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MALARIA IN CHILDREN AT CHILDREN HOSPITAL CHANDKA MEDICAL COLLEGE LARKANA

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ABSTRACT

Objective of Study: To look for malarial parasite and its species in hospitalized children, who were clinically suspected as malaria.
Background: Malaria is the most devastating disease in world. Over three billion people live under the threat of malaria in 24 endemic countries and it kills over a million each year, majority being children.
Study Design: Descriptive.
Materials & Methods: This is hospital based retrospective study conducted at Children hospital Chandka Medical College Larkana from Jan 2008 to Dec 2008. Files of patients who were clinically diagnosed as malaria according to World Health Organization/ National Malaria Program were reviewed. Data regarding age, sex and malarial parasites and their species was collected. Data was analyzed by using SPSS version 15 for windows and results were presented as frequency tables, Charts and Graphs.
Results: Two patients were clinically suspected as malaria. Majority of patients 139(69.5%) were between five to twelve years. There was male predominance 117(58.5%). Malaria parasites were seen in 73(36.5%), Plasmodium, Falciparum was seen in majority 43(58.9%) of cases, Vivax was seen in 30(41.09%), there was no case of plasmodium malairae or plasmodium ovale. Majority of patients 196(98%) improved and were discharged, 04(2%) patients died
Conclusion: Out of 200 clinically suspected cases of malaria, 73(36.5%) were malarial parasite positive, Plasmodium falciparum was predominant specie.

Key words: Malaria, Specie.

INTRODUCTION:

Malaria is one of major causes of morbidity and mortality in tropical and subtropical countries, it accounts for 85% of global infectious disease burden[1]. According to World Health Organization (WHO) study group[2], malaria is major killer of mankind, is responsible for 300 to 500 million clinical cases and 1.5 to 2.7 million deaths per year. It has debilitating and impoverishing effects on the health of children[3] especially malnourished children[4]. Pakistan is among the moderately endemic country for malaria. According to Pakistan Health Management Information System (HMIS), it is the second most frequently reported disease from public health sector. At least 39 districts, mainly from the two southern provinces of Balochistan and Sindh have been classified as high risk areas. Falciparum and Vivax malaria are the major health problems in Pakistan. In the last decade there has been six fold increases in Falciparum malaria, which now comprises 42% of malaria cases reported by National Malaria Control Program[5]. More than 40% of Plasmodium falciparum are resistant to chloroquin[6]. Multi drug resistance shown by various plasmodium species leads to high morbidity and mortality in children due to severe complications like cerebral malaria and pulmonary edema[7]. Roll back Malaria (RBM) initiative with Millennium Development Goals (MDGS) was launched by WHO in collaboration with World Bank and UNICEF in 2000. Its aim was to control malaria

cases up to 50% by year 2010 in Pakistan. Early diagnosis and appropriate treatment was a major RBM strategy for control of malaria[8]. Therefore identification of plasmodium species is very important, so that appropriate treatment can be initiated.
Keeping this in mind, present study was conducted. Objective of study was to identify malarial parasites and their species in children who were clinically suspected as malaria and were admitted at Children Hospital, Chandka Medical College Larkana.

MATERIALS AND METHODS:

This was hospital based retrospective study conducted at Children Hospital Chandka Medical College Larkana from January 2009 to December 2009. This hospital is tertiary care hospital and receives patients from upper part of Sindh and Baluchistan. Patients from one month to fifteen years who had fever and other signs suggestive of malaria according World Health Organization "WHO"/ National Program were included in study. Patients who had other disease like gastroenteritis, pneumonia, enteric fever, urinary tract infection, meningitis and encephalitis were not included in study. Routine laboratory tests like complete blood count, blood sugar were done in all patients. Identification of malarial parasite and its species was done on thick and thin film peripheral smear stained with Giemsa stain. Cerebrospinal fluid examination was done where indicated. Patients were treated with intravenous Quinine injection in a loading dose of 20mg/kg diluted in 10ml/kg of dextrose saline over four hours followed by 10mg/kg in two hours eight hourly until they were able to tolerate medicine orally or injection Artimether 3.2 mg/ kg intramuscular 1st dose then 1.6 mg /kg once daily for five days. Patients were also provided supportive treatment in the form of intravenous fluids, blood transfusion, anticonvulsants, antipyretics, nasogastric feeding and coma care etc. Data regarding age, sex, malarial parasite and outcome of patients was analyzed by using SPSS Version15 for windows. The results were expressed and presented as frequency tables, charts or graphs. Permission from hospital ethical committee was sought.

RESULTS:

Two hundred children were included in study. Mean age was 8 years (age range was 03 months to 12 years, Majority of patients 139 (69.5%) were between 5-12 years (fig.1) Males were predominant 117(58.5%), while females were 83(41.5%) with male to female ration of 1.4:1 as show in (Fig.2).Malaria parasites were seen in 73(36.5%) of suspected malaria patients, out of which 43(58.9%) were Plasmodium falciparum and 30 (41.0%) were Vivax. There was no case of plasmodium malairae or ovale (Fig.3). Majority of patients 196 (98%) improved, while 4(2%) died (Fig.4).

