

### ABSTRACT

Egypt represents the only focus in the Mediterranean region where *Plasmodium falciparum* transmission still occurs. A longitudinal parasitological study has been implemented (September 1995 to December 1996) in Faiyoum, Egypt. A total of 9065 blood slides for malaria parasites were taken from all people in the study area as mass blood examination (MBE); those attending the malaria unit as passive case detection (PCD) as well as from neighborhood of the detected cases (NOD). They were stained by Giemsa stain and examined under standard conditions for positivity, parasite species and parasite density. Our results show that MBE detected 61.5% of malaria cases while 23.1% and 15.4% of the confirmed cases were detected through PCD and NOD respectively. The overall parasite rate was 5.7/1000 examined population. *P. falciparum* was the most predominant species (96.1%), followed by *P. vivax* (3.9%). The epidemiological factors causing the persistence of malaria transmission in the study area are discussed.

### INTRODUCTION

Egypt represents the only focus in the Mediterranean region where *Plasmodium falciparum* transmission still occurs. This focus may represent a "relic" population of the once wide spread Mediterranean *P. falciparum*.

The presence of malaria has been identified in Egypt since ancient times. According to Madwar (1936) records at Dandara Temple in Upper Egypt described intermittent fever following the Nile Flood which was presumably due to malaria.

Miller et al (1994) reported the presence of significant concentrations of *P. falciparum* antigen in the skin, muscles, brain and lung samples from

naturally desiccated mummies from Upper Egypt suggests that they were suffering from untreated malaria at that time of their death more than 5000 years ago.

Historically, four malaria parasite species: *P. vivax*, *P. falciparum*, *P. malariae* (Halawani & Shawarby, 1957) and *P. ovale* (Abdel-Mageed, 1936) were found in Egypt. Due to successful application of DDT since 1946, there was a dramatic decline in malaria incidence till during 1990s where all governorates have been freed of malaria except local transmission continued only in Faiyoum where *P. falciparum* predominated (World Health Organization, 1997).

A literature review revealed a serious lack of epidemiological data describing the malaria situation in Faiyoum Governorate. Such information are greatly needed as base line data in the planning and evaluation of malaria intervention programs.

To clarify the malaria situation, a project entitled "Determination of epidemiological factors causing the persistence of malaria, *P. falciparum* transmission in Faiyoum Governorate, Egypt" was initiated at the High Institute of Public Health and was supported through EMRO/TDR Small Grants Scheme.

### MATERIAL AND METHODS

**Study area:** Faiyoum Governorate is more or less a large agricultural oasis. It lies about 90 Km South West of Cairo and is located between latitude 29° 45' and 30° 15' and longitude 30° 30' and 31°. It occupies an area of about 1778 Km<sup>2</sup> and with a population around 1,600,000. Faiyoum Governorate is composed of five districts; Faiyoum, Sinnuris, Ebshway, Itsa and Tamiya. It is irrigated by Baher Youssef, a branch of the River Nile which breaks up into