

TO STUDY THE OUTCOME OF LIFE THREATENING COMPLICATIONS IN PATIENTS WITH COMPLICATED MALARIA

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Article Info: Received 07 February 2020; Accepted 27 February 2020

DOI: <https://doi.org/10.32553/ijmbs.v4i2.1002>

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Conflict of interest: No conflict of interest.

Abstract

Background:

Method: This study was done at Department Of Medicine. All patients admitted with malaria in tertiary care Centre during the study period AIMS, Dewas from Sep 2018 to Aug 2019 were taken for the study after considering the inclusion and exclusion criteria. Our study is a clinical, prospective, observational and open study. Each patient was studied in detail with relevant clinical history and examination with following various investigations like peripheral smear for malarial parasite, complete blood count, renal function test, liver function test, blood sugar level, USG abdomen, chest x-ray, urine routine and micro and some special investigations like arterial blood gas analysis, bleeding profile.

Result: Total of 4 patients had developed hypoglycemia of which 1 had P.vivax, 1 had P.falciparum while 2 had mixed infection. Acidosis was seen in 25 patients in arterial blood gas analysis among which 21 patients had metabolic acidosis, 4 had mixed acidosis. 5 patients had developed ARDS and 5 patients had cerebral malaria.

Total 3 (6%) patient died in our study, amongst them 2 patient had mixed infection and 1 had complicated P.falciparum. The cause of death was cerebral malaria in all the case and MODS with ARDS. The entire patient died had multiple complications no mortality was there in patient with single complication.

Conclusion: Early detection of complications causing organ dysfunction utilizing Serum Creatinine >3mg/dl, total bilirubin >3mg/dl and Hb<8g/dl is valuable in diagnosing complicated malaria early and starting aggressive management, thereby preventing further morbidity and mortality.

Early detection of malaria and institution of prompt antimalarial can help to prevent complication of malaria. Early diagnosis of prompt complication and proper referral of patient to tertiary health care center can help to reduce the mortality and morbidity of the patient and gives a favorable outcome.

Keywords: Outcome, Complications, Malaria & Life.

Introduction

Malaria is one of the major public health problems in India. Around 1.5 million confirmed cases are reported annually by National Vector Borne Disease Control Programme. Malaria is curable if effective treatment is started early.¹

The plasmodium parasites are very specific with man as the only intermediate specific vertebrate host and female Anopheles mosquitoes as the vector and definitive host.² There has been increasing trend in the past few years for reporting various atypical clinical manifestations and complications of malaria.

Together with rising documentation of drug resistance worldwide the complications of malaria represent a global health menace which needs focused efforts to its resolution.

Considering the increase in number of cases of malaria with changing spectrum of presentation, problem of drug resistance, the present study was under taken with

objective of noting common and atypical presentation, complications, hematological and biochemical abnormality and their correlation with clinical severity outcome and prognosis in malaria.³

Material & Method

This study was done at Department Of Medicine. All patients admitted with malaria in tertiary care Centre during the study period AIMS, Dewas from Sep 2018 to Aug 2019 were taken for the study after considering the inclusion and exclusion criteria. Our study is a clinical, prospective, observational and open study. Each patient was studied in detail with relevant clinical history and examination with following various investigations like peripheral smear for malarial parasite, complete blood count, renal function test, liver function test, blood sugar level, USG abdomen, chest x-ray, urine routine and micro and some special investigations like arterial blood gas analysis, bleeding profile.

INCLUSION CRITERIA

- All the patients having fever and who had Malaria positive by RDT or by peripheral smear and had any one of the complication of malaria and who are classified as severe malaria as per WHO guidelines³⁰⁻³¹
- Age >13 year
- Patient giving consent for the study

EXCLUSION CRITERIA

- Age <13 years
- Who do not give consent
- Patient with comorbid conditions such as diabetes, hypertension, Koch's and pre-existing renal, heart, pulmonologic ailments and seizure disorder were excluded from study.

