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EDITORIAL

Neonatal Outcome In Severe Malaria with Pregnancy

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ABSTRACT

Pregnant women are more vulnerable to malaria, because of changes in the immune system during pregnancy. It is known that malaria infection during pregnancy, induce a potentially harmful response, in the placenta and the fetus. This study designed to determine the outcome of the neonates in cases of severe malaria. Twenty- five cases observed during acute malarial attack proved by positive parasite in peripheral blood film with severe parasitaemia in different time in their third trimester. This observation depends on different parameters studied here. Seven stillborn (28%). Ten low birth weight (40%). Four with low Apgar score (16%). Six born prematurely (24%), two of them, ended in early neonatal death.

Further multi central studies with advanced measures recommended studying fetal response during acute attack of malaria.

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Introduction. Pregnancy increases susceptibility to malaria and pregnant women are particularly vulnerable to malaria and are more likely to develop clinical attacks of malaria and serious complications than non-pregnant women are of the same age. The increased susceptibility of the pregnant women to malaria thought to be, in part, the result of a certain degree of immune suppression during pregnancy required for fetal allograft retention [1, 9].

Malaria infection represents a major complication in pregnancy, it has serious consequences for the fetus development and outcome. It is known that malaria infection during pregnancy induces a potentially harmful response in the placenta and the fetus [2, 3, 4].

The effect of malaria on the placenta is consisting of degeneration of chorionic villi, formation of deposits of fibrin and malaria pigment, thickening of basement membrane, and accumulation of macrophages in the intervillous space. All those lead to deterioration of the placental functions [5]

The increased risk of malaria in pregnant women is associated with serious adverse effects on pregnancy causing abortion, preterm labor [10], intrauterine growth retardation [11], intra-uterine fetal death and low birth weight [8]. In addition to the effect of malaria on the fetus, malaria causes maternal anemia, which contributes significantly to maternal morbidity, and may indirectly related to maternal death by increasing the case fatality rate of post-partum hemorrhage [11]. Maternal malaria is also a risk factor for perinatal mortality, and may influence the infants´ mortality and morbidity by reducing the babies' birth weight [8].

Methodology. This was a prospective and observational complete coverage study (Cohort study). This study took place in the Academy Charity Teaching Hospital (ACTH) where about 2000 deliveries are registered annually, during 1st March 2003 to 31st October 2003 All cases were

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observed during acute Malarial attack proved by positive parasite in peripheral blood film with severe parasitaemia in different times in their third trimester. These observations depend on different parameters measured before medication, during and after it.

This study was based on performing ultrasound examination(Using LOGI PRO 100 ULTRASOUND MACHINE) by performing the biophysical profile and recording the details of the general health of the fetus together with the checking up for the basic information e.g. numbers of pregnancies, placental site and the most crucial point exclusion of the anomalies. After the initial medical management (history, examination& investigations) the basic information needed collected in the designed sheet. This information recorded from the first time on admission. Then they are followed during the subsequent admissions if indicated or at delivery time and the crucial point is the perinatal data registration. All the study group did not received any form of prophylactic drug through out the index pregnancy. All pregnant woman fulfilled the criteria for selection which are: those presented with symptoms and/or signs of malaria and proved to be with parasite in their peripheral blood film.

Those women supposed to be in late second trimester and/or in third trimester in their pregnancy. It should be a singleton pregnancy. The exclusion criteria are: Those who are at high-risk pregnancy other than malaria, in who is the change may be already expected. e.g. patient with pregnancy induced hypertension. Those who have gestational age, less than 26 weeks. Those with, congenitally malformed fetuses. Those who present, with other cause of febrile illness, even with malaria. e.g. acute pyelonephritis. Consent must be signed .

Forty-eight cases of severe malaria proved by history, examination and investigations were selected depending on the criteria mentioned. Only twenty-five cases completed the study, the rest some of them did not show themselves, some came late and no actual proper perinatal data collected from them (home delivery) although they came with significant results.

Data was collected and a master sheet was performed. The data was

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analyzed by SPSS, a soft program. Chi-square test was used.

Results. Out of 25 cases studied chart [1], there were 10 cases [40%] with low birth weight. Seven cases [28%] were stillborn and two cases died early in neonatal period [8%]. Therefore, the mortality is 36%. At time of delivery, 4 cases showed a significant low Apgar score [16%], and six cases delivered prematurely [24%].

