

# Malaria in Pregnancy

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## Abstract

**Background:** Malaria in pregnancy contributes to low birth weight and increased infant mortality.

**Methods:** The study included 416 pregnant women reporting with fever and the impact of malaria on pregnancy was assessed.

**Result:** The study revealed that the protozoal infection affects second trimester more commonly. It increases the chances of abortions, intrapartum foetal distress and meconium stained amniotic fluid.

**Conclusion:** Malaria is an important cause of feto-maternal morbidity during pregnancy.

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**Key Words:** Malaria in pregnancy; Plasmodium

## Introduction

Malaria remains the most important parasitic disease of man. It kills about 2.5 million people world wide [1]. The impact of malaria during pregnancy includes cerebral malaria, maternal and foetal death due to maternal anaemia and intra uterine growth retardation. Plasmodium is known to have an increased affinity for the decidual vessels of the placenta. Studies have demonstrated that the frequency and severity of malaria is greater in pregnant women with concurrent human immunodeficiency virus (HIV) infection [2]. The identification of the cytoadherence of molecular receptor on the parasitized red blood cell (RBC), has led to the development of vaccine so as to prevent parasite lodging in the placenta [3].

## Material and Methods

A preliminary study was carried out in the service and a civil hospital in the station. The study included 416 pregnant women reporting to the hospital with fever. A detailed history and clinical examination was done to ascertain the cause of fever. Haemoglobin, total and differential leucocyte count, peripheral blood smear for malarial parasite, routine urine examinations were done for all the patients. Additional investigations such as urine culture, sputum for acid-fast bacilli (AFB) etc. were done on the merits of the case. A total of 27 patients were found to be smear positive for plasmodium. The patients were treated with tablet chloroquine. Tablet quinine was to be used once falciparum was detected or in case of complications. Patients who did not respond to quinine were given artesunate. Injectable quinine or artesunate were used in case of vomiting.

## Result

This study included the local population and the dependents of the armed forces personnel. A total of 27 (6.5%) patients of the 416 women who came with fever were found to be positive for the plasmodium parasite by peripheral blood smear.

Malaria affected all the trimesters of pregnancy, with predominance in the second trimester (62.9%), while 22.2% and 14.9% were affected in first and third trimesters respectively. Plasmodium falciparum was more common (48.2%) than the vivax (29.7%) and other cases had mixed infection. When treated nine patients responded to quinine and two patients required artesunate.

The various complications related to pregnancy in these patients are shown in Table 1. Seven cases were found to have thick meconium stained amniotic fluid (MSAF) when the membranes ruptured spontaneously or artificial rupture of membranes (ARM) was done. These patients underwent

**Table 1**  
Pregnancy complications

	Number	Percentage
Abortion		
Ist trimester	2	7.4
IInd trimester	1	3.7
Pre-term labour and low birth weight		
< 2.0 kg	2	7.4
2.0-2.5 kg	2	7.4
Thick MSAF	7	25.9
Intrapartum foetal distress	2	7.4
IUFD (Intra uterine foetal death)	1	3.7
Still birth	1	3.7

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intrapartum amnioinfusion. Intrapartum foetal distress was observed in two cases. There was one case of intrauterine foetal death (IUFD) at 32 weeks and one case of fresh stillbirth.

Other maternal complications seen during the pregnancy were anaemia in seven patients. One patient presented with cerebral malaria and there were no cases of maternal mortality.

## Discussion

Malaria is a common parasitic infection in humans. Pregnant women are highly susceptible to malaria because of decreased immunity in pregnancy. Malarial parasite lodges itself in the placenta and causes syncytial necrosis. It causes thrombosis of the placental vessels leading to infarction. The spikes of fever lead to release of prostaglandins, which causes abortions and preterm labour. The focal placental infarction decreases the nutrition to the foetus causing intrauterine growth retardation, low birth weight and intrauterine foetal death [4,5]. The decreased placental reserves also result in meconium stained amniotic fluid, intrapartum foetal distress and neonatal complications.

The complications of malaria in pregnancy are more common and severe during the first pregnancy. In subsequent pregnancies antibodies prevent cytoadhesion of the plasmodium infected RBC's to the placenta [4].

Maitra et al [6], in their study found plasmodium falciparum affecting 97.2% of cases and 71% women were primigravidae. The abortion rate was 100% in the first trimester and 75% in the second trimester. The overall foetal loss was 31%. The incidence of maternal death was 8.4%. In this study, there was no maternal death and abortions were seen in 7.4% and 3.7% in first and second trimesters respectively. Meconium stained amniotic fluid was seen in 25.9% of cases. The overall foetal loss in this study was 18.5%. The probable reasons for low foetal loss are regular antenatal visits, close monitoring and availability of better drugs.

Malaria is an important cause for the pregnancy related complications. An early diagnosis and prompt therapy can reduce foetal loss. We feel that all pregnant women coming to the hospital with fever should be screened at the earliest for malarial parasite, especially in the peripheral medical examination room (MI Room)/ primary health centre.

## Conflicts of Interest

None identified

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