

## A COMPARATIVE STUDY OF FALCIPARUM MALARIA PARASITEMIA IN URBAN AND RURAL AREAS OF KARACHI-PAKISTAN

Syeda Azra Qamar\*

\*Government College for women shahrah-e-liaquat, Pakistan

**Introduction:** Malaria considers as a dangerous and worldwide communicable disease among dengue, tuberculosis, AIDS and HIV and is responsible to 2 million annual deaths especially in African countries. Malaria is caused by sporozoan parasites of the genus Plasmodium. There are four different species of Plasmodium are known, such as Plasmodium falciparum, P. vivax, P. ovale and P. malaria, but in Pakistan two of them (P. falciparum and P.vivax) are common. Falciparum malaria or cerebral malaria is very serious infection among four Plasmodium species because it increases the mortality rates throughout the World. This disease also related with age, sex, immunity, nutritional values, general health and socio-economic condition. The transmission of malaria is follows the bite of infected female Anopheles mosquito; the sporozoites transfer from the salivary glands of the infected mosquito and enter into the blood circulation of host and invade its hepatocytes, after asexual multiplication convert into thousand of merozoites that invade the erythrocytes and after repeat multiplication it gives schizont, some differentiate into sexual forms of male and female gametocytes that taken up by female Anopheles mosquitoes during blood meal, inside the mid-gut, the male gametocytes shows rapid division, produces 8 flagellated micro-gametes which fertilize the female macrogamete, resultant into ookinate goes to gut wall after en-cystment become oocyst which ruptures to release thousand of sporozoites that reaches to salivary glands of mosquitoes. In Pakistan Malaria belongs to the oriental eco-epidemiological type. Epidemics have occurred at 6 to 10 year's interval; about 40% of the cases were of P. falciparum in 1972-73 more common in Sindh province (64%). The main vector involved was A.culicifacies and A.stephensi, both developed resistances to an organophosphate. According to the malaria review mission report of 1998, malaria, especially caused by P. falciparum is on the increase in Pakistan.

**Study Area:** This study was conducted at different urban and adjacent rural areas of Karachi.from January 2003 to

December 2004. Karachi is the largest city and the capital of province Sindh, known as main seaport and the financial centre of Pakistan, its estimated population is 13 to 15 million, it is one of the largest cities in term of population and recognized to be 10th largest urban agglomeration in the world.

**Method:** Thick and thin blood smears were examined and the thin blood smears were fixed in 100% methanol and stained in 2% Giemsa. Different stages P. falciparum were investigated under the oil immersion as well as the number of parasites/200 white blood cells (WBCs) was counted and the density of parasites per micro liter of blood was also calculated.

**Result:** Out of 2671patients from urban and 1558 from adjacent Goths including male and female of different age groups visiting different hospital, clinics and medical camps having symptoms of fever, chill, abdominal pain, vomiting and headache were examined by peripheral blood smear for the diagnoses of different species of malarial parasite (MP). The blood smear only positive for P. falciparum were included in the study while, mixed infection of P. vivax were excluded from the study. Total number of infection, positive for P. falciparum was 353(13.21%) including (7.33% male 5.87% female) & 97(6.22%) including (4.42% male 1.79% female) from urban and rural areas respectively.

### Biography

Syeda Azra Qamar has completed her PhD from the University of Karachi, Pakistan and partial work of Ph.D. was completed at the University of Arizona, U.S.A. She is currently working as an Associate Professor at the Department of Zoology, from Government College for women shahrah-e-liaquat, Pakistan. She has also accomplished BDV course from Mexico in 2003, first international training course on functional genomics applied to insect vectors of human diseases from Thailand in 2005 and Practical short course on Infectious Disease Modeling from Thailand in 2012 organized by Oxford University. She has actively participated and presented research papers in different international conferences including 1st Geneva forum at Geneva, Switzerland 2006, XI ICOPA at Glasgow, Scotland, 6th European Congress at Verona Italy, XII ICOPA at Melbourne, Australia, 4th conference of the Scandinavian-Baltic Society of Parasitology, Oslo, Norway. 2011, 15 ICID at Bangkok, Thailand, 2012, 5th Congress of European Microbiologists Leipzig, Germany, and has visited twice as a research Scholar at Pasture Institute of Iran, serving as a Reviewer for journal articles and also a Member of South Initiative for Tropical Diseases Research (SSI) from 2003 and Member of advisory board of Annals of tropical medicine and public health from 2009, She has published 10 papers in reputed journal.

drazra\_zoologist@hotmail.com