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Incidence of Malaria Fever among Pregnant Women Attending Antenatal Clinic

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Abstract: *Pregnant women were analyzed for malaria infection, as malaria causes high rates of miscarriage and can lead to maternal death. Semi-immune pregnant women in areas of high transmission, malaria can result in miscarriage and low birth weight, especially during first and second pregnancies. 15 samples were analyzed and the results showed out of 15 samples tested only three appeared to be negative (20%) while samples were positive (80%). This is not unconnected with environmental conditions which favour mosquito breeding and perhaps the spread of malaria parasites. Plasmodium falciparum causes the most severe and prefund anemia with a significant risk of death. Therefore, it's also show from this research that the infection of malaria (++) range from (53-30%) while malaria (+) range from (26.70%) these shows that malaria (+++) level is the low.*

Keywords: *Pregnant, Malaria, Infection, Mosquito.*

Introduction

Malaria is a tropical disease caused by protozoan parasite of the genus plasmodium phylum anopheles. That causes an estimated incidence of 2 to 3 million deaths and 300 to 500 million clinical cases in world (Niickuro *et al*., 2018). Malaria is one of the most important problems in many countries especially in tropical area *(*Held *et al., 2021).* Malaria is caused by the parasite of the genus plasmodium of the four species of plasmodium falciparum most often cause serious morbidity and extensive *mortality (*Miller *et al., 2032).* Malaria parasitaemia is one of the most important causes of child mortality worldwide. The most frequentencountered in Nigeria and other part of the world is plasmodium falciparum which annually kill not less than 1 million children in Africa alone. This death toll is only one aspect of the global burden of malaria. P. falciparum is estimated to cause about half a billion episode of disease each year *(*Snow *et al., 2005)* and there are millions of course due to the parasite species plasmodium vivax plasmodium malaria, and plasmodium ovale. In region of high malaria transmission every member ofthe country might be chronically infected and in one Gambian village, it was found that about one quarter of all diseases were admitted to the hospital during the first 10 years of life *(*Snow *et al., 2001).* Malaria parasite are transmitted to human by the bite of an infected femaleanopheles mosquito (Babadoko *et al., 2007)* in Nigeria about 11% of death among pregnant woman and 35% of death among infants are malariarelated. It has been noted about

110 million people in Nigeria have malariaand more than 800 billion naira is spending on its treatment *(*Nsuteba *et al., 2001).* Malaria is the number one cause of parasitic diseases. However, the causative agent is known to be plasmodium transmitted by the bite of female anopheles' mosquito. Plasmodium was first isolated in the blood ofa patient in 1881 *(*Jawet *et al., 2010).*

Malaria is caused by obligate intracellular parasites, which live in host erythrocytes and remodel these cells to provide optimally for their own needs. It is a major public health problem in tropical areas, and it is estimated that malaria is responsible for 1 to 3 million deaths and 300 to 500 million infections annually. On the other hand typhoid fever is widely recognized as a major public health in most developing tropical countries. It is a systemic infectious disease characterized by an acute illness, the first typical manifestation of which are fever, headache, abdominal pain, relative brady cardia, splenomegaly and leucopenia (Lawless., 2020).

Young children who have not yet developed protective immunity against the most severe forms of the disease are at risk. Non-immune pregnant women as malaria causes high rates of miscarriage and can lead to maternal death. Semi-immune pregnant women in areas of high transmission, malaria can result in miscarriage and low birth weight, especially during first and second pregnancies (Michael *et al*., 2023).

Regardless of the soaring malaria inci-dence in endemic regions, a certain group of individuals seem to have more immunity to malaria than others. This could be accounted by several factors including haemoglobin vari-ants, ABO blood group system and enzyme action, among others (Otajevwo 2013). An in-vestigation into malaria in correlation with, for instance, ABO blood group has the potential of giving an insight into the pathogenesis of ma-laria and perhaps aid the control of this disease.
The link between ABO blood groups and the incidence of malaria parasitaemia or immu-nity to malaria is still unclear (Akinboye and Ogunrin Thakur and Verma 1992).

