MATERNO-FOETAL TRANSMISSION OF PLASMODIUM FALCIPARAM MALARIA

LIAQAT ALI, AZMAT TALAT AND FAIZ M. KHAN
Department of Paediatric,
Postgraduate Medical Institute,
Lady Reading Hospital, Peshawar.

CASE REPORT

A fifty days old baby girl, from Bannu, was admitted in Paediatric B unit, Postgraduate Institute, L.R.H. Peshawar.

She presented with fever and pallor of eight days duration. Her fever was high grade, intermittent, associated with chills and followed by sweating. The temperature would settle with antipyretics only to shoot up again. The pallor came rather slowly and was progressive. She had no evidence of bleeding from the nose and mouth, urinary tract and gastrointestinal tract. No change in her urine color was noted during preceding couple of weeks.

One week before the admission, she was admitted in a private hospital, presenting with fever and some nonspecific illness. She was born of a full term pregnancy at home and had attained normal milestones for her age.

On clinical examination she was very ill, febrile and anaemic, but was not jaundiced. She had tachycardia and mild tachypnoea. Her abdominal examination revealed hepatomegaly of 6 cms in midclavicular line, while spleen was 4.5 cms enlarged. The rest of the examination was unremarkable.

She was clinically diagnosed as having septicaemia and commenced on a combination therapy of Cefotaxime and ampicillin. Her investigation revealed a haemoglobin level of 4.6gms/dl with a T.L.C of 16000/cumm, having 24% neutrophilia, 60% lymphocytes and 16% atypical lymphocytes, platelet count was normal. 20% to 25% R.B.C. were loaded with Trophozoite of Plasmodium Falciparam. Her blood, urine, and C.S.F. cultures were negative. She had 51% foetal HB, while sickling test was negative, G.6.P.D. haemolysate decolorization time test was normal. An x-ray chest was within normal limits.

She was transfused blood and a combination of Amodiaquine (Basaquine) and co-trimaxazole was commenced. Her fever gradually settled and toxicity subsided. On day 5 of treatment blood smear was repeated for malarial parasites. Parasitemia had reduced and only Gametocytes of Plasmodium falciparam were seen. Again no malarial parasites were seen in the blood smear on the 8th day of treatment. Her visceromegaly had already started to regress, and on discharge that is on the 10th day, only the tip of spleen was palpable. She was sent home on long term management, giving her weekly doses of Amodiaquine.

Being an endemic area, malaria denovo in a baby of her age may not have been very surprising, but just to
entertain the possibility of vertical transmission of falciparam malaria, a retrospective history of the mother during pregnancy and afterwards was obtained. She had fever off and on during the last trimester of pregnancy and had received three courses of antimalarial treatment, with which she would temporarily improve. One week after the birth of the baby, she had another attack of fever with chills. Her blood was tested but no malarial parasites were seen. She was given a course of Halofantrine (Halfan) and her temperature settled. One week before the admission of the baby, she had developed high spiking temperature again. The fever was intermittent and associated with chills and sweating. We checked her blood smear for malarial parasites and found trophozoite of plasmodium falciparam. She was referred to the physicians and treated.

DISCUSSION

In a W.H.O. report: world malaria situation in 1990, the global incidence of malaria, is estimated to be nearly 120 million cases each year, with nearly 300 million people carrying the parasite. More than 500 million people inhabit areas where malaria is endemic. In these areas the rate of Malaria acquired during pregnancy is very high. The risks associated with malaria during pregnancy are abortion, intra-uterine growth retardation, preterm delivery, perinatal death, congenital infections. Low birth weight and anaemia in the mother and the baby. The vertical transmission of plasmodium falciparam malaria is an established medical fact. Although in our case, due to lack of facilities, we could not detect identical antibody response in the mother and the baby. We still firmly believe that our patient had, transplacental acquired plasmodium falciparam malaria, as the mother had suffered from fever throughout her third trimester of pregnancy and the baby had very early presentation with gross anaemia and marked visceromegaly. Maternal peripartum fever is an important identifiable factor for identifying parasitemia in neonates, and was reported by Iblanebhorr and Broermann All mothers with peripartum fever should have their blood tested for malarial parasites. Nyiregyesy and coworkers in their prospective study of 302 pregnant women looked for malarial parasites in maternal peri-partum blood smears, placenta, cord blood, and neonatal blood smears and found positive results from smear (21%), placenta (33%), cord blood (9%) and neonatal smear (7%), indicating that in endemic areas, examination of the placenta has a better yield and could be performed in all suspected cases of peripartum malaria.

In areas where facilities are available detection of identifiable antibody response to Falciparam antigen in both the mother and the baby is a more sensitive test for confirming vertical transmission. Bergstrom and coworkers in their series of 202 cases, confirmed a similar antibody response in the affected mothers and their babies. They also incidentally discovered that placenta transmission was more in rural than urban areas and common in multiparous than primiparous woman.

More recently enzyme linked immunosorbent assay (ELISA) techniques have been employed in the diagnosis of malaria. Taylor and coworkers have introduced a simple antigen detection ELISA for plasmodium falciparam. This test is specific to plasmodium falciparam and has sensitivity close to that usually achieved with Giensma stained blood films. Grave et al on the other hand have used antibody detection ELISA for the diagnosis of
malaria. This test has 77% sensitivity and 91% specificity for plasmodium falciparum. Using these facilities, simultaneous detection of identical plasmodium falciparum antigen and antibody in both the mother and the baby shall provide a very strong evidence of transplacental transmission.

Keeping in view the various risks and complications associated with malaria during pregnancy, some sort of prophylactic approach should be adopted in endemic areas to reduce these problems. Nyirjeste4 and others have suggested chloroquine prophylaxis in endemic areas. They have reported that chloroquine prophylaxis during pregnancy protects against maternal malaria, foetal malaria, low birth weight and perinatal death rate.

We conclude with the suggestions that blood film for malarial parasite be included in the screening plan for neonatal sepsis and perinatal fever in the mothers; and ELISA facilities for detection of malarial antigens and antibodies should be made available at least in the large referral centers.

REFERENCES


