

Malaria Antibodies, IgG by ELISA

USEFUL IN SCREENING FOR MALARIAL EXPOSURE

Test Highlights

- Detects antibodies against *Plasmodium falciparum*, *P. vivax*, *P. ovale*, and *P. malariae* species.
- Useful for the retrospective diagnosis of malaria in a previously non-immune individual.
- Can be used to screen for chronic malaria.

Clinical Background

- More than 300 million cases of malaria occur per year worldwide, of which more than one million result in death. Malaria is not endemic in the United States, but in recent years, approximately 1200-1400 new cases have been reported each year. The vast majority of these are individuals such as travelers and immigrants who acquired malaria in endemic areas.
- Malaria is caused by the protozoan parasites *Plasmodium falciparum*, *P. vivax*, *P. ovale*, and *P. malariae*, and is transmitted by a species of the female Anopheles mosquito. *P. falciparum* is widely prevalent in Africa and causes the most serious malarial infections, potentially resulting in death. *P. vivax* is found in Asia, South America, and parts of Africa. *P. ovale* and *P. malariae* are less commonly encountered. *P. vivax* and *P. ovale* are known to have dormant liver stages, thus capable of causing recrudescence malaria.
- Typically, malaria causes non-specific flu-like symptoms.
- The diagnosis of malaria in the acute clinical setting has traditionally relied upon examination of Giemsa stained peripheral blood smears. Serologic testing is not recommended in the acute diagnosis of malaria; however, it may be useful in other circumstances, such as the retrospective diagnosis of malaria in a previously non-immune individual and screening for chronic malaria.
- Serologic IgG response is rapid and usually occurs within one week of onset of parasitemia. Antibodies begin to wane after approximately one month and persist for several months to years.

Indications For Use

- Retrospective diagnosis of malaria in a previously non-immune individual
- Screening for chronic malaria

Interpretation

- A positive result with consistent clinical symptoms and history is supportive of a diagnosis of malarial infection. Malaria smear (Giemsa stain) should be performed for confirmation of malarial infection.
- False-positive results for malarial antibodies may be seen in up to 18 percent of antinuclear antibody positive or rheumatoid factor positive patients. Therefore, results should be interpreted with caution and correlated with clinical information.

Limitations

Serologic results from this assay should not be used as the sole method of diagnosis.

Methodology

