SUMMARY

Malaria continues to be a major problem in several countries of the world, causing heavy burden on countries' and peoples' scarce resources by excessive public health costs, low productivity and impaired growth. In Sri Lanka malaria has been prevalent for centuries, with epidemic outbreaks of varying intensity and distribution and occurring at intervals of 4 to 6 years. The disease has greatly affected the economic development of the country. In 1991 malaria was the fourth leading cause of hospitalization and the first leading cause of hospitalization in six of the seventeen districts in the country.

There is substantial evidence with the emergence of chloroquine resistant *Plasmodium falciparum* malaria there is in Sri Lanka a marked increase in the proportion of patients with asymptomatic or low symptomatic *P.falciparum* malaria infection. With the changing clinical pattern of the disease diagnosis by previously defined clinical symptoms only is likely to result in both a substantial over-treatment as well as under-treatment of malaria. Over-treatment would lead to a waste of time and resources and would lead to delayed treatment of other serious illnesses due to erroneous diagnosis. The risk of emergence of malaria drug resistant strains is also enhanced.

The correct management of malaria cases is an important factor in the prevention and control of the disease. This usually rests upon the recognition of clinical symptoms and in the results of laboratory examinations, including microscopic diagnosis. However in many instances neither are such findings made nor are laboratory findings always available to those responsible for treatment. The review of prevailing clinical symptoms of malaria with the changing clinical picture of the disease and in identifying those persons who will benefit from anti malarial therapy seems to be important. Further any irregularities in the management of malaria patients and compliance are other important factors that should be evaluated for the control of malaria in the

country. So far a study of this nature on the health system relating to malaria has not been carried out comprehensively in Sri Lanka.

The present study is an attempt to investigate this aspect of epidemiology with the expectation that the findings will help mobilize the resources more efficiently by improved case detection in the national malaria control programme. "Early detection and prompt treatment" is also one of the important technical elements of the revised WHO Global Malaria Control Strategy, which Sri Lanka has adopted for implementation.

The investigations were carried out in the Kurunegala and Anuradhapura districts of North Western Province and the North Central Province of Sri Lanka respectively. The study involved a total of eight institutions at different levels, comprising two District Hospitals, one Peripheral Unit, one Rural Hospital, three Central Dispensaries and one Malaria Clinic conducted at the Anti Malaria Campaign Regional Office, Kurunegala. A total number of 2431 patients attending these institutions/clinic were investigated. Investigations included patient assessment on symptoms of malaria by interview and assessment of the clinical management of the malaria cases identified in the interview which was also carried out by a second interview. A third interview was carried out for individual follow up of compliance and relief of symptoms of the patients obtained from the first two interviews and those who were given anti malaria treatment.

A total of 469 patients were encountered. Fever was the commonest presenting complaint accounting for 88.5% of the malaria patients followed by headache 82.9%, backache 25.6%, rigors 11.5%, joint pain 10.9%. Nausea was the least common presenting symptom and formed with 1.3%. However, in the discriminant function analysis showed that the significant symptoms in identification of malaria patients to be chills & rigors, sweating & hot spells, headache, upper abdominal pain, joint pain and vomiting in the same order of

discriminating power. Cough and cold were two negative symptoms in malaria patients in the sample investigated.

Accuracy of both clinical and microscopic diagnosis was found to be high in all institutions. Highest accuracy in institutions with facilities for microscopic examination of blood smears. In most institutions there was under-diagnosis than over-diagnosis of malaria. A generally high level of health care delivery for malaria as judged by the accuracy of diagnosis and treatment, advice and compliance, as well as a high degree of awareness and knowledge of the disease by patients was found.

There is scope for improvement of the malaria case detection programme at the primary health care level by education that could be given to both the public and the health care workers regarding the clinical features of malaria. The study also revealed the possibility to improve marginally the accuracy of clinical diagnosis of uncomplicated malaria which is high at present. The public needs to be re-educated on atypical clinical features of malaria. It may be useful to attempt to develop a clinical scoring system and validate it on the findings of this study.

The difference in the accuracy seen between clinical and microscopic diagnosis of malaria suggests that microscopy is an important and effective tool in the health care delivery system for malaria. However, microscopic accuracy also need quality control. The study also revealed that in view of the fact that the clinicians suspicion of malaria in referring for blood smear examination is no better than the patients' self diagnosis, the decision for screening patients by microscopic examination of blood need not be made by a clinician at the out patient clinics thus saving clinicians time for more needed services.