International Journal of Medical Science and Education

www.ijmse.com

Original Research Article

pISSN- 2348 4438 | eISSN-2349- 3208

ASSESSMENT OF CLINICAL PROFILE OF MALARIA AT SOUTHERN RAJASTHAN

Dr. Radhey Shyam Gupta

1. Associate professor, Department of Medicine, Pacific Medical College & Hospital, Bhillo ka Bedla, Udaipur, India

*Corresponding author – Dr. Radhey Shyam Gupta
Email id –Jaipur.hospital@gmail.com

Received:20/04/2019 ***Revised:10/06/2019*** ***Accepted:19/06/2019***

ABSTRACT

Background: Malaria is an ancient disease, epidemics were reported and various studies were conducted to halt its diseases cycle and implement the vector control measures. The diseases burden is widely distributed among subtropical, tropical and monsoon zones worldwide along with cultural and socio-economic factor. The most commonly associated parasite namely Plasmodium falciparum is responsible for the most serious and life-threatening complications which all are termed as medical emergencies. **Material & Methods:** In present prospective study 100 patients of malaria Patients were enrolled from outdoor and from ward by simple random sampling. Clearance from Institutional Ethics Committee was taken before start of study.**Results:** The most presenting symptom was fever which was present in 100% of cases which was followed by headache and body ache which was present in 98% cases, followed by nausea and vomiting in 69% cases. Weakness was present among64% patients and abdominal pain was present in 31% patients. Splenomegaly was the most common organomegaly finding, which was present in 26% and hepatomegaly was present in 21% patients. Among 8 patients there was both Hepato-splenomegaly present.72% patients had hyperbilirubineamia, out of them 6% patients had serum bilirubin levels of more than >3 gm% and icterus was present in these 6% patients.53% had thrombocytopenia and serum creatinine values were higher among 22% of patients. **Conclusion:** Majority of patients were diagnosed with Plasmodium falciparum infection in compared to Plasmodium vivax infection. Fever was the most common presenting symptom which was high grade in majority of the patients and associated with rigors. There was thrombocytopenia, deranged liver function and renal functions also reported.

Keywords: Malaria, P Falciparum, P Vivax.

INTRODUCTION

Malaria is an ancient disease, epidemics were reported and various studies were conducted to halt its diseases cycle and implement the vector control measures. The diseases burden is widely distributed among subtropical, tropical and monsoon zones worldwide along with cultural and socio-economic factors **(1).** The most commonly associated parasite namely *Plasmodium falciparum* is responsible for the most serious and life-threatening complications which all are termed as medical emergencies. Majority of malarial epidemics were associated with high morbidity and mortality because the regions where the disease has its high prevalence and incidence the access and quality of medical care is not up to the mark and has limited access **(2).** For the community level mass screening of malaria microscopic

examination of blood smear by the help of thick and thin blood film is widely implemented in India and these procedures are the gold standard methods for malaria diagnosis **(3).**

As stated in many previous studies and reports of world health organization, malaria is threat to global health. As per reports of Centers for Disease Control and Prevention, it was reported that near about 2.6 billion people were at risk of getting malaria infection and the approximate number of infections reported annually were 435 million **(4).** The disease cycle of malaria is explained in various studies, malaria is caused by parasite plasmodia which are transmitted to by vector female Anopheles mosquito. After getting bitten by infected female Anopheles, there are three stages of symptomatic phase namely cold stage and hot stage followed by sweating stage. Clinical profile of malaria comprises from mild to severe stages and complication are associated with type of species of parasite, infective dose, immunity status of host, associated conditions like malnutrition or any chronic diseases. The severity of symptoms and febrile paroxysms are also depending on species type of parasite. In India, Plasmodium vivax and Plasmodium falciparum are most common species reported **(5).**

The clinical profile of malaria is very wide and diverse in presentation. The symptoms and signs of malaria have to be differentiated to diagnose the disease accurately. Therefore, along with clinical diagnosis we have to detect the malarial parasite and its products in patients' blood especially in endemic areas **(6).** Malaria is a major public health problem in India. Hence, we conducted present study to assess the clinical profile of malaria and its disease burden among patients attending our tertiary care centre.

