevalence rates in order to support improved patient education and clinical practice (15). Moreover, the increased use of skincare products by pregnant women who sometimes do not get medical advice indicates the new necessity to evaluate their perception, knowledge, and safety in terms of skin changes during pregnancy (16).

Additional evidence provided by tertiary care facilities in the developing world testifies to the fact that dermatological problems during pregnancy are often underreported because of cultural stigmatisation, absence of specialised dermatology services, and overall lack of information on the clinical significance of some dermatoses (17). Pruritus is one of the most unpleasant symptoms of pregnancy that can be both physiological and a symptom related to other disorders, such as intrahepatic cholestasis of pregnancy, a condition with negative outcomes in fetuses and, must be identified and treated promptly (18). These heterogeneous dermatological manifestations support the necessity of region-specific research in such countries as Pakistan, where the climatic factors, cultural peculiarities, genetic inclinations, and the shortage of healthcare resources may affect the occurrence as well as the clinical patterns of dermatological diseases of pregnancy.

Objective: The objective of this study is to ascertain the clinical patterns and prevalence of skin diseases associated with pregnancy in pregnant women attending the antenatal clinic at Hayatabad Medical Complex, Peshawar, during the period from February to July 2025.

MATERIALS AND METHODS

Study Design: Cross-Sectional study

Study setting: Hayatabad Medical Complex, Peshawar.

Duration of the study: from February, 2025 to July, 2025.

Inclusion Criteria

All the pregnant women, regardless of their age and gestational stage, visiting the outpatient departments of Hayatabad Medical Complex, Peshawar, during the study period were allowed to participate. Women with dermatological problems and those experiencing physiological changes in skin due to pregnancy were taken into consideration. Informed written consent was required from the participants, and they should have been ready for dermatological examination to be part of the study.

Exclusion Criteria

The study excluded women who already had chronic skin diseases prior to their pregnancy and were going to be misdiagnosed with dermatoses. Besides that, non-participants, patients who refused dermatological checkup, and those having systemic diseases that could possibly affect the skin by themselves—like uncontrolled diabetes or autoimmune diseases—were not part of the study. Pregnant women taking medicines that are known to cause skin reactions were also excluded.

Methods

All participants who met the criteria for inclusion were evaluated dermatologically by the expert dermatologists. A structured questionnaire was utilised to collect demographic data, obstetric history, current pregnancy duration, and the beginning of skin changes. The clinical examination was performed under controlled lighting to capture changes in pigmentation, blood vessels, and glands, and to spot pregnancy-specific skin disorders. If there were any doubts regarding the pathology, additional diagnostic approaches like dermoscopy or lab tests were used when needed. Information was collected using the pre-designed proformas and then input into the statistical software for analysis. The frequencies and percentages were computed for the various skin

conditions as a means of identifying their prevalence throughout the population. The study insisted on default diagnostic criteria in order to make it easier and more precise for the researchers to distinguish between physiological and pathological findings. All steps were taken as per the ethical regulations, and the confidentiality of the patients was preserved during the research process.

Results

In this study, 150 pregnant women who were visiting the antenatal outpatient department of Hayatabad Medical Complex, Peshawar, were recruited. The participants' ages varied between 18 and 40 years, with the largest group (58) being between 26 and 30 years. The age distribution of the study population is shown in Table 1, which reveals that fewer younger (18–25 years) and older (36–40 years) women were included in the sample.

