ORIGINAL PROF-1473

MALARIAL PARASITES SPECIES;
JACOBABAD DISTRICT SINDH, PAKISTAN.

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Article Citation:
Soomro FR, Pathan GM, Bajaj D, Kakar JK,. Malarial parasites species; Jacobabad District Sindh, Pakistan. Professional Med J Sep 2010;17(3):440-443.

ABSTRACT... To determine the pattern of malarial parasites species in Jacobabad District Sindh. **Design:** A retrospective observational study. **Setting:** This study was conducted at District Malarial control Centre Jacobabad with collaboration of pathology Department C.M.C Larkana and Leishmaniasis / Mosquito Zoology Lab: University of Balochistan Quetta. **Period:** One year 2005. **Patients & Methods:** During the study period blood smears were prepared from the suspected cases of malaria. The suspected cases with fever referred from various areas of Jacobabad District by General Practitioners, Basic Health Units, Rural Health Centres and Taluka Hospital were included in the study for conformation of malaria. The parasites were identified by using Giemsa stained thick and thin smears. **Results:** During the study period total of 58,989 blood smears were examined irrespective of age and sex and were conformed for malarial parasites, giving over all positivity rate of 0.91% (540 cases). Plasmodium falciparum was identified in 154 (28.52%) and Plasmodium vivax in 386 (71.48%) cases. **Conclusions:** The positive cases for malarial parasites were 0.91% and Plasmodium vivax found as most predominant species in the region.

Key words: Malaria parasites, Plasmodium vivax, Plasmodium falciparum

INTRODUCTION

Malaria is a major public health problem that affects millions of people world wide. Forty percent of the world's population, 3.2 billion people in 107 countries, is at risk of contracting malaria. It is estimated that each year malaria cause up to 500 million cases and up to 3 million deaths. Of those deaths, a large proportion is of children under age five in Sub-Saharan Africa. Malaria disproportionately affects the most vulnerable, and the majority of countries affected are also amongst the poorest countries in the world[1].

The 4 Plasmodium species that infect humans are *P. falciparum, P. vivax, P. ovale, and P. malariae.* Among these P. falciparum causes the most severe disease. It is the only species likely to cause fatal disease if untreated; nonimmune patients may die within days of their initial symptoms. P. vivax typically does not compromise vital organs but is responsible for increased morbidity[2].

Article received on: 03/02/2009
Accepted for Publication: 15/05/2010
Received after proof reading: 02/08/2010
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Malaria is endemic in Pakistan. The annual parasite incidence is highest in the Sindh Province[3]. This study was designed to measure the prevalence of malaria in Jacobabad District of Sindh Province.

MATERIAL AND METHODS

The study was carried out at District Malaria Control Centre Jacobabad with collaboration of Pathology Department, Chandka Medical College Larkana and Leishmaniasis & Mosquito Laboratory, Zoology Department, University of Balochistan Quetta. The study was carried out from January to December, 2005. Malaria cases were detected through passive case detection and active case detection. Diagnosis was based on clinical examination of patient and microscopic examination of thick and thin blood smears collected from all fever cases[4].

RESULTS AND DISCUSSIONS

A total of 58,989 blood smears were examined irrespective of patient age and sex (including Jacobabad Taluka, Thull Taluka and Garhi Khairo Taluka). The patients were from 03 Talukas (sub-districts) of Jacobabad. The overall slide positivity rate of malarial parasites in this study was 0.91%, where P.vivax 0.65% and P.falciparum 0.26. However pattern of malarial parasites species positivity P.vvax was 71.48% and P.falciparum was 28.52% as shown in table-I. None of the positive cases had mixed infection. The different taluka wise positive cases of the district shown in table-II.

Table-I. Month wise report of blood slides district jacobabad year 2005.

Month	No. Blood Slides	PV	PF	Mix	Total
Jan: 2005	4543	20	25	0	45
Feb: 2005	4782	35	10	0	45
Mar: 2005	8444	48	15	0	63
April 2005	4583	49	10	0	59
May 2005	5621	39	11	0	50
June 2005	4797	18	9	0	27
July 2005	4608	27	10	0	37
Aug: 2005	5341	22	8	0	30
Sep: 2005	5206	37	13	0	50
Oct: 2005	5444	52	12	0	64
Nov: 2005	4940	27	16	0	43
Dec: 2005	4280	12	15	0	27
Total	**58989**	**386**	**154**	**0**	**540**

Malaria constitutes one of the most important public health problem in developing countries. The disease is responsible for causing severe morbidity and mortality[4]. Pakistan being a tropical and agricultural country where majority of population is poor and lives in rural area. The existing defaulted irrigation system and improper dumping of garbage and other wastes contributes to malarigenic potential[5].

Amongst all the four species of malarial parasites P.vivax and P.falciparum are most common in Indo-Pakistan[6]. This study also shows the predominant species in most parts of Jacobabad districts was P.vivax. Similar observations are also made by various authors from different areas of Pakistan[6,7,8,10,11]. Infection with P.falciparum require more attention being serious than other species due to severe and fatal complication of cerebral malaria[12].