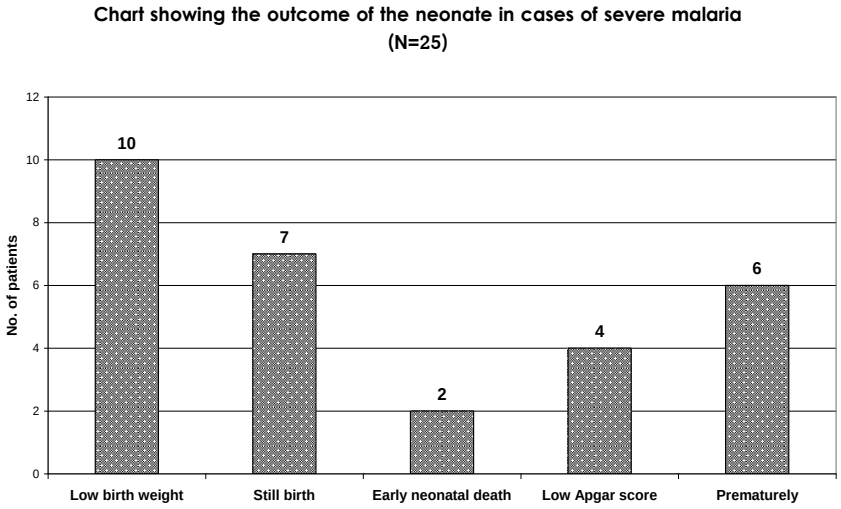

CHART (1)

Concerning the biophysical profile (BPP) , done for the study group in relation to the outcome, in chart [2], 12 cases [48%] had good biophysical profile at admission and on serial follow up. Six cases of that stillborn group expressed a very low biophysical profile only one case of this group expressed a good profile but was stillborn. The two neonatal deaths cases reported as low biophysical profile from the start. The all four cases of the low Apgar score group showed low biophysical profile as well.

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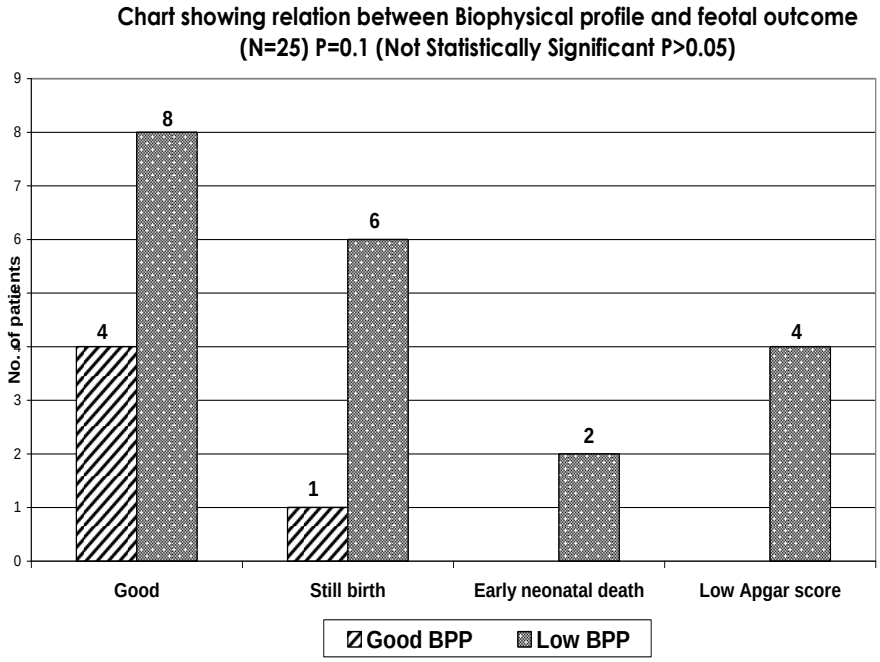

CHART (2)

Chart (3) explained the neonatal outcome in relation to the numbers of the attacks. Nine cases had no attack during the index pregnancy with good neonatal outcome, but four of this group- no attack group- had poor neonatal outcome. Similarly four cases had one attack came with poor neonatal outcome. Two cases had good neonatal outcome with history of two attacks, one of same group with poor neonatal outcome. Cases with three attacks were four, three of them with poor neonatal outcome, only one with good neonatal outcome.