Results

Table 1: Comparison of complications in patients with complicated P.VIVAX and P.FALCIPARUM malaria

COMPLICATION	P.VIVAX (n=30)	P.FALCIPARUM (n=14)	MIXED (n=6)	TOTAL (n=50)
JAUNDICE	12 (40%)	7(50%)	4(66.67%)	23(46%)
ANEMIA (Hb<10g/dl)	18(60%)	8(57.14%)	6(100%)	32(64%)
RENAL FAILURE	12(40%)	8(57.14%)	6(100%)	26(52%)
CEREBRAL MALARIA	0(0%)	2(14.2%)	3(50%)	5(10%)
THROMBO CYTOPENIA	27(90%)	14(100%)	6(100%)	47(94%)
ARDS	1(2%)	3(21.4%)	1(16.67%)	5(10%)
DIC	0(0%)	1(7.14%)	0(0%)	1(2%)
HYPO- GLYCEMIA	1(2%)	1(7.14%)	2(4%)	4(8%)
ACIDOSIS IN ABGA	10(33%)	9(21.4%)	6(100%)	25(50%)

Thrombocytopenia is the most common in P.Vivax and P.Falciparum malaria which is seen in 27(90%) patients of P.vivax and 14(100%) patients of P.falciparum. Anaemia is the most common complication seen in 18(60%) of complicated P.vivax and 8(57.14%) patients of P.falciparum.

In complicated P.falciparum malaria renal failure was the second most common complication seen in 8 patients followed by jaundice in patients. While in P.vivax both jaundice and renal failure was seen in equal number of patients.

Total of 4 patients had developed hypoglycemia of which 1 had P.vivax, 1 had P.falciparum while 2 had mixed infection. Acidosis was seen in 25 patients in arterial blood gas analysis among which 21 patients had metabolic acidosis, 4 had mixed acidosis.

5 patients had developed ARDS and 5 patients had cerebral malaria.

Table 2: Mortality in malaria in our study:

	P.VIVAX (n=30)	P.FALCIPARUM (n=14)	MIXED (n=6)
MORTALITY	0	1	2

Total 3 (6%) patient died in our study, amongst them 2 patient had mixed infection and 1 had complicated P.falciparum. The cause of death was cerebral malaria in all the case and MODS with ARDS. All the patient died had multiple complications no mortality was there in patient with single complication.

Discussion

Cranston reported generalized convulsions in 21.31% of 441 cases of cerebral malaria from Rajasthan.⁴ 2% of P.VIVAX and 25% of P.FALCIPARUM had cerebral malaria in our study. Other complications noted in cerebral malaria patients were anemia 21%, renal failure 21% and jaundice 31%. 9.09% of renal failure and 6.8% of severe anemia in his study of 441 patients of cerebral malaria.⁵

64% of patients had Hb<10g/dl. Considering Hb<6g/dl as severe anemia the incidence was 28%. The lowest Hb noted in our study was 2.1g/dl. 20% of complicated P.VIVAX and 28.57% of complicated P.Falciparum cases had Hb<6g/dl. Other complications noted with anemia were renal failure 50%, Jaundice 64.28% and cerebral malaria 35.71%.

This is consistent with incidence of severe anemia in 26.04% of PF cases.⁶ Mean Hb noted was 8.5g/dl.

Thrombocytopenia (platelet <1Lac) occurred in 47cases (94%), 27cases (90%) in P.Vivax and 14 (100%) in P.Falciparum. This is consistent with incidence of thrombocytopenia in 66% of PF cases.⁷ Bajiya et al Rajasthan study reported 74% thrombocytopenia.⁷

ARDS developed in 5(10%) patients, 1 had complicated p.vivax malaria and 2 were complicated P.falciparum and 2 had mixed infection. 3.01% of ARDS in PF cases in 2001⁸ which was comparable to present study.

Conclusion

Early detection of complications causing organ dysfunction utilizing Serum Creatinine >3mg/dl, total bilirubin >3mg/dl and Hb<8g/dl is valuable in diagnosing complicated malaria early and starting aggressive management, thereby preventing further morbidity and mortality.

Early detection of malaria and institution of prompt antimalarial can help to prevent complication of malaria. Early diagnosis of prompt complication and proper

referral of patient to tertiary health care center can help to reduce the mortality and morbidity of the patient and gives a favorable outcome.

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