Sample Collection

The samples (blood) were collected from patient at Mala Kachallah Clinic Maiduguri, Borno state. Venous blood was obtained from prominent vein of individuals by lightening a tourniquet on the upper arm to increase blood pressure and to prevent venous return. The site was cleaned a sterilized using cotton wool soaked in methylated, needle attached to a syringe. Punctured the prominent vein with needle, then the tourniquet was loosened and blood obtained by gentle suction. After the blood had been drawn, cotton wool was used to apply pressure over the punctured site to prevent bleeding. Then the venous blood transferred into a sample tube containing Ethy1 Diamine Tetra acetic Acid (EDTA) and mixed gently to avoid clotting. (Sam - wobo and Asiweju 2014; Cheesbrough , 1991)

Thick films were made on a side by dropping the blood sample to a clean, grease free slide with the Conner of another slide a square or a circular patch of moderate thickness was made on the

thick. On the other slide a drop of blood that was smaller than the one for thick film was dropped on the slide. The edge of another glass slide was applied in front of the drop of the blood at an angelof 45, the blood was allowed to spread along it edge. The spreader slide as pushed forward and was kept at an angel to achieve a proper thick film with unbroken later of red blood cells with the film not touching the edge ofthe slide. Both slide as allowed to air dry and was been protected from dust,files and ants before staining. The name of the patient was written at the other end of the slide. (Okoroiwuljeoma Leticia *et al*., 2014).

Staining

The thick film was obtained by immersing the slide for 20-30 minutesin a staining jar containing Giemsa stain that was freshly diluted with 1.9 with buffer water. The slide was washed in buffered water for 3 minutes. The slide was stored upright to dry while thick film was first fixed in pure natural for 30 second by immersing it or by putting a few drops of methanol on the side. The slide was immersed in a freshly 5% Giemsa stainsolution for 20-30 minutes. The slide was flushed with tap water to preventdeposition of precipitate on the film. The slide was allowed to dry vertically(Shapiro *et al*., 2007).

Results and Discussions

Results Table: 1 Malaria parasite infection

Sample	Level of Infection
1	+
2	-
3	++
4	++
5	++
6	+
7	-
8	++
9	++
10	-
11	+
12	++
13	+
14	++
15	++

Discussion

Base on the result obtained it is obvious that there is relationship between malaria infection and pregnancy, out of 15 samples tested only three appeared to be negative (20%) while

samples were positive (80%). This is not unconnected with environmental condititon which favours mosquito breeding and perhaps the spread of malaria parasites. This result is a conformity with that of (Muller et al., 2007) which says that malaria infection in human is usually associated with low immunity. Plasmodium falciparum causes the most severe and prefund anemia with a significant risk of death. Therefore, it's also show from this research that the infection of malaria (++) range from (53-30%) while malaria (+) range from (26.70%) these shows that malaria (+++) level is the low.

Conclusion

The study highlights a significant incidence of malaria among pregnant women attending antenatal clinics, with 80% of the samples testing positive. This high prevalence highlights the susceptibility of pregnant women to malaria infection due to environmental conditions conducive to mosquito breeding and the lowered immunity often associated with pregnancy. The results align with existing research indicating that **Plasmodium falciparum** is a primary cause of severe malaria-related anemia and maternal health complications. These findings emphasize the need for intensified malaria control strategies, including improved environmental management, access to preventive measures, and targeted health education for pregnant women to mitigate the risks associated with malaria in this vulnerable population.

References

Babdoko, J. (2007) Global health reporting article relived on the5th December Chandramohan D, Green wood BM is there an interaction between human immune deficiency virus and plasmodiumfalciparium, Internet J epidemiol 1998; 27; 296-301.

Cheesbrough M (1991) medical laboratory manual for clinicalChemistry. Snap press, Enugu, Nigeria

Karunawa f, Kurtzhals j, doumbo, o.k (1998) The pathogenic Basis of Malaria. Nature 415: 673-679.

Lawless T.N, M.C Latham, L.S STEPHENSON S.N Kinoti, N and A.M pertet. "Iron supplementation improves appetite and grow in anaemic Kenyan primary school children" journal of nutrition. 124: 645-654, 1994

Michael RA, Begum Er, Mia MS, (2013), Burden of malaria at household level. A baselinereview in the advent of climate Change j Environ sc technology.

Miller, L.H: Baruch D.I: Marsh and Doumbo, O.K (2023). The pathogenic basis of malaria.Nature 415:763-579

Muller, immerman, PA, Reader J.C (2007). Plasmodium malaria and plasmodium oral. The bashfull malaria parasite. Tread in parasitology 23(6) : 278-83

Niickuro M. Perlmann, H; Salimon (2018). Epidemiology, malaria and anaemia. AM J Trop med hyg 33:517-525

OKoniwuIjeoma Leticia, salako LA, Okany C, Serum ferritin and other haematological measurement in apparently healthy adults with malaria parasitaemia in Lagos Nigeria. Trop med int health (2014); 5(8): 582-

Shapiro R.S, Dacie JV, lewis SM. Practical haematology 5 - edition churchbillivingstone.Edinburg (1954)

Snow R.N Trapeyf and Marsh, K. (2001): the past present and future of childhood malaria mortality in Africa treads parasitol. 17(12): 593