MATERIALS & METHODS

The present prospective study was conducted at department of general medicine of our tertiary care hospital. The study duration was of one year from August 2017 to July 2018. A sample size of 100 was calculated at 95% confidence interval at 10% acceptable margin of error by epi info software version 7.2. Patients were enrolled from outdoor and from ward by simple random sampling. Clearance from Institutional Ethics Committee was taken before start of study. Written informed consent was taken from each study participant.

The data were collected by detailed history, general physical and clinical examination from each patient (above 12 years of age) after taking the written consent. Danger signs and symptoms were assessed such as dehydration, altered sensorium, icterus, convulsion and examination was done for hepatomegaly and splenomegaly. The hematological investigation was done for thick and thin blood smears for type and level of parasitemia along with complete blood count and erythrocyte sedimentation rate. Data analysis was carried out using SPSS v22. All tests were done at alpha (level significance) of 5%; means a significant association present if p value was less than 0.05.

RESULTS

In the present study we enrolled 100 patients who were aged from 13 to 38 years. The mean age of the enrolled pregnant women was 21.46 ± 6.73 years. There was no patient in the present study that aged less than 12 years of age. Out of total patients diagnosed with malaria 58% were male and 42% were females. Majority of cases in the present study were diagnosed with plasmodium falciparum in 67% cases and 31% patients had infection with plasmodium vivax and only 2% cases had mixed infection with both of species. On the assessment of fever, it was found that 89% cases had high grade fever, rigors were present in 63% cases and fever was intermittent in 96% cases. (Table-1)

Table No.-1: distribution according to type of species and pattern of fever

Fever		No. of patients
Species type	P. falciparum	67%
	P. vivax	31%
	Mixed infection	02%
Fever Grade	High	89%
	Low	11%
Rigors	Present	63%
	Absent	37%
Fever Type	Intermittent	96%
	Continuous	4%

In the present study, the most presenting symptom was fever which was present in 100% of cases which was followed by headache and body ache which was present in 98% cases, followed by nausea and vomiting in 69% cases. Weakness was present among64% patients and abdominal pain was present in 31% patients.

Table No.-2: distribution of study participants according to presenting symptoms

Presenting Symptoms	No. of patients (%)
Fever	100%
Headache and Body ache	98%
Nausea & vomiting	69%
Weakness	64%
Abdominal Pain	31%

In the present study, splenomegaly was the most common organomegaly finding, which was present in 26% patients which was followed by hepatomegaly was present in 21% patients. Among 8 patients there were both Hepato-splenomegalies present. Among rest of cases there was no organomegaly was found by the palpation method. Out of the total patients, 72% patients had hyperbilirubineamia. Out of them 6% patients had serum bilirubin levels of more than >3 gm% and icterus was present in these 6% patients. Out of the total patients, 53% had thrombocytopenia. In present study, none of patients had cardio-vascular symptoms and complications. Out of the total patients, serum urea levels were in normal limits however, serum creatinine values were higher among 22% of patients. There was no other morbidity and mortality reported in present study.

Table No.-3: distribution according to organomegaly in the patients

Findings	No. of patients
Splenomegaly	26%
Hepatomegaly	21%
Hepatosplenomegaly	8%
Hyperbilirubineamia	72%
icterus	6%
thrombocytopenia	53%
Raised serum creatinine	22%

