

CLINICO-EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH FEBRILE ILLNESS ATTENDING MALARIA CLINIC AT MEDICAL COLLEGE HOSPITAL OF SURAT, GUJARAT, INDIA

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ABSTRACT

Background: Febrile illnesses are pre-eminent contributors to morbidity and mortality. As one of the common cause, malaria is a potentially life threatening parasitic disease. Passive surveillance of malaria is carried out by primary health centers, malaria clinics, community health centers and other secondary and tertiary level health institutions that patients visit for treatment. Early diagnosis and complete treatment is one of the key strategies of national vector borne disease control programme.

Aims & Objective: A study was undertaken to study the clinico-epidemiological and laboratory profile of the fever cases.

Materials and Methods: It is a descriptive, cross-sectional hospital based study conducted at malaria clinic at medical college hospital of Surat, Gujarat, India.

Results: The most common symptom as reported by the patients was fever with rigor (32.37%). Proportion of body ache, cough, headache and fever constituted 17.40%, 13.95%, 11.81% and 11.35% symptoms as reported by the study population. Analysis of the result of PS for MP reveals that large number of the patients (84.0%) did not show malaria parasite in their blood smear. Out of positive slides, 84 % were Plasmodium vivax whereas less than 16 % P. falciparum.

Conclusion: Malaria clinic functioning at New civil hospital, Surat can act as one of the important surveillance center for malaria in Surat city as well as in South Gujarat. Relationship of different symptoms with peripheral blood smears positive for malaria is not found.

Key Words: Febrile Illness; Malaria Clinic; Passive Surveillance

Introduction

Malaria is truly disease due to environmental deterioration, once thought to be "rural" has acquired urban dimensions.

The development and spread of drug-resistant strains of malaria parasites and insecticide-tolerant strains of the mosquito vector have been identified as key factors in this resurgence.^[1]

In India, urban malaria has emerged as major public health problem in many small, medium and metropolitan cities. About 10% of the total cases of malaria are reported from in urban areas. Increasing urbanization along with haphazard and unplanned growth of towns has resulted in creation of "urban slums" with poor housing and sanitary conditions, promoting vector mosquito breeding potential for malaria.^[2] Inadequate health infrastructure and deficient water supply leading to water storage practices in artificial containers is also responsible for increasing cases of malaria in urban area. Surat city is known world over for its glorious trade and commerce activities. Surat, which is famous for its

diamond and textile industries, is home to the highest percentage of migrant population in India. Migrated people, who are not immune, are more susceptible to malaria infection.^[3]

Malaria surveillance connotes the maintenance of an on-going watch over the status of malaria in a group or community. It provides a basis for measuring the effectiveness of anti-malaria programme. Passive surveillance is the regular or periodic collection of data from case reports or registers in health care facilities at which patients seek care at their discretion.^[4] Special services like malaria clinic are crucial for early diagnosis and complete treatment which one of the key strategies of the malaria Control. All fever cases clinically suspected of malaria should be investigated for confirmation of malaria by either microscopy or Rapid Diagnostic Test. Since the epidemiological factors differ with geographical variations; clinico-epidemiological data will help early diagnosis and its management. Early diagnosis and correct treatment according to national guidelines will help to curtail extent of mortality. Our study may guide to review planning for better passive surveillance at new civil hospital, Surat.

Materials and Methods

After the approval of institutional review board of the government medical college, Surat, this cross-sectional & hospital based study was carried out at malaria clinic in New Civil Hospital, Surat. For ethical considerations, study participants were educated about nature and purpose of the study. After obtaining the written and informed consent, personal interview was conducted with the help of predesigned, pre-tested & structured questionnaire that included basic socio-demographic, clinical symptoms and signs, admission diagnosis, laboratory investigations and prescribed medications. All patients attending malaria clinic were interviewed daily from December 2006 to March 2007.

Inclusion criteria for the patients: (i) Patients, coming to the malaria clinic for peripheral smear for malaria parasites (PS for MP); (ii) Patients attending outpatient departments of different departments of New Civil Hospital, Surat, suspected as cases of malaria and referred by the doctors were enrolled for this study.

Exclusion criteria for the patients: Patients coming to emergency were not included.

Statistical Analysis: Microsoft Excel 2007 was used for data tabulation and analysis. Proportions and percentages were used as statistical measures.

Results

Age wise analysis of the data shows that patients between 15 - 54 years constitute 70.8% of the study population group (Figure 1). 22.54 % of total patients during study period are of 0-15 years of pediatric age group. Mean age is 23.70 years for male and 26.50 years for female. Gender wise analysis of the data reveals male to female ratio is 1.34:1. Most of respondents are industrial workers, housewives and students (Table 1).

