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Prevalence of Malaria Cases in General Population of Mithakhel District Karak Pakistan

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Abstract:

This study aimed to find the prevalence rate of malaria cases in general population of Mithakhel village and educate people about the disease. The data was collected from District Head Quarter Hospital Karak Khyber Pakhtunkhwa Pakistan, during June 2013-August 2013. The total 270 samples were collected. Of the total sample collected, 225(83.33%) were positive for malaria. In male 94.11% were more infected than female 93.33% and children's 68.18%. High occurrence 82.35% was recorded in age 40-60 years, in 20-40 years of age group the percentage is 72.72% the lowest percentage was recorded in the age of 10-20years 66.66%. It is concluded that malaria is still prevalent in Mithakhel village.

KEY WORDS:

Prevalence, Malaria, Descriptive study.

INTRODUCTION:

Plasmodium is a single celled parasite, responsible for causing malaria. It has more than 100 species, produce malariain birds, animals and humans, etc. Plasmodium species which commonly infect humans has a specific look under microscopic examination. The four species are *Plasmodium falciparum, Plasmodium malariae, Plasmodium ovale, Plasmodium vivax.* The most common plasmodium is *Plasmodium falciparum* (~75%) followed by Plasmodium vivax (~20%) [1]. The symptoms of malarial disease usually start from 8-25days after bite. The common symptom of the malaria is fever, weakness, malaise, nausea, vomiting, diarrhea, headache, backpain, chills, and cough. Due to similarities of symptoms malaria can be confused with many other diseases including flu, dengue, typhoid, blood poisoning, viral hemorrhagic fevers and meningitis. Sometime some neurologic complains such as confusion, dizziness, disorientation and comas can also be seen. The diagnosis of malarial infection should also be considered in any patient with fever of unknown origin [2].

Treatment for malarial infection should not be started until the presence of malarial parasites has been confirmed by laboratory tests. Malarial parasites can be detected from the examination of thin and thick blood smears through microscope [3]. Malaria is known to human beings since centuries. It is a disease of tropical and subtropical countries particularly Africa and Asia. Despite advances in knowledge, malaria continues to cause significant morbidity and mortality worldwide [4]. Over 40% of world population lives in malaria endemic area including Southeast Asia, India, Pakistan, Bangladesh, Africa,

areas of middle east, Central and South America [5].

Pakistan being a part of endemic belt has an incidence of one case per thousand populations. Severe malaria has been a major cause of mortality worldwide and Plasmodium falciparum is the main species for most of these deaths [6]. Although relatively uncommon in the developed countries, malaria remains one of the most prevalent infections in the developing and under developed world. It is a significant cause of morbidity and mortality in addition to creating an enormous social and economic burden. Today, the most important problem in the management of malaria is drug resistance of Plasmodium falciparum to the various anti-malarial drugs and occurrence of systemic complication [7].

A vast system of irrigation is present in Pakistan, after heavy rainfall in monsoon a lot of stagnant water providing an ideal environment for the breeding of mosquito. The transmission of malaria remains throughout the year, but becomes more intense after the rains in the months of July to November. [8,9]. The present study was carried out about the prevalence of malaria in human populations residing in the village Mithakhel district karak. Aim of the study was to determine the prevalence of malaria among the local people visited the hospital and educate people about the disease.

METHODOLOGY:

Study Area:

Mithakhel village located in district Karak Khyber Pakhtunkhwa Pakistan. It is located at 33°08'43N 71°11'21E with an altitude of 372 metres (1223 feet).

Data Collection:

