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Original Article

Dermatological Infections in Pregnancy and their Obstetric Outcome in Madurai, India

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Abstract

Background: The purpose of this study is to evaluate the effect of infectious dermatological diseases on pregnancy outcome. It also aims to study the onset of new dermatological lesions in the milieu of altered immune response during pregnancy.

Materials and Methods: It is an observational prospective study conducted in antenatal women who were admitted at Government Rajaji Hospital, Madurai over a period of 1 year. 12 women with dermatological infections were identified and they were followed up till delivery. The effect of the dermatological infection on the newborn was also looked for.

Results: Viral infections are the most common affecting the skin during pregnancy. Furthermore, due to early referral to tertiary center, secondary bacterial infection is prevented. These dermatological infections did not significantly affect the pregnancy outcome. The decreased reporting of dermatological infections may also be due to the myths around these and many sorts to native treatment. Much more information may be obtained by a field study.

Conclusion: Although pregnancy boosts up the humoral immune response, there is a depression of cellular immunity that results in occurrence of viral infections during pregnancy. Early diagnosis and appropriate management, results in an uneventful pregnancy outcome.

Key words: Dermatological infections, Obstetric outcome, Pregnancy

INTRODUCTION

During pregnancy, there is alteration of the immunological and endocrine milieu. Due to this change, there is a wide range of infectious diseases that can occur during pregnancy. The acquisition, clinical presentation, and course of these diseases are also altered during pregnancy. It may be due to impairment of the cellular immunity. These diseases may affect the outcome of pregnancy by affecting the mother and the fetus. This study is to analyze the prevalence of dermatological infections during pregnancy and to evaluate the maternal and fetal outcome.[1-3]

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MATERIALS AND METHODS

1. The study is conducted on pregnant patients admitted at Government Rajaji Hospital during their second and third trimester
2. Informed oral and written consent of the patient
3. Counseling and communication about the need and methods of the study
4. The relevant history is obtained from the patient and documented
5. Investigations: Hemoglobin %, ultrasonography, investigations to confirm the dermatological condition if needed
6. Photography of the dermatological lesion with the consent of the patient
7. Dermatologist opinion regarding the confirmation of diagnosis and further management plan is obtained.

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RESULTS

Among the mothers who were admitted in their second or third trimester for various other reasons, the occurrence of skin infection was observed. 12 patients were found to have skin infections at the time of admission.

Among that viral infections were the most common, occurring in 9 out of 12 patients (75%). These women presented with active lesions. Of these, 2 women had miscarriage. One had cesarean section for obstetric indication and the others delivered vaginally. None of the term babies born had active infection.

The other 25% were contributed by parasitic infections. These women had uneventful delivery and both mother and fetus were not affected. (Table 1)

DISCUSSION

Bacterial Infections: Skin and Soft Tissue Infections

Community acquired methicillin-resistant *Staphylococcus aureus* is becoming increasingly relevant in pregnancy and puerperium with infections of the breast, buttock, and vulvovaginal area. Risk of vertical transmission of infection is very low.

Mycobacterial Infection

- Leprosy
  Leprosy reactions may be triggered by pregnancy. Type I reaction occur maximally postpartum. Type II reaction may occur throughout pregnancy and lactation. Silent neuritis may occur 6-9 months following delivery especially in patients with borderline leprosy. Leprosy reactions to be managed with oral corticosteroids and vigilance for neuritis postpartum are important.
- Tuberculosis (Tb)
  Cutaneous Tb has very rarely been reported.