DISCUSSION

As stated in many previous studies and reports of world health organization, malaria is threat to global health. As per reports of Centers for Disease Control and Prevention, it was reported that near about 2.6 billion people were at risk of getting malaria infection and the approximate number of infections reported annually were 435 million. Several previous studies stated that there was increasing incidence of resistant strains of Plasmodia reported. The prevalence of P. falciparum was reportedly increasing worldwide. Majority of cases in the present study were diagnosed with plasmodium falciparum in 67% cases and 31% patients had infection with *Plasmodium Vivax* and only 2% cases had mixed infection with both of species. Similar results were obtained in a study conducted by Kashinkundi D et al among patients with malaria and found that53% patients had infection with *Plasmodium Vivax* and 48% patients had infection with *plasmodium falciparum* (7). Similar results were obtained in a study conducted by Nadkar M et al among patients with malaria and found that 68% patients had infection with *Plasmodium Vivax* and 32% patients had infection with plasmodium falciparum**(8).**

In the present study we enrolled 100 patients who were aged from 13 to 38 years. The mean age of the enrolled pregnant women was 21.46 ± 6.73 years. There was no patient in the present study that aged less than 12 years of age. Out of total patients diagnosed with malaria 58% were male and 42% were females. On the assessment of fever, it was found that 89% cases had high grade fever, rigors were present in 63% cases and fever was intermittent in 96% cases. Similar results were obtained in a study conducted by Taviad P et al among patients with malaria and found that fever was the presenting complaint in 100% of patients, out of them 84% patient had high grade fever out of them 28% patients had rigors. Among the total study participants altered sensorium was reported 16% of patients which was followed by convulsions in 10% patients and bleeding tendencies were reported in 8% patients **(9).**

In the present study, the most presenting symptom was fever which was present in 100% of cases which was followed by headache and body ache which was present

in 98% cases, followed by nausea and vomiting in 69% cases. Weakness was present among64% patients and abdominal pain was present in 31% patients. Similar results were obtained in a study conducted by Dabadghao V et al among patients with malaria and found that fever was the presenting complaint in 100% of patients which was of intermittent type. Along with that malaise and body ache was also present in all patients. Vomiting was present in 10% patients and melaena was present in 5% patients.15% patient present with decreased urine output and 30%cases had yellowish discoloration of sclera **(10).**

In the present study, splenomegaly was the most common organomegaly finding, which was present in 26% patients which was followed by hepatomegaly was present in 21% patients. Among 8 patients there was both Hepato-splenomegaly present. Among rest of cases there was no organomegaly was found by the palpation method. Out of the total patients, 72% patients had hyperbilirubineamia. Out of them 6% patients had serum bilirubin levels of more than >3 gm% and icterus was present in these 6% patients. Out of the total patients, 53% had thrombocytopenia. In present study, none of patients had cardio-vascular symptoms and complications. Out of the total patients, serum urea levels were in normal limits however, serum creatinine values were higher among 22% of patients. There was no other morbidity and mortality reported in present study. Similar results were obtained in a study conducted by Gupta B et al among patients with malaria and found significant thrombocytopenia **(11).** Similar results were obtained in a study conducted by Arévalo-Herrera M et al among patients with malaria and found hyperbilirubineamia in 16% cases and proteinuria along with raised creatinine levels among 47% patients **(12).**Similar results were obtained in a study conducted by Kulkarni V et al among patients with malaria and found hepatomegaly and splenomegaly among 5% cases **(13).**

CONCLUSION

We concluded from the present study that majority of patients were diagnosed with Plasmodium falciparum infection in compared to *Plasmodium vivax* infection. Fever was the most common presenting symptom which was high grade in majority of the patients and associated with rigors. There was thrombocytopenia, deranged liver function and renal functions also reported. We suggest more elaborative studies with the large number of cases to generalize the study results.

