PATTERN OF MALARIAL INFECTION DIAGNOSED AT AYUB TEACHING HOSPITAL ABBOTTABAD

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Background: Malaria is endemic in Abbottabad and the adjoining areas like many other parts of the country. Depending upon the environmental conditions different species of malarial parasite are found in different areas. The present study was planned to see the pattern of malarial infection diagnosed at Ayub Teaching Hospital, Abbottabad. **Methods:** Giemsa stained thick and thin blood films of indoor and outdoor febrile patients sent to the laboratory of Ayub Teaching Hospital Abbottabad with a suspicion of malaria, were examined. Thick film was examined for the diagnosis of malaria while thin films were seen to know the species. **Results:** Out of 1994 patients screened, 145 (7.2%) were found infected. Plasmodium vivax was seen in the majority (72.47.2%). Plasmodium falciparum was the second common species detected in 24.1 % cases. Mixed infection was seen in 3.44% cases while Plasmodium malariae and ovale was not seen in any patient. **Conclusion:** Plasmodium vivax was the commonest type of malaria diagnosed at Ayub Teaching Hospital, Abbottabad, during 2002- 2004.
Key words: Malaria; Plasmodium

INTRODUCTION

Malaria is a devastating global health problem. Worldwide, an estimated 300–500 million people suffer from malaria each year with 1.5–2.7 million deaths per anum[1, 2]. It is caused by a protozoon called Plasmodium. Plasmodium has different species. Plasmodium Vivax and Falciparum are the commonest species detected in human disease. Other species are less common.

Malarial parasite (Plasmodium) is primarily transmitted by the bite of an infected female Anopheles mosquito, but infections can also occur through exposure to infected blood Products (transfusion malaria) and by congenital transmission[3]. Malaria occurs throughout the year. Prevalence of malaria shows seasonal variation[4]. It is higher in autumn and spring. Light microscopy of thick and thin stained blood smears remains the standard method for diagnosing malaria[5].

The present study was planned to see the pattern of malarial infection diagnosed at Ayub Teaching Hospital, Abbottabad, from November 2001 to November 2004. It was conducted in collaboration with the Department of Pathology, Ayub Medical College Abbottabad.

MATERIAL AND METHODS

Blood specimens from indoor and outdoor, male and female patients of all ages, sent to the laboratory of Ayub Teaching Hospital, were studied. Patients referred from other hospitals were also included in the study. Venous blood sample of all the febrile patients with a suspicion of malaria was examined after making thick and thin films. Giemsa stained blood films were seen by the same pathologist to minimize interobserver difference. The slides were seen under oil immersion lens. Thick slides were used for the diagnosis of malaria. Thin slides were examined to identify the species of malarial parasite.

RESULTS

A total of 1994 cases were screened. One hundred and forty five patients (7.27 %) were found infected. Plasmodium vivax was seen in 72.4% cases and plasmodium falciparum in 24.13 % cases. Mixed infection was seen in about 3.44% cases. No case of plasmodium malariae or ovale was found in our study. Males outnumbered females with male to female ratio of 1.23:1. Malaria was more frequent in pediatric age group constituting about half of the cases. In adults the infection rate was comparatively more in age group 45 to 80 years constituting about 30.3% cases. 72% were inpatients.

Table 1. Disease index

Number of cases screened	Positive	Negative	Positive%
1994	145	1849	7.27

Table 2. Breakup of cases according to species (n=145)

Species	Number of cases	%
Plasmodium Vivax	105	72.4 %
Plasmodium Falciparum	35	24.1 %
Mixed Infection	05	3.44%

Table 3. Gender distribution (n=145)

Gender	Number of cases
Male	80
Female	65
Male: Female	1.23 : 1

Table 4. Age distribution (n=145)

Age in years	Number of cases	Percentage
<15	70	48.27%
15-30	13	8.96%
30-45	08	5.51%
45-60	24	16.55%
60-80	20	13.79%
>80	10	6.89%

Table 5. Distribution according to indoor/outdoor status (n=145)

Status	Number of cases	Percentage
Indoor	105	72.41%
Outdoor	40	27.58%

DISCUSSION

Malaria is an important public health problem in our country. It is a global threat to health and socioeconomic development. It affects about 300 million people and causes a million deaths per year worldwide. Early diagnosis and prompt treatment is crucial for the prevention of its complications. It affects all the age groups and both the male and female gender. Studies have shown clinical presentation and drug resistance pattern of malaria in children similar to that in the adults[6]. Cases have been reported in the neonates[7]. It has been reported to be an important cause of acute fever without localizing signs (AFWLS) in children[8]. Finding malarial parasite in a well prepared blood film is the mainstay of diagnosis of malaria[9]. Determination of the species of malaria is also important for its effective and curative treatment as resistance to chloroquine and some other drugs has been reported previously[10,11]. Studies have also shown seasonal variation in the rate of infection and differences in the type of malarial parasite depending upon the geographical conditions[12,13]. In this, study Plasmodium vivax and falciparum were the commonest types of malarial parasites detected. Mixed infection was also detected in some cases. This is slightly different than the results of earlier studies[14]. Highest rate of infection was observed in the younger age group contrary to results of an earlier study[15]. Plasmodium malariae and ovale were not seen in our study. It is also apparent from the results that the majority of the patients were admitted in hospital. This might have been either due to severity of the disease or its complications. This is important because hospitalization and complications can be avoided if the disease is detected and treated well in time. Blind treatment without species detection may not be effective as it can cause drug resistance and complications.

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