

# Study Of Hospital Based Malaria Cases In Mehsana District Of North Gujarat

B Prajapati, A Patel, M Patel

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## Abstract

**Background and Objectives:** Malaria is a very prone disease in rural India and it continues to be a major public health problem in many other tropical countries. The objective of present study is to found present scenario of malaria in Mehsana district of North Gujarat region.

**Methods:** In present study we collect data from 1999 to 2005, five years of patients who found to be positive with malarial symptoms from central hospital of Mehsana district. We also collect the data of month wise distribution of number of patients under gone check up for malarial parasite and found positive with the kind of malarial infection.

**Results:** During the year 1999 and 2005 positive case of malaria were found respectively 334 and 226. From compile data of six years one can say that as year progressing there is gradual decrease in no of positive patients. Out of 207 malarial cases in last year (2005), maximum number of cases 47 (22.7%) were reported in this hospital during a month of august and 149 cases were reported during months of July to October; monsoon season. Our result suggests that 92 % of cases are due to *P. vivax* and only 8% of total cases are due to *P. falciparum*.

**Interpretation and Conclusion:** There is high prevalence of *P. vivax* as compare to *P. falciparum* infections. The maximum number of cases was reported in month of August and September which conclude that malaria is a seasonal disease.

## INTRODUCTION

Malaria has been a scourge of the mankind for centuries. At its name implies mal-bad aria-air, it has been considered as being due to the bad air because of high prevalence of malaria in the marshy or swampy tropical area of world. Malaria is a well-known disease and it continues to be a major public health problem at the start of new millennium, in India and many other tropical countries with approximately 2 to 3 million new cases arising every year<sup>1</sup>. Malaria alone kills three million people annually, including one child every 30 seconds<sup>2, 3</sup>. 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. Therefore, people visit a hospital only if the illness is prolonged and there is no response to the primary line of treatment. This report deals with malaria cases reported at a district based central hospital in Mehsana district of Gujarat State, India. In this district the population is relatively large. In most of

the villages commonly the males are out in the city for employment and women, children and geriatric population stay back in the villages. This results in constant inflow and outflow of population, which might be leading to spread of malaria in both directions.

The present study reviles the year and month wise distribution of number of patients visiting the hospital, found positive with fever, tested for malaria and the type of malaria present starting from January 1999 to February 2006. This study also looked at the number of patients observed positive with *Falciparum* and *Vivax* type of malarias.

The total patients attended the hospital for various ailments including OPD and indoor patients were considered as the hospital population during the study period. Peripheral blood was collected and examined for malarial parasite, of any of the patients who had clinical features suggestive of malaria—history of fever with chills and rigors, enlargement of spleen, secondary anemia, etc. The thick and thin blood films were prepared. The prepared slides were checked by

the hospital pathologist. The detailed medical records of all those who were positive for malaria parasite were maintained. The species of the parasite and also the stages in which the parasite were seen also noted. Slide positive rate (SPR), and slide falciparum rate (SfR) were calculated using the standard formula. Approximate 0.6 million of patients attended this hospital for various ailments during the study period of five years and of these 47561 patients who had clinical history of fever were examined for malaria parasites. Out of the 47561 slides examined during five years of study, 1341 slides were positive for malaria parasites (1237 *P. vivax* and 104 *P. falciparum*). The SPR and the SfR for present data were 2.82 and 0.22% respectively though out the study of five years

### YEAR WISE DISTRIBUTION DETAILS 1999 TO 2005

During the year 1999 and 2005 positive case of malaria were found respectively 334 and 226. The detail of data from 1999 to 2005 including the specific type malaria is given in Table 1 & Figure 1. From compile data of six years one can say that as year progressing there is gradual decrease in no of positive patients. The same may be due to increase in awareness of malaria in rural area, increase in education and proper precautionary steps conducted by government against malaria. In year 2004 there are some higher number of positive cases is there may be due to seasonal change.