Table 1: Dermatological Infections and their Obstetric Outcome

Diagnosis	Parity	Obstetric outcome
Tinea	Primi	Labornaturale
Tinea	Primi	Labornaturale
Chicken pox	Primi	Spontaneous abortion
Chicken pox	Primi	Labornaturale
Chicken pox	g2p1l1	Labornaturale
Chicken pox	g3p2l2	Labornaturale
Herpes labialis	g2p1l1	Labornaturale
Herpes labialis	g2p1l1	Cesarean section
Scabies	g2p1l1	Labornaturale
Genital herpes	g2p1l1	Spontaneous abortion
Molluscum contagiosum	Primi	Labornaturale
Molluscum contagiosum	g2p1l1	Cesarean section

Fungal Infections

- Dermatophytoses
  The onset of tinea corporis and tinea pedis in pregnancy has been reported. Topical azoles can be safely used in pregnancy
- Tinea versicolor and pityrosporum folliculitis
  Caused by Malassezia. Higher degree of colonization noted in the end of pregnancy and postpartum. Topical ciclopirox, topical clotrimazole, and terbinafine are the treatment options available.
- Sporotrichosis
  No fetal risk is associated. Treated with amphotericin B
- Systemic mycoses
  i. Coccidioidomycosis - disseminated disease is associated with third trimester and immediate postpartum period with the neonate acquiring the infection due to aspiration of vaginal secretions. If untreated leads to mortality. Should be promptly treated with amphotericin B. Presence of erythema nodosum is associated with positive outcome
  ii. Blastomycosis can never cause severe illness in pregnancy
  iii. Cryptococcosis predominantly affects the immunocompromised individuals and maternal morbidity includes meningitis and pulmonary involvement. To be managed with amphotericin B.

Parasitic Infections

- Scabies - prevalence in pregnancy has been systematically studied. Permethrin 5% cream can be tried
- Leishmaniasis - amphotericin B is the safest treatment option
- Toxoplasmosis - skin lesions of toxoplasmosis are not affected by pregnancy.

Viral Disease

- Herpes simplex virus
  Disseminated disease may lead to encephalitis, hepatitis, coagulopathy, thrombocytopenia, and leukopenia. Fetal risks include - spontaneous abortion, prematurity, congenital herpes, neurological complications, microcephaly, hydrocephalus, and chorioretinitis. Early identification and treatment with acyclovir is essential.
- Varicella zoster virus (VZV)
  It may cause intrauterine growth restriction (IUGR) and low birth weight. Congenital varicella syndrome is rare but devastating complication. Maternal pneumonia

can occur. If a pregnant woman is exposed to varicella, varicella-zoster immunoglobulin administered at time of exposure or up to 96 h later may prevent or lessen the severity of the illness.

- HIV
  Associated skin disorders include eosinophilic folliculitis, molluscum contagiosum, Kaposi sarcoma, VZV infection, and genital warts. Management includes counseling, cesarean delivery and avoidance of breastfeeding and antiretroviral therapy.
- Rubella
  Congenital rubella syndrome is the most severe fetal risk. Managed by routine measles, mumps, and rubella vaccination.
- Parvovirus B19
  Characteristic slapped cheek exanthema associated with vertical transmission, spontaneous abortion, low birth weight, and hydrops.

Sexually Transmitted Diseases

- Syphilis
  It caused by treponemapallidum. Infection of the fetus can occur as early as 9-10 weeks gestation during primary or secondary syphilis. Fetal risks include spontaneous abortion, prematurity, infant death, and congenital syphilis. A course of penicillin administration 4 weeks or more before delivery is considered adequate for the prevention of congenital syphilis.
- Chlamydia trachomatis
  Recent acquisition of infection is associated with increased fetal risk. Treatment reduces the rate of premature rupture of membranes.
- Gonorrhea
  Associated with prematurity, PROM, fetal death, IUGR, and neonatal diseases. Ceftriaxone is the most effective treatment
- Trichomoniasis
  Managed with metronidazole.
- Bacterial vaginosis
  Diagnosed when three of the four Amsel criteria are present, treatment is recommended only for symptomatic group.
- Vulvovaginal candidiasis
  Neonatal candidiasis can result from passage of the infant through the birth canal. Congenital candidiasis can result from an ascending infection in utero. Treated with topical azole.[4,5]

CONCLUSION

The dermatological infections that affect during pregnancy are predominantly viral. Prompt treatment in the tertiary center with early diagnosis and appropriate drugs has resulted in good obstetric outcome in many pregnant women.

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