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A cohort study on asymptomatic Plasmodium-infected malaria among immigrants in malaria--elimination programmed areas of south eastern Iran to underpin malaria eradication

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Background: Due to the implementing control programs in malaria-endemic areas of the world, the incidence of malaria has been dramatically reduced. Meanwhile, asymptomatic *Plasmodium* infections in endemic areas may act as a reservoir of disease, hence representing a significant hurdle in malaria elimination programs. The aim of the present study was to investigate the role of legal and illegal immigrants' malaria elimination programs in Iran.

The aim of the present study was to show the role of asymptomatic malaria individuals may contribute to the maintenance of P. falciparum/vivax infection in malaria--elimination programmed areas of south eastern Iran.

Methods: This longitudinal cohort study was performed from October 2013 to April 2015 in the border areas of Saravan and Chabahar counties in Sistan & Baluchistan province in southeast of Iran. A total of 765 immigrants to south east parts of Iran were physically examined and blood samples were taken 3 times at 6-month intervals. Microscopic examination, indirect fluorescence antibodies test (IFAT), and Real-time PCR were used for detecting *Plasmodium* infection.

Results: Upon analysis of 765 immigrants, seven (0.9%) had specific malaria symptoms and microscopy, molecular, and serological tests were positive. *Plasmodium* vivax and P. *falciparum* were detected in five and two of these individuals, respectively. Among the 758 individuals without signs and symptoms of malaria, anti-*Plasmodium* antibodies were detected in five, while the results of microscopy and PCR were negative for all. Two out of five seropositive cases were excluded after a follow-up period due to back immigration. After six months of follow-up, three cases remaining in the study were still seropositive and only one of them was showed malaria- signs and symptoms.

Conclusion: Asymptomatic and symptomatic *Plasmodium*-infected cases may contribute to the maintenance of *P. falciparum/vivax* infection and even establishment of the transmission cycle of the parasites in the malaria-endemic areas.

Biography

Gholamreza Hassanpour received his BS Degree in the Medical laboratory Sciences from Yazd University of Medical Sciences, Tehran, Iran, 2001 & MSc of Medical Parasitology from Tehran University of Medical Sciences, Tehran, Iran, 2011 and PhD in Medical Parasitology from Tehran University of Medical Sciences, Tehran, Iran, 2016. He is working as the Assistant Professor of Medical Parasitology, Center for Research of Endemic Parasites of Iran, Tehran University of Medical Sciences. He has also the Executive Director of the core facility Research Lab, Tehran University of Medical Sciences. He has worked in Center for Research of Endemic Parasites of Iran and School of Public Health, Tehran University of Medical Sciences for over 15 years. Her research focuses on malaria in Iran.

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