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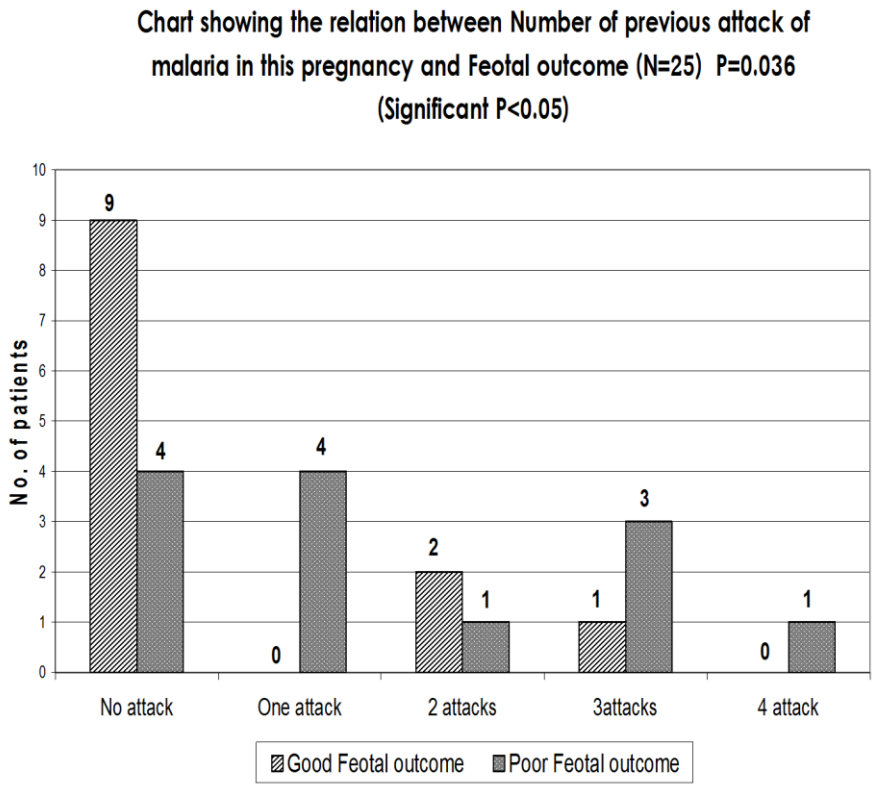

CHART (3)

Respecting the drug used in management of the cases, namely Quinine and artemether, chart (4) explained the relation between used drug and the neonatal outcome. In Quinine group, nine cases had good neonatal outcome, seven cases complicated with poor neonatal outcome. The Artemether group only three with good neonatal outcome but the rest, six cases, developed poor neonatal outcome. The entire artemether group received Quinine before Artemether administration.

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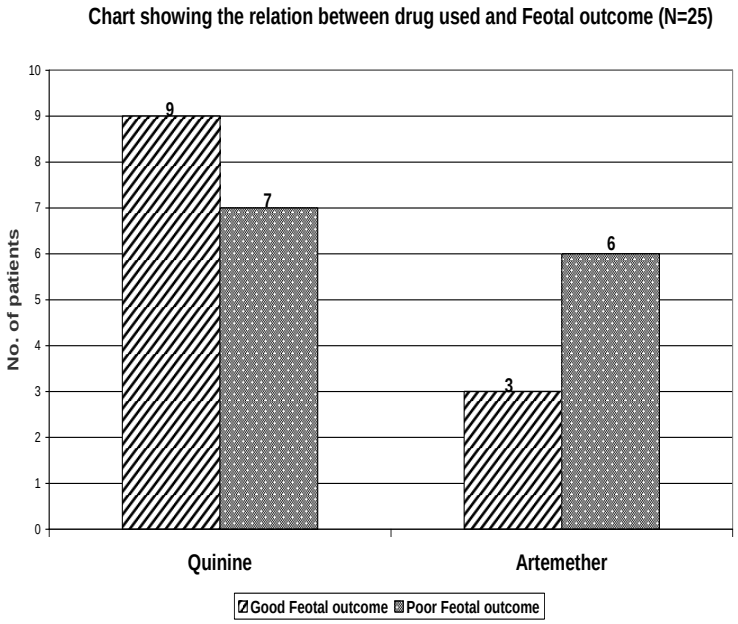

CHART (4)

Discussion. With full respect to the limited number of cases, still the significant of this results reflect and express at least part of the problem as an ice burg phenomena, because some of cases were self treated, or home treated, some not reported, only few of cases seen at hospitals in spite of that mortality of 36% had been reported. Referring to the parameters used, the number of attacks in relation to neonatal outcome, the P value = 0.036 which was significant.

Regard the relation of biophysical profile and to the neonatal outcome, the P value = 0.1 that was not statistically significant, but it appears that, it is clinically significant.

The entire artemether group received Quinine before Artemether administration this may raised the question of Quinine resistance,

Conclusions. This study supports a beneficial role for thinking how to proof and prevent those observational predictive changes for those fetuses. The study is not large enough to demonstrate all needs, so further study with advanced measures and multicentre study really highly recommended. Along with that, effort needed to adopt the prophylaxis regimens during pregnancy especially in the endemic and hyper endemic areas. Attention

towards improvement of the neonatal services, should be should be to face those in need to services.

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