

Original Article

EPIDEMIOLOGICAL TRENDS OF MALARIA CASES IN RURAL HEALTH AND TRAINING CENTRE OF MADHYA PRADESH

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ABSTRACT

Background: Malaria is a well-known disease and it continues to be a major public health problem at the start of new millennium. The problem is persistent not only amongst the city dwellers but also amongst the rural population. The problem in rural India is that the settlements are difficult to approach, road and transport facilities are minimal and health care facilities are scarce. The need of the study is to study the hospital based proportion of fever cases being diagnosed as malaria and determines the trend of malaria.

Methods: A retrospective observational study was carried out at rural health and training centre at Ratua village regarding malaria cases, all suspected fever cases were reported to centre sent for peripheral blood examination in laboratory.

Results: In the present study from (2006-2013) a total of 4454 (7%) fever suspected cases sent for malaria diagnosis in rural training health centre out of that 389(8.7%) came positive for malaria antigen. According to types of plasmodium species plasmodium vivax and Plasmodium falciparum accounted for 95.1% and 4.8% of malaria morbidity respectively. Malaria was reported in all age groups and both sexes, but the 11-20 year age group were affected more 93 (24%).

Conclusion: P.vivax was the most common type of malaria. In the studied area malaria was common among males than females, commonly affected age group were between 11-20 years of age.

Keywords: Epidemiological Trend, Malaria, Rural Area

INTRODUCTION

Malaria is a well-known disease and it continues to be a major public health problem at the start of new millennium. The problem is persistent not only amongst the city dwellers but also amongst the rural population. The problem in rural India is that the settlements are difficult to approach, road and transport facilities are minimal and health care facilities are scarce¹. Malaria is a protozoan disease caused by parasites of the genus Plasmodium. It is one of the leading causes of illness and death in the world. It is the leading cause of death in children under the age of 5 years and pregnant women in developing countries². Malaria is one of the important public health problems in India by considering its prevalence, virulence and drug resistance³. It has been identified that the incidence of malaria increases with the onset of monsoon (June to October), as the water logging favours mosquito breeding and thus end up in transmission of the disease⁴. Malaria imposes great socio-economic burden on humanity and with six other diseases like diar-

rhoea, HIV/AIDS, tuberculosis, measles, hepatitis B and pneumonia account for 85% of Global infectious disease burden⁵.

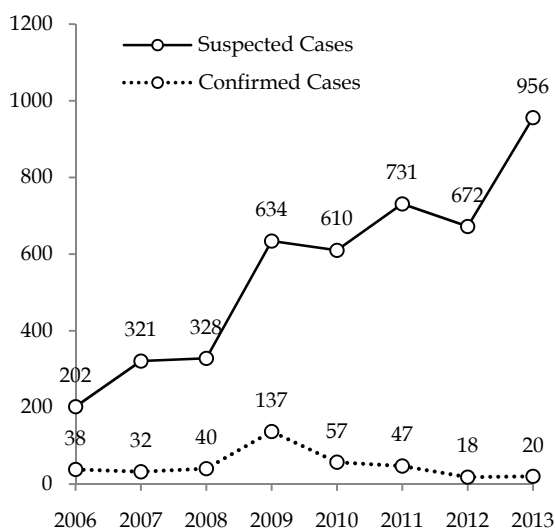
The need of the study is to study the hospital based proportion of fever cases being diagnosed as malaria and to determine the epidemiological trend of malaria.

MATERIAL & METHOD

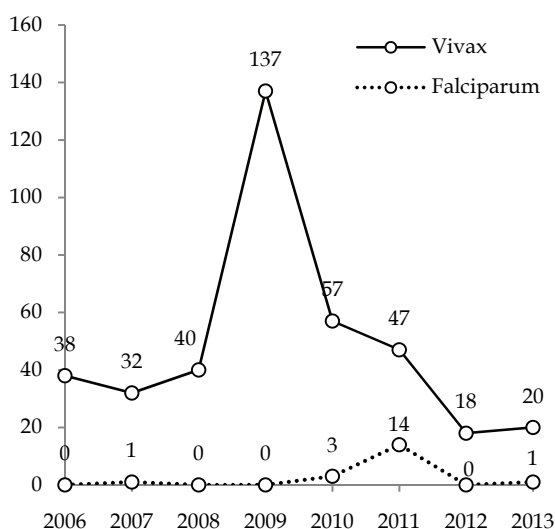
A retrospective observational study was carried out at rural health and training centre at Ratua village regarding malaria cases, all suspected fever cases were reported to centre sent for peripheral blood examination in laboratory. The diagnosis of malaria was done using advance malaria PAN+ Pf card Made by J.Mitra pharmaceutical. Peripheral blood smears examination records of all patients who tested for malaria in RHTC, over a period of 8 years i.e. 2006-2013 were analysed. The various epidemiological parameters were studied like age, sex and species of malaria.

RESULTS

During the study period (2006–2013) a total of 63196 patients were reported out of that 4454 (7%) fever cases were suspected for malaria and laboratory investigation done for malaria diagnosis in rural training and health centre, out of total cases 389 (8.7%) were confirmed microscopically and through malaria antigen card in other words slide positivity rate (SPR) for malaria cases were (8.7%). Majority of fever cases i.e. 10.34% reported in 2012. There was a fluctuating trend of malaria within the last decade, with the minimum (18) number of microscopically confirmed malaria cases being reported in 2012 and the maximum(137) microscopically confirmed cases of malaria being reported in 2009 (Graph 1).