REFERENCES

1. Pakalapati D, Garg S, Middha S, Kochar A, Subudhi AK, Arunachalam BP, et al. Comparative evaluation of microscopy, OptiMAL® and 18S rRNA gene based multiplex PCR for detection of Plasmodium falciparum & Plasmodium vivax from field isolates of Bikaner, India. Asian Pac J Trop Med [Internet]. 2013 May 13;6(5):346–51. Available from: http://www.ncbi.nlm.nih.gov/pubmed/23608372
2. Elyazar IRF, Hay SI, Baird JK. Malaria distribution, prevalence, drug resistance and control in Indonesia. Adv Parasitol [Internet]. 2011;74:41–175. Available from: http://www.ncbi.nlm.nih.gov/pubmed/21295677
3. Mangal P, Mittal S, Kachhawa K, Agrawal D, Rath B, Kumar S. Analysis of the clinical profile in patients with Plasmodium falciparum malaria and its association with parasite density. J Glob Infect Dis [Internet]. 2017;9(2):60. Available from: http://www.jgid.org/text.asp?2017/9/2/60/201626
4. Roy M, Bouma MJ, Ionides EL, Dhiman RC, Pascual M. The potential elimination of Plasmodium vivax malaria by relapse treatment: insights from a transmission model and surveillance data from NW India. PLoS Negl Trop Dis [Internet]. 2013;7(1):e1979. Available from: http://www.ncbi.nlm.nih.gov/pubmed/23326611
5. Bartoloni A, Zammarchi L. Clinical aspects of uncomplicated and severe malaria. Mediterr J Hematol Infect Dis [Internet]. 2012;4(1):e2012026. Available from: http://www.ncbi.nlm.nih.gov/pubmed/22708041
6. Chery L, Maki JN, Mascarenhas A, Walke JT, Gawas P, Almeida A, et al. Demographic and clinical profiles of Plasmodium falciparum and Plasmodium vivax patients at a tertiary care centre in southwestern India. Malar J [Internet]. 2016;15(1):569. Available from: http://malariajournal.biomedcentral.com/articles/10.1186/s12936-016-1619-5
7. kashinkunti D G, Dhananjaya M. Clinical Profile of Severe Plasmodium vivax Malaria in a Tertiary Care Centre of North Karnataka. Int J Sci Res Publ [Internet]. 2013;3(7):2250–3153. Available from: www.ijsrp.org
8. Nadkar MY, Huchche AM, Singh R, Pazare AR.

Clinical profile of severe Plasmodium vivax malaria in a tertiary care centre in Mumbai from June 2010-January 2011. J Assoc Physicians India [Internet]. 2012 Oct;60:11–3. Available from: http://www.ncbi.nlm.nih.gov/pubmed/23777018
9. Taviad PP, Javadekar TB, Selot BA, Chaudhari VP. Socio demographic and clinical features of the malaria cases. Natl J Community Med [Internet]. 2012;3(1):94–6. Available from: http://njcmindia.org/uploads/3-1_94-96.pdf
10. Dabadghao VS, Singh VB, Sharma D, Meena BL. A Study Of The Clinical Profile Of Malaria And Its Complications. Int J Cur Res Rev [Internet]. 2016;8(1). Available from: http://ijcrr.com/uploads/363_pdf.pdf
11. Gupta BK, Gupta A, Nehra HR, Balotia HR, Meena SL, Kumar S. Clinical Profile and Prognostic Indicators in Adults Hospitalized with Severe Malaria Caused by Different Plasmodium Species. Infect Dis Res Treat [Internet]. 2015 Jan 18;8:IDRT.S34039. Available from: http://journals.sagepub.com/doi/10.4137/IDRT.S34039
12. Arévalo-Herrera M, Lopez-Perez M, Medina L, Moreno A, Gutierrez JB, Herrera S. Clinical profile of Plasmodium falciparum and Plasmodium vivax infections in low and unstable malaria transmission settings of Colombia. Malar J [Internet]. 2015 Dec 11;14(1):154. Available from: http://www.malariajournal.com/content/14/1/154
13. Kulkarni VK, Agrawal K. A study of clinical profile of malaria with special reference to complications and outcome. Int J Adv Med [Internet]. 2017 Mar 23;4(2):317. Available from: http://www.ijmedicine.com/index.php/ijam/article/view/534

How to cite this article: Gupta RS, Assessment of clinical profile of Malaria at southern Rajasthan. Int.J.Med.Sci.Educ 2019;6(2):91-95