Table 1: Age Distribution of Study Participants

Age Group	Frequency
18–25	42
26–30	58
31–35	34
36–40	16

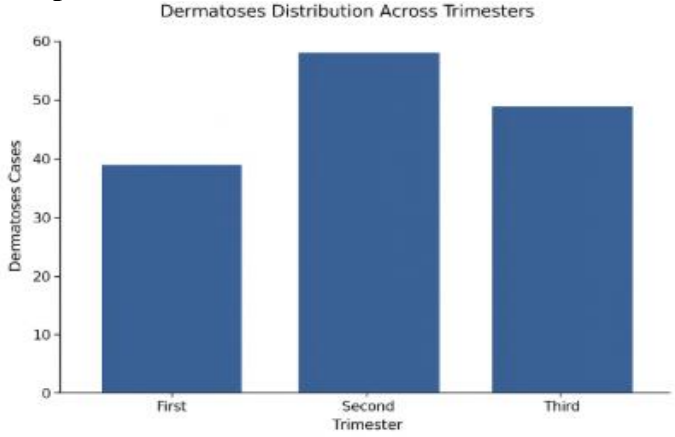
The distribution of participants was made over all three trimesters, out of which 38 women were in the first trimester, 62 were in the second, and 50 were in the third trimester. This distribution provided an opportunity to assess the changes in skin condition during various phases of pregnancy. The distribution of dermatosis cases according to trimesters, as shown in Table 2, revealed the second trimester as the most frequent period for the occurrence of such cases.

Table 2: Dermatoses Cases Across Trimesters

Trimester	Dermatoses Cases
First	38
Second	62
Third	50

A bar graph was used to show the distribution of dermatoses among the trimesters. The graph revealed a maximum summit in the second trimester, followed by a miniature descent in the third trimester. The trend implies that during mid-pregnancy, the skin changes, both physiological and pathological, at their most pronounced stage.

Graph: Dermatoses Distribution Across Trimesters



Physiological alterations in skin conditions, such as hyperpigmentation, linea nigra, melasma, and striae gravidarum, were the predominant findings, representing 98 cases (65.3%), while diseases of the skin, for instance, atopic eruption of pregnancy, polymorphic eruption of pregnancy (PUPPP), prurigo, and intrahepatic cholestasis, occurred in 52 subjects (34.7%). The general pattern of dermatoses is depicted in Table 3.

Table 3: Pattern of Dermatoses

Type of Dermatoses	Frequency
Physiological	98
Pathological	52

Among the pathological conditions, atopic eruption of pregnancy was the most prevalent (22 cases), followed by PUPPP (14 cases), prurigo (10 cases), and intrahepatic cholestasis of pregnancy (6 cases). Table 4 presents the frequency of these common pathological dermatoses, highlighting the importance of early detection and monitoring to prevent complications.

Table 4: Frequency of Common Pathological Dermatoses

Common Pathological Conditions	Frequency
Atopic Eruption	22
PUPPP	14
Prurigo	10
Intrahepatic Cholestasis (ICP)	6

Overall, the results indicate that physiological skin changes are more prevalent than pathological dermatoses in pregnancy, but the latter require heightened clinical attention. The second trimester represents the peak period for dermatological manifestations, suggesting the influence of mid-pregnancy hormonal and immunological changes. These findings are consistent with previously reported data from tertiary care centers in South Asia.

Discussion

Pregnancy is a condition that causes a lot of physiological changes, such as skin changes, which are the result of changes in hormones, the immune system, and blood vessels. A study carried out at Hayatabad Medical Complex, Peshawar, to examine the patterns and frequency of pregnancy-related skin problems, and the results were consistent with some previous studies in South Asian populations. The age distribution of our study showed that most of the subjects were 26–30 years old, which is the same as the findings by Jaggi and Markan (1). The latter also found that dermatology cases were more common among women in their late twenties. This group is typically undergoing significant hormonal changes, which might cause skin to exhibit both normal and abnormal conditions. There were fewer pregnant women from the other two age groups, which may be an indication of lower fertility rates or different healthcare-seeking behaviour in these age groups.

The distribution of dermatosis cases by trimester revealed that in the second trimester, skin changes were the most common, followed by the third and first trimesters. This finding is in line with Barnawi et al. (2), who pointed out that mid-pregnancy is marked by the highest levels of hormones, including estrogen and progesterone, which can worsen skin troubles. In the same vein, Szcześniak et al. (3) argued that the second trimester is marked by immunological changes that may lead to the development of inflammatory dermatoses, which makes this period very important for dermatological monitoring. Alhomieed et al. (4) also hinted that the mid-gestational period is a time of increased susceptibility for the development of pregnancy-specific dermatoses, thus confirming the pattern seen in our study.