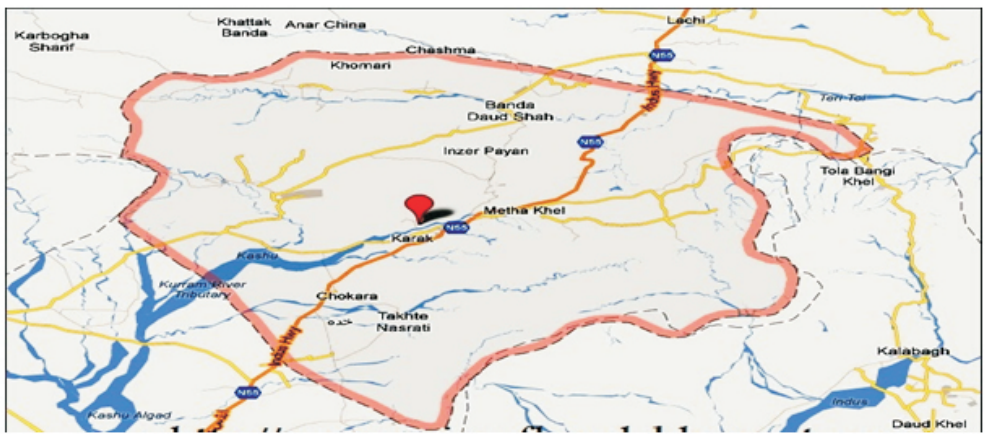
The data was collected from June 2013- August 2013 from District Head Quarter Hospital, Which is located in Karak Development Authority Karak. The total no of patients were 270 including male, female and children's. The cross sectional study was design and the data were collected from the hospital.

Prevalence rate:

The prevalence rate was determined by using the following formula:
Prevalence rate = No of Patients having Malaria/ Total no patients×100.

Statistical analysis:

Data was analysed with Statistix software for windows.



Map of Study Area: This Map is taken from Google maps.

RESULTS:

Malaria remains a well-known health problem in the world. Out of total 270 samples,

225(83.33%) were positive for malaria. Gender wise prevalence was determined in this study where the high prevalence was recorded in male 94.11% (80/85), then female 93.33% (70/75) and children's 68.18%(75/110).Table 1.The data was significant when analysed by chi square test with P<0.05. High prevalence 82.35% (70/85) was recorded in age 40-60 years. In age 20-40 years 72.72% (80/110) were found positive while the lowest 66.66% (50/75) was observed in age 10-20 years (Table 2). A high prevalence of malaria which was 88.88% (80/90) was recorded in the month of July, in august it is 82.35% (70/85) the lowest percentage is in the month of June which is 78.94% (75/95) as shown in table 3.

Table 1: Gender wise prevalence of malaria

Sex	Total Samples	Positive	Percentage
Children	110	75	68.18%
Male	85	80	94.11%
Female	75	70	93.33%
Total	270	225	83.33%

Table 2: Age wise prevalence of Malaria infection in Mithakhel

Age	Total Samples	Total Positive Samples	Percentage
10-20	75	50	66.66%
20-40	110	80	72.72%
40-60	85	70	82.35%
Total	270	200	74.07%

Table 3: Month wise prevalence of Malaria infection in Mithakhel

Month	Total Samples	Positive	Percentage
June	95	75	78.94%
July	90	80	88.88%
August	85	70	82.35%
Total	270	225	83.33%

DISCUSSION:

Pakistan is among moderately endemic countries for malaria. There is variation in prevalence from province to province and area to area. About 30% of cases are reported from Baluchistan, 30% from Sindh, 21% from Khyber Pakhtunkhwa, 11% from FATA and 8% from Punjab [10]. It affects all age groups; even cases have been reported from neonates [11]. It has been reported as cause of acute fever without

localizing signs (AFWLS) in children [12]. In our study out of 270 patients majority 70 (82.35%) were in 40-60years age groups. Almost similar pattern was seen in India. [13], where medium prevalence was in 20-40 years age groups. Almost similar Patterns were seen in Lal Qilla (Sub Division), Pakistan [14]. Low incidence was in 10-20 years age groups. Almost similar patterns was seen in Lal Qilla (Sub Division), Pakistan [14].where peak incidence was in 40-60 years and in Karachi [15]. This may be due to their greater mobility and outdoor activities, hence more exposure to mosquitoes. Regarding sex distribution, there was male predominance, in our study males were 80 (94.11%) while females were 70 (93.33%) and children were 75(68.18%). Male predominance was also reported by Idress et al. [16]. This male predominance may be due to more outdoor activities of male in comparison to female. Regarding month wise distribution high incidence was in the month of July (88.88%) followed by August (82.35%) and lowest prevalence was recorded in the month of June (78.94%), our results show similarity with other study [14].

CONCLUSION:

From the present study it was concluded that the male are more infected as compare to females and children's population of Mithakhel District karak. Where the age is concern the high number of cases was reported in males having age 40-60 years. To control the disease awareness, knowledge is needed about the disease, early treatment and preventive measure is necessary.

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