DISCUSSION

Present study was carried out on 18 cases of different type of malarial infection with special reference to serum immunoglobulin status in various stages of infection. A total of 18 cases were analysed. Mostly patients belonged to urban areas, males predominated over females.

Our finding in those respect could not be compared because such parameter have not been considered by other workers.

In our study mostly patients were belonged to ages of 11-40 years age group. Patients of similar age groups have been studied by Beale et al in 1972. They have also tried to incorporate the nationality of patients, incidences of infection and also type of infection.

Two types of plasmodium species infection were encountered, plasmodium vivax predominated (55.5%) as compared to plasmodium falciparum (44.4%) malaria. Plasmodium malariae and plasmodium ovale infection were not encountered in present study.

Studies conducted by Bobhate et al (1991) included only patients suffering with plasmodium vivax malaria whereas studies performed by Beale et al (1972) on 33 cases, included
24 patients suffering with plasmodium vivax, 8 patients suffering with plasmodium falciparum and one patient had mixed infection.

In present study, fever, fever with chills and splenomegaly were most common presenting symptoms. In our study no case was observed with haematuria or epistaxis where as studies conducted by Beale et al (1972) had reported haematuria and epistaxis in his patients. But, then these cases were analysed for thrombocytopenia in malaria infection.

In our series mostly patients suffering from plasmodium falciparum malaria presented with fever, vomiting and splenomegaly where as in series of Beale et al (1972) studied sign of bleeding appear in form of subconjunctival haemorrhage. According to them haemostasis was maintained despite of gross depletion in number of circulating patients, it is probable that in more severe plasmodium falciparum infection intra vascular coagulation can occurs. They also advocated that it is important to show depletion of clotting factors before making the diagnosis and before giving the specific treatment.

Splenic enlargement was observed in 13 cases (66.7%). Similar finding have been observed by Beale et al in 1972 and Hill et al in 1974. Splenomegaly have no relationship to duration, severity of illness and type of infection.
As regards immunoglobulin measurements were done in all 19 cases which showed a significant rise in all these immunoglobulins (Ig G, Ig M and Ig A) specially serum Ig G and Ig M during the first few days after infection. The serum immunoglobulins were also measured after infection subsided, which again shows fall in the level of different immunoglobulins proportionally.

Rise in serum Ig G is regularly followed by rise in serum Ig M and Ig A. Similar observation were made by Tobie et al (1966), Beale et al (1972).

In our study we have tried to correlate serum immunoglobulin levels with duration of illness and it has been observed that levels were high with longer duration of illness. The levels of immunoglobulins after the infection subsides used to remain higher with longer duration of illness. The levels of serum immunoglobulins show a falling trend after 28th day according to Abels et al (1965) and Zuckerman (1969) who have also tried to correlate immunoglobulin level with duration of illness.

In our study we could not found such relation in immunoglobulin since patients could not be followed after the treatment was over due to certain obvious reasons.
The rise of serum immunoglobulin is known to tally closely with the formation of malarial antibody (Tobie et al, 1966). Zuckerman (1969) carefully emphasised that all immunoglobulin is not antibody and both Curtain et al (1964) and Turner et al (1966) pointed out that raised level of immunoglobulins can be due to inter current infections. But our studies were conducted among previously healthy individuals and no coincident disease was detected. Hence it is justifying in assuming that changes in immunoglobulin values reflected changes in malarial antibody.

Serum immunoglobulins levels in present study involving 18 cases were also compared with the immunoglobulins level in age and sex matched healthy individuals of similar socio-economic and geographical background.


Our findings as regard to the rise of serum immunoglobulins were regularly high and are accordance with similar findings observed by other authors (Table-13).
It is observed in present study that serum Ig G, Ig M and Ig A are significantly increased in malarial infection in primary attack. Most authors (Tobie et al 1966; Beale et al 1972; Samuel et al 1970; Highash and Choudhary, 1971; Ghosh et al 1977, Saha et al 1979; Chauk roy et al 1980; Sharma et al 1981; Gupta et al 1982; Bobhate et al 1991) have reported increase in Ig G and Ig M levels in their series. Tobie et al (1966) considered that serum Ig G and Ig M levels appears to rise and reach a peak at about same time. It was suggested that there was a strong correlation between Ig M level and malarial antibody level.

According to Greenwood (1974) high level of Ig M in malarial infection were possible due to production of B cell mitogens by the parasite.

Since present study has been a small study, further studies should be conducted as regard to serum immunoglobulins levels in larger number of patients with special reference to immunoglobulin profile in cases of resistant malaria specially plasmodium falciparum infection.

The relationship of immunoglobulin level to other antibodies against different organs (Heart) also require further investigations in present prevailing climatic conditions.