The most common symptom as reported by the patients was fever with rigor (32.37%). Proportion of body ache, cough, headache and fever constituted 17.40%, 13.95%, 11.81% and 11.35% symptoms as reported by the study population (Table 2). Fever with or without rigor and body ache are the commonest symptoms and constituted a large proportion (61.11%) amongst all the symptoms with which patients reported to this hospital.

Analysis of the result of peripheral blood smear for

malaria parasite (Table 3) reveals that large number of the patients (84.0%) did not show malaria parasite in their blood smear.

Table-1: Occupation wise distribution of study population

Occupation	No.	%
Labor	84	16.8
Factory worker	64	12.8
Government employee	18	3.6
Embroidery worker	14	2.8
House wife	108	21.6
Student	115	23.0
Vendor, Computer operator	3	0.6
Rickshaw driver, Security guard, Salesman	18	3.6
Unemployed	30	6.0
Not applicable (<5 years)	46	9.2
Total	500	100

Table-2: Distribution of reported symptoms in study population

Symptoms	No.	%
Fever	122	11.34
Fever with rigor	348	32.37
Headache	127	11.81
Body ache	187	17.40
Cough	150	13.95
Common Cold	49	4.55
Vomiting	37	3.44
Pain in abdomen	55	5.12

Table-3: Distribution of result of peripheral blood smear for malaria parasite

Result of PSMP	No.	%
P vivax trophozoite	67	13.4
P falciparum trophozoite	7	1.4
P falciparum gametocyte	6	1.2
Slide negative	420	84.0
Total	500	100

Table-4: Practices revealing anti-malaria treatment among slide positive & slide negative patients

Result of Slide	Anti -malaria treatment		Total (%)
	Given (%)	Not given (%)	
Positive	80 (17.00)	00	80 (16.00)
Negative	342 (83)	78 (88.63)	420 (84)
Total	412 (82.40)	88 (17.60)	500 (100)

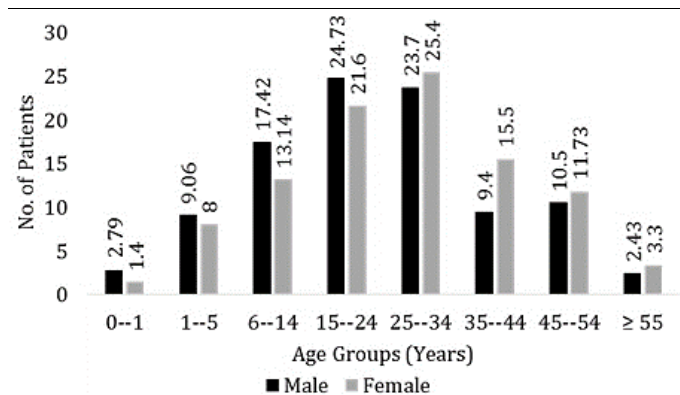


Figure-1: Age and gender wise distribution of study population

Out of positive slides, 16.25% slides showed Plasmodium falciparum trophozoite & gametocyte, rest 83.75% were positive showing P vivax trophozoite. Total 83% of slide negative patients were treated with Chloroquine tablet

(Table 4). Deficiency in malaria diagnosis makes health facility data unreliable for monitoring trends in malaria morbidity and for evaluating impacts of malaria interventions.

Discussion

Most of the patients attending malaria clinic of medical college hospital belong to productive age group. Paltial Palat et al.^[5] has also shown that Plasmodium infection was more common in the age group 16-40. Saum et al.^[6] has calculated the mean work days lost was 10.26 days in their study. This illness period may lead to considerable economic burden to family of the affected. Wasnik PN^[7] et al had observed Fever with or without rigor is the commonest symptoms in their study at medical college hospital, Nagpur. Quality assurance of microscopy is necessary as large number of slides are negative for malaria parasite. Shanker Matta et al.^[8] had shown that they showed 28.5% error in reporting negative slide. More than one fifth patients slide negative patients were treated with anti-malaria treatment. This observation shows that malaria is commonly overdiagnosed among patients with febrile illness. Yaw A. Afrane et al.^[9] has found Sensitivity and specificity of clinicians' diagnoses were 60.1% (95% CI: 61.1267.5) and 75.0% (95% CI: 30.8235.7), respectively. In one study of complicated malaria, Hugh Reyburn et al.^[10] has observed in their study that among 2375 people who were slide negative, 1571 (66.1%) were not treated with antibiotics and of those, 120 (7.6%) died. The case fatality in slide negative patients was higher (292/2412, 12.1%) than for slide positive patients (142/2062, 6.9%)

Conclusion

Role of Malaria clinic is very important for passive

surveillance of malaria. Study revealed that most of the patients attending malaria clinic were belonging to productive age group of society. More than one fifth slides are negative that shows over diagnosis of malaria. Improving malaria diagnosis should be a top priority in health care facilities. Possible errors in microscopy should be investigated. Physicians at malaria clinic should be sensitized about diagnostic algorithm of malaria disease.

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