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 Balochistan, 30% from Sindh, 21% from Khyber Pakhtoon Khwa, 11% from FATA and 8% from Punjab[6]. It affects all age groups; even cases have been reported from neonates[9]. It has been reported as cause of acute fever without localizing signs (AFWLS) in children[10]. Finding malarial parasite in a well prepared blood film is mainstay of diagnosis of malaria[11]. Determination of species of malaria is also important for its effective and curative treatment as resistance to

Fig-1 AGE OF PATIENTS
n=200

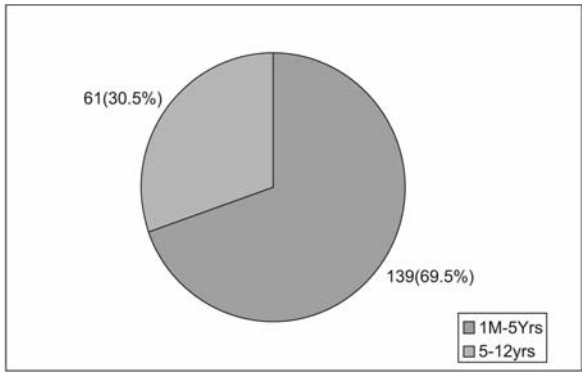


Fig-2 SEX OF PATIENTS
n=200

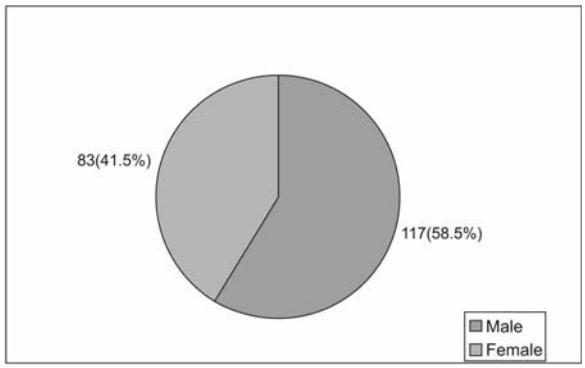


Fig-3 MALARIAL SPECIES
n=73

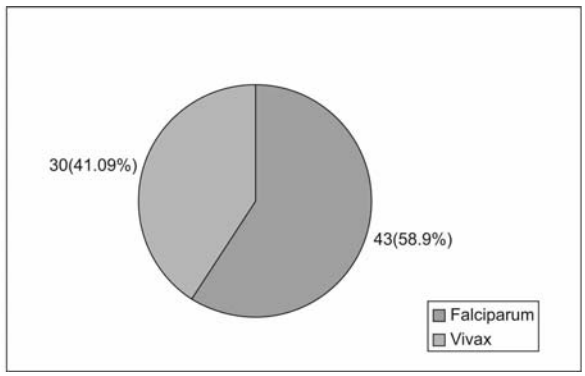
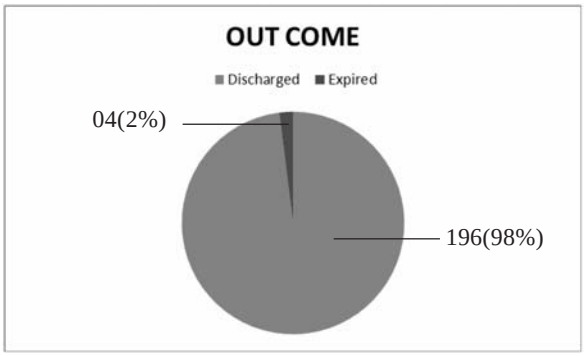


Fig-4 Out Come
n=200



chloroquine and other drugs have been reported[12] . In our study, out of 200 patients majority 139 (69.5%) were in 5-12 years age groups. Almost similar pattern was seen in India[13], where peak incidence was in 5-9 years and in Karachi[14], 89% of patients were from 3 months to 10 years. This may be due to their greater mobility and out door activities, hence more exposure to mosquitoes. Regarding sex distribution, there was male predominance, in our study males were 117 (58.5%) while females were 83 (41.5%). Male predominance was also reported by Idres etal[15] and in Jhangara[16]. This male predominance may be due to more outdoor activities of male children in comparison to female children or because of preference of parents to bring male children for medical care.

In this study malarial parasites (MP) were seen in 73 (36.5%) of children, who were suspected clinically as malaria. Similar findings were seen in Karachi[14] where MP was positive in 43.44%, in another study from Balochistan[17], MP was +ve in 34.2% of cases.

Regarding malarial species, Plasmodium falciparum was predominant 43 (58.9%) in comparison to Vivax 30 (41.09%). Falciparum predominance was also seen in many studies, Yasinzae et al[18] has reported prevalence of falciparum 71.7% and vivax 28.2%, Akbar et al[5] has reported malaria at children hospital Baqai Medical University and has observed high incidence of falciparum malaria in comparison to vivax (65% vs 35%). Yasinzae etal[19] and Kakersulemankhel etal[20] has observed prevalence of Falciparum 65.8% in Quetta rural and 55.5% in Quetta urban respectively. Falciparum in comparison to vivax was also predominant (51.4% vs 48.5%) in Karachi[14] and in Jhangara[16] prevalence of falciparum was 65%. Studies from India also showed continued rise in Plasmodium falciparum and its proportion has gradually increased to nearly 50% to 90% in recent years[3]. In this study there was no case of Plasmodium ovale or malairae. Similarly Plasmodium ovale or malairae was not reported from Karachi[14], Murtaza et al[21] and Nizamani et al[22]. Majority of our patients 196 (98%) improved only 04 (2%) died, either because of complicated malaria like cerebral malaria or because of resistance to antimalarials. This is comparable to other studies, mortality reported from karachi[23], was 12.5% in children with severe malaria, Tariq et al[24] from Lahore has reported mortality of 05% and in Ethopia[25], over all case fatality rate of sever malaria was 11.9%.

CONCLUSION:

Out of two hundred suspected cases of malaria seventy three cases (36.5%) were found malarial parasite positive with predominance of falciparum 43 (58.5%) hence indicating that Plasmodium falciparum was the predominant specie in this part of country.

RECOMMENDATION:

As we found Plasmodium Falciparum as predominant specie in our patients, so malarial patients especially those with complicated malaria should be started on either Quinine, artimether or combination of artimether and lumifantrine. So that malaria related morbidity and mortality can be decreased.

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