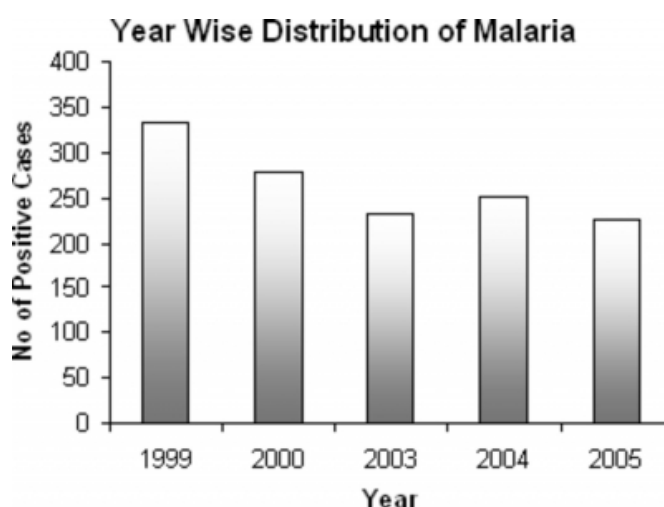
**Figure 1**

Table 1: Numbers of positive patients with malarial types during different years

Year	Total Patients Visited Hospital	Patients With Fever	PV	PF	Total=PV+PF
1999	100448	6980	329	5	334
2000	103555	5922	273	5	278
2003	130742	11484	199	34	233
2004	138999	11344	213	39	252
2005	127363	10227	207	19	226
2006	23527	1604	16	2	18
Total	624634	47561	1237	104	1341

**Figure 2**

Figure 1: Year wise distribution of malaria.

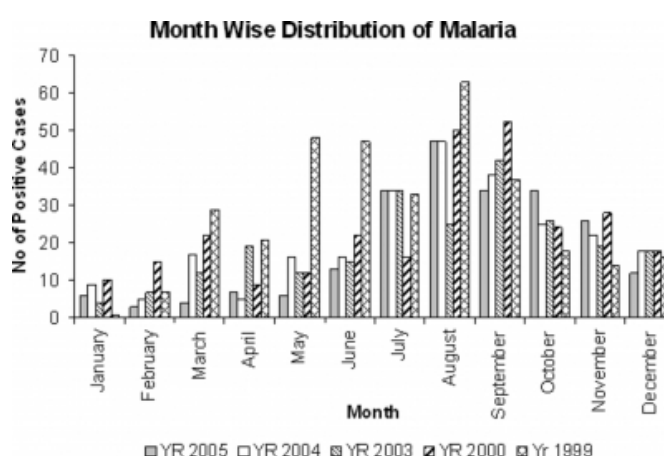


### MONTH WISE DESTRIIBUTION FOR LAST YEAR

All the malaria positive patients received antimalarials like chloroquine, quinine (quinolone derivative), primaquine and mefloquine as per the drug policy. No death was reported in malaria patients. Out of 207 malarial cases in last year (2005), maximum number of cases 47 (22.7%) were reported in this hospital during a month of august and 149 cases were reported during months of July to October; monsoon season (Figure 2).

**Figure 3**

Figure 2: Month wise distribution of malaria during different years



Malaria, a seasonal disease, in most parts of India; the maximal prevalence is from July to October. Good rainfall, relative humidity of 60% and temperature between 20 and 30°C favor the spread of malaria. According to a study conducted by Bonnlander et al<sub>4</sub> at Central Haiti's Schweitzer hospital peak case incidence occurred in the November to January period, a few months after the rainy season<sub>4</sub>.

However, in present study area i.e. Mehsana District which comes in some what dry and plain zone, that's why there is rare changes of water clogging and mosquito breeding after completion of rainy season.

In India, about 70% of the infections are reported to be due to *P. vivax*, 25–30% due to *P. falciparum*, 4–8% due to mixed infection and 1% due to *P. malariae* <sup>5</sup>. Our result suggests that 92 % of cases are due to *P. vivax* and only 8% of total cases are due to *P. falciparum* which also correlated with Anand et al <sup>6</sup> in a study at a secondary level hospital in northern India noted that of the 41 cases 35 were positive for *P. vivax* and six were positive for *P. falciparum*.

## CONCLUSION

From the study of 1999 to 2005 for malarial infection in hospital of Mehsana district of North Gujarat, India, it can be concluded that there is high prevalence of *P. vivax* as compare to *P. falciparum* infections. The maximum number of cases was reported in month of August and September which conclude that malaria is a seasonal disease. As year progresses there is gradual decrease in number of positive malarial cases concludes that awareness is increasing toward malarial as well as government is also taking care of early precautionary steps for malaria like mosquito control

operations before monsoon and availability of precautionary drugs from primary health centre.

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## CORRESPONDENCE TO

Bhupendra G. Prajapati Shree S.K.Patel College of Pharmaceutical Education and Research, Ganpat Vidyanagar, Kherva-Mehsana-382711, North Gujarat, India.  
Email: bhupen\_27@yahoo.co.in

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**Author Information**

**Bhupendra G. Prajapati**

S.K.Patel College of Pharmaceutical Education and Research

**Amit K. Patel**

S.K.Patel College of Pharmaceutical Education and Research

**Madhabhai M. Patel**

S.K.Patel College of Pharmaceutical Education and Research