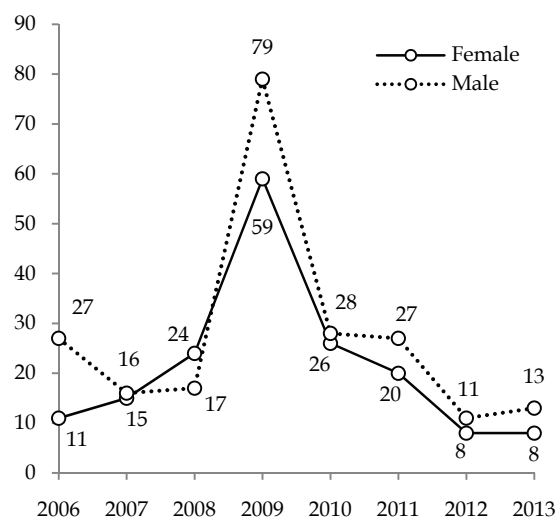
Graph: 1 Distribution of suspected fever cases and malaria cases from 2006-2013



Graph: 2 Distribution of Malaria Cases according to their Type

Graph 2, shows distribution of malaria cases according to their types and years of occurrence, plasmodium vivax were most common (95%) reported in each year in the study area and plasmodium falciparum accounted for 4.8%. The trend of P. Falciparum cases were near constant from 200-2010 but in 2011 to be reported six time higher than previous i.e. 29.7%

Trend of malaria cases according to their gender in the study area males were more affected(54%) than females (46%) by malaria parasites but vary year to year (Graph 3). Malaria was reported in all age groups in the area but the age group of 11–20 years were affected more with a prevalence rate of 93 (23.9%) followed by 6–10years and 21–30 years with the prevalence rate 87 (22.3%) and 71 (18.2%) respectively. Prevalence of malaria in up to 5 years of age were also high i.e. 14.9% (Table1).



Graph 3: Distribution of Malaria cases according to year & their Gender

DISCUSSION

In the present study fluctuating trend was observed during study period. Malaria cases were decreases in number from year 2010-2013 and very less number of cases reported in 2012. Highernumber of cases was found in 2009. In the present study the frequency of P. vivax cases was remarkably high with slight increase in P. falciparum cases, while the study conducted by I Jamaiah et al⁶ they found Plasmodium falciparum was the mostcommon species(57%) reported in their study followed by Plasmodium vivax(38%) and 5%mixed infection . Similar findings also reported in the study of Abebe Alemu et al² they found Plasmodium falciparum was the predominant species in the study area and accounted for 75% of malaria morbidity, difference may be due to difference in setting of the study, butin the study conducted by Rathod CC et al⁷, they reported out of 781 slide positive patients 443 (56.7%) were P.falciparum cases, 327 (41.9%) were P. Vivax cases and 11 (1.4%) were mixed infection.

Table 1: Distribution of Malaria Cases according to their age groups

YEAR	0-5 YR (%)	6-10YR (%)	11-20YR (%)	21-30YR (%)	31-40YR (%)	41-50YR (%)	> 50YR (%)
2006	7 (18.4%)	6 (15.7%)	9 (23.6%)	6 (15.7%)	5 (13.1%)	2 (5.2%)	3 (7.8%)
2007	8 (25%)	4 (12.5%)	5 (15.6%)	9 (28.1%)	1 (3.1%)	0 (0%)	4(12.5%)
2008	5 (12.5%)	7 (17.5%)	9 (22.5%)	8 (20%)	3 (7.5%)	2 (5%)	6 (15%)
2009	17(12.4%)	30(21.8%)	35(25.5%)	24(17.5%)	10 (7.2%)	10 (7.2%)	11(8.0%)
2010	7 (12.2%)	23(40.3%)	12(21.0%)	10(17.5%)	0 (0%)	4 (7.0%)	1 (1.7%)
2011	9 (19.1%)	5 (10.6%)	12(25.5%)	11(23.4%)	5 (10.6%)	2 (4.2%)	3 (6.3%)
2012	1 (5.5%)	7 (38.8%)	4 (22.2%)	2 (11.1%)	0 (0%)	0 (0%)	4(22.2%)
2013	4 (20%)	5 (25%)	7 (35%)	1 (5%)	1 (5%)	0 (0%)	3 (10%)
Total	58(14.91%)	87(22.36%)	93(23.9%)	71(18.25%)	25(6.4%)	20(5.14%)	35(8.7%)

In the present study distribution of malaria cases according to gender there were more in male (54%), the study conducted by A. Praveen kumar et al⁸, they reported (71.45) of male, may be difference in percentage due to study setting. Malaria case according to age group 11-20 years (29.3%) in present study in contrast study done by A Praveen Kumar in Rajasthan they reported (71.4%) malaria cases in 15-44 age group, the present difference may be due to difference in area and they club age groups, another study done by Abebe Alemu et al² they also reported similar type of finding of A Praveen kumar study. In the present study percentage of malaria cases up to the age of 5 years were 14.9% but the study conducted by I Jamaiah et al⁶ in Malasiya Kulalampur reported 51% of malaria cases in under five years of age, the present difference may be due to our study was done in rural area and primary health centre setting.

CONCLUSION

In the present study reported proportion of fever cases were 7% of total cases and out of total fever cases 8.73% of came positive for malaria (SPR 8.73%). P. Vivax was the most common type of malaria. In the studied area malaria was common among males than females, commonly affected age group were between 11-20 years of age. Therefore, control activities should be continued in a strengthened manner in the study area considering both P. falciparum and P. vivax.

RECOMMENDATION

It is suggested that adequate vector control measures associated with active surveillance will certainly reduce the malaria transmission in this region. Moreover, Implementation of regular training programs, work-

shops and other modes, to enhance the prescription patterns among prescribers should be encouraged for better patient care. High risk groups have to utilize the personal prophylactic measures to prevent mosquito bite and community based action programmes also essential to arrest the vector breeding sources in the surroundings.

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