Prevention of malaria is one of the important aspects of reducing the prevalence of malarial infection which can be achieved by destroying or reducing vector[13]. The existing breeding sites for mosquitoes like canals and other puddles should be sprayed by effective insecticidal agents by local malaria control programme experts. Along these educational campaigns to encourage the use of repellents, protective clothing, screening, bed nets etc and other form of personal protection against bites are required to decrease the prevalence of malaria.

Table-II. Taluka wise report of blood slides year 2005.

Month	Jacobabad Taluka					Thull Taluka					Garhi Khairo Taluka				
	No. Blood Slides	PV	PF	Mix	Total	No. Blood Slides	PV	PF	Mix	Total	No. Blood Slides	PV	PF	Mix	Total
Jan: 2005	2198	15	20	-	35	1992	04	02	-	06	353	01	03	-	04
Feb: 2005	2164	21	06	-	27	2280	10	04	-	14	338	04	-	-	04
Mar: 2005	1772	26	06	-	32	1832	09	03	-	12	1240	13	06	-	19
April :2005	2158	33	05	-	38	1828	10	05	-	15	597	06	-	-	06
May : 2005	2099	19	03	-	22	3102	16	07	-	23	420	04	01	-	05
June: 2005	2119	09	05	-	14	2278	06	03	-	09	400	03	01	-	04
July: 2005	1669	09	04	-	13	2293	10	03	-	13	646	08	03	-	11
Aug: 2005	2776	13	05	-	18	2003	07	03	-	10	562	02	-	-	02
Sep: 2005	2159	19	03	-	22	2488	10	08	-	18	559	08	02	-	10
Oct: 2005	2181	36	07	-	43	2079	09	01	-	10	1184	07	04	-	11
Nov: 2005	2639	17	11		28	1908	08	03		11	393	02	02		04
Dec: 2005	1722	05	13	-	18	2426	07	02	-	09	132	-	-	-	-
Total	25656	222	88	-	310	26509	106	44	-	150	6824	58	22	-	80

CONCLUSION

This study showed that though predominant species in most parts of Jacobabad district was Plasmodium vivax. However, prevalence of P. falciparum require urgent attention and effective health care delivery system which is still not adequately adopted and implemented in the area. In this regard nation wide malaria control strategy including vector control and other preventive measures need to be carried out to bring the situation under control.

REFERENCES

1. **World Health Organization Expert Committee on Malaria.** WHO Technical Report Series 892, Geneva 2000.

2. Levinsion W: Blood & tissue protozoa-in: Medical Microbiology & Immunology; 10th. The Mc Graw Hill companies; 2008, 360-370.

3. Murtaza G, Memon IA, Noorani AK. **Malaria prevalence in Sindh.** Med Channel Jun 2004;10(2):41-2.

4. Khan SA, Anwar M, Hussain S, Qureshi AH, Ahmed M, Afzal S, **Comparison of optimal malarial test light microscopy for the diagnosis of malaria.** J Pak Med Assoc, Aug 2004; 54 (8): 404-7.

5. Tasawer Zahida, Manan F, Bhutta A. **Prevalence of human malaria at Multan-Pakistan.** A. J. Med. Sci. 3(2): 123-126 March-April, 2003.

6. Murtaza G, Memon IA, Memon AR, Lal MN, Kallar NA. **Malaria morbidity in Sindh and the Plasmodium species distribution.** Pak J Med Sci, Jul-Sep 2009; 25(4): 646-9.

7. Sheikh AS, Shaikh AA, Shaikh NS. **Endemicity of malaria in Quetta.** Pakistan J Med Res March 2005; 44(1):41-5.

8. Malik IA, Iqbal I, Malik S. **A study of cerebral malaria at Multan.** Pak Ped J Dec: 1996; 20(4):175-80.

9. Yasin MI, Kakar JK. **Incidence of malaria infection in rural areas of district Quetta, Pakistan.** J Bio Sci 2003; 3(9):766-772.

10. Hozhabri S, Akhtar S, Rahaber MH, Luby SP. **Prevalence of plasmodium slide positivity among the children treated for malaria, Jhangara, Sindh.** J. PAK. MED. Association. 2000;50(12):401-405.

11. Iqbal S, Pirzada AH, Rehman S, Iman N. **Cerebral malaria an experience in NWFP, Pakistan,** J Med Sci, Jan 2006; 14(1):35-9.

12. Soomro FR, Kakar JK, Pathan GM. **Malarial parasite; Side positivity rate at Shikarpur District Sindh, Pakistan.** Professional Med J 2009; 16(3):377-379.

13. Rehman A. **The passive case detection of malaria at tehsil Liaquetpur.** Professional Med J, Jan-Mar 2006; 13(1):32-4.