The skin changes that were most often observed were physiological dermatoses, which represented 65.3% of all the cases. Among the skin changes, the leading ones were hyperpigmentation, striae gravidarum, melasma and linea nigra; this is in agreement with the reports made by Broshtilova and Gantcheva (5) and Kabir et al. (6). Even if these changes are benign, they still have implications for the pregnant woman in terms of both cosmetics and the psyche. Kaujalgi (7) and Sridevi (8) stated that educating and counselling about the normal skin changes associated with pregnancy can help in reducing maternal anxiety and also in making the patients more compliant with prenatal care. Our study verifies that the physiological changes are general and should not be considered as pathological conditions but rather as part of the normal process of adaptation to pregnancy.

Pathological skin diseases were seen in 34.7% of the subjects, with atopic eruption of pregnancy being the most frequent case, followed by polymorphic eruption of pregnancy (PUPPP), prurigo, and intrahepatic cholestasis of pregnancy (ICP). Similarly, Singh et al. (9) noted comparable patterns in South Asian gatherings and pointed out the need for early diagnosis and management to prevent maternal discomfort and even fetal complications as an issue of clinical importance. Imtiaz et al. (10) stated that atopic eruption usually occurs in the second trimester, which corresponds to our observation of a rise in mid-pregnancy dermatoses. Then again, psoriasis, even though it was less common, did occur in some individuals and has been shown to exhibit different clinical behaviours during pregnancy as proposed by Simionescu et al. (11). The larger share of physiological dermatoses indicates that most skin alterations in pregnancy are harmless; nevertheless, pathological conditions, though rarer, demand attentive surveillance. Szcześniak et al. (12) and Alhomieed et al. (13) demonstrated that telling apart physiological and pathological dermatoses is crucial to avoid misdiagnosis and to give prompt interventions. Simionescu et al. (14) went on to clarify that conditions like PUPPP and prurigo can decrease the quality of life of mothers very much owing to severe itching and discomfort, which necessitates both symptomatic and supportive care.

The significance of tertiary care centres in the discovery of uncommon skin diseases has been underlined by Jaggi and Markan (15), which is consistent with the research conducted in our study area, which is the Hayatabad Medical Complex, Peshawar. Aladwan et al. (16) further noted that patients' awareness and management practices are significant factors in resolving dermatological problems. Thus, in our instance, education programs and counselling could be of great help to women in distinguishing between skin changes that are either physiological or pathological. Shukla et al. (17) argued that the use of structured dermatological evaluation in prenatal visits can prevent the occurrence of complications related to pruritic or inflammatory skin diseases by allowing the detection and treatment at an early stage. Besides, they warned that itchy skin in pregnant women can indicate serious liver or other systemic diseases, thereby stressing the need for clinical alertness, particularly in specialized medical facilities. The study's overall conclusion is that the occurrence of pregnancy-related skin diseases is very high, with the physiological types being more prevalent than the pathological ones. Rudder et al. (18) noted that the evaluation of skin diseases during the second trimester is very important as this is the period with the maximum change in hormones and immunity. Raising awareness, offering counselling, and early diagnosis of the skin diseases that do not lead to the death of the mother or fetus are necessary in order to ensure maternal comfort and avoid negative outcomes for either the mother or the fetus. These findings reinforce the importance of recognizing dermatological evaluations as an essential part of routine prenatal care, especially in high-level hospitals that cater to a variety of people.

Conclusion

Pregnancy-related skin problems are very common in pregnant women, and this study mentions the physiological changes, which include hyperpigmentation, striae gravidarum, and melasma, as the most common ones. Among the pathological dermatoses were atopic eruption of pregnancy, polymorphic eruption of pregnancy (PUPPP), prurigo, and intrahepatic cholestasis of pregnancy, which were found to be less frequent but still significant clinically because of the potential discomfort for the mother and the risk to the fetus. The second trimester was indicated as the stage

in which skin changes started most often, which might be due to the hormonal and immunological alterations of mid-pregnancy. Differentiating between physiological and pathological dermatoses and recognising them early on are very important for proper management and improving the quality of life for mothers. Dermatological assessments included in routine antenatal care can be conducted along with patient education and counselling to improve maternal awareness, lessen anxiety, and help in timely intervention. The implications of these findings are that there is a need for region-specific studies to inform clinical practice and optimise maternal healthcare services in tertiary care settings such as Hayatabad Medical Complex, Peshawar.

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