INDIAN FEVERS

In this, O Nature, yeild I pray to me.
I pace and pace, and think and think, and take,
The fever'd hands, and note down all I see,
That some dim distant light may haply treak.

The painful faces ask, can we not cure?
We answer, No, not yet; we seek the laws.
O God reveal thro' all this things obscure
The unseen, small, but million murdering cause.

Ronald Ross, Banglore, 1880-3
from his poetry book “IN EXILE”

INTRODUCTION
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Malarial parasitic infections imposes substantial health and economic burden, particularly on less developed countries where they are more prevalent. The disease caused by malarial parasites i.e. malaria continues to be one of the main public health problem in the world. Estimates of mortality may vary from 1.5-2.7 million malaria deaths world wide each year.[1]. Malaria is endemic in India. We are currently witnessing a second rise in malaria. Vector resistance and parasite resistance is a problem in malaria control in India.[2]

Recently India is observing malaria resurgence especially falciparum in increasing proportions. Focal resurgence have been reported from time to time from various states including Gujarat, neighbouring state Rajasthan and in Calcutta. These have been attributed to development of resistance to drugs, migratory populations, non-immune status, and natural calamities like floods[3]. Recent outbreak of malaria in Radhanpur in Gujarat is one such focal outbreak which has resulted into human sufferings.

Malaria is endemic in Kheda district. A recent study carried out in Nadiad taluka of Kheda district, a place 20 km. away from our study place, did a villagewise analysis to find out the receptivity and vulnerability to malaria. Malaria annual parasite incidence (API) showed relationship with water table followed by soil type, irrigation and water quality, other parameters also contributed to malaria receptivity but less significantly. They found malaria API to be high in number of villages of Nadiad taluka.[2]. This means that the Kheda district could form a good research place for malaria.
Since the discovery of Laveran in 1880 of malarial parasites in the blood, examination of blood smear has remained the gold standard for diagnosis of malaria even today. Thick-thin smear is one of the most rewarding laboratory investigations. If diagnosis is missed, this treatable disease may become fatal.

The newer diagnostic methods have come up like 'Quantified buffy coat microscopic' examination and serological methods, though they are considered to be highly specific and sensitive, they require more evaluation and research. It appears that immunodiagnosis of malaria would become an important diagnostic tool of future[4]. One of the immunological diagnostic tests developed by Becton-Dickinson is Parasight-F test. This test is simple, rapid, manual dipstick test to detect Plasmodium falciparum infection[5]. This is based on detection of HRP-II antigen assay[6].

Cultivation of P. falciparum in laboratory condition could be used for drug sensitivity testing as a macro test. Continuous culture of P. falciparum is one of the prerequisites for vaccine development and various other research on malarial parasite.

Clinical presentation of the disease resulted by infection of malarial parasite is known since the days of Hippocrates. Clinical spectrum of malaria is varying from case to case and many unusual presentations are been described in the literature. This may be due to problem of chloroquine resistance, partial treatment and different immunity status of patients.
Malaria is very common cause of morbidity and mortality during pregnancy and post partum period. Timely treatment and prophylaxis in endemic area is been recently stressed by malariologists all over the world.

Secondary bacterial infection in malaria patients is recently recognised. This is an area of interest of recent research. Asymptomatic infection may suggest endemicity of malaria in a particular region. Doing peripheral smear examination in blood donors may give idea of such endemicity.

The most frustrating problem with malarial parasite is resistance to conventional antimalarials. The most effective drug chloroquine has became resistant in many areas, including some of the part of India. There is also danger and threat of multi-drug resistant malaria.

The new pandemic of HIV is affecting the world. Malaria being most common parasitic infection in the world, malaria is recognised as one of the threat to HIV infected individual for development of fever, atypical presentation and death.

Research in malaria since the days of Ronald Ross, who found vector anopheles being responsible for transmission of malaria, has challenged various researchers in India. The present work includes study of malarial parasites in the field of epidemiology and type of malarial parasite infection in rural Kheda district in and around village Karamsad. Staining characteristics, serological diagnosis by Parasight-F test, malarial parasite type, count and its clinical correlation, cultivation of *P. falciparum*, problems in malarial diagnosis, problem of drug resistance in our area, concomitant prevalence of other
AIMS AND OBJECTIVES

[1] To find out importance of malarial parasite in causation of various clinical manifestations and to correlate it with various factors like species of plasmodia, number in the peripheral blood and the stages of parasites.

[2] To find out importance of parasitological diagnosis by conventional microscopy. This includes examination of thick and thin smear, identification of species and stages by peripheral smear, staining by Romanowsky stains, its staining characteristics, the way of best interpretation, time and frequency of such examination, relation of disappearance of parasite after giving antimalarial drug and to know in vivo drug resistance.

[3] To find out whether asymptomatic parasitaemia exists in our area or not by doing thick and thin smear examination of blood donors.

[4] To find out importance of one of the immunological tests. Parasight-F test based on antigen-capture assay for diagnosis of falciparum malaria. To find out its sensitivity, specificity, its relation with parasitological examination and with giving of antimalarial drugs.

[6] To cultivate *Plasmodium falciparum* in various artificial media. To
establish the best culture method in our setup and to find out its importance in
research and patient management.

[7] To find out association between malaria and occurrence of other bacterial
infections especially gram negative septicaemia.

[8] To find out prevalence of malaria in HIV positive patients.

[9] To find out various factors which predisposes malarial infections. This
includes associated diseases like diabetes, T.B., HIV infections, psychological
stress, and others.

[10] To study certain clinical problems in relation to malarial parasite. This
would also include correlation with other laboratory investigations. The clinical
problems like severe and complicated malaria, cerebral malaria, anaemia,
hypoglycaemia, acute renal failure, adult respiratory distress syndrome, malarial
hepatitis and others.

[11] To find out the epidemiological characteristics and behaviour of malarial
parasite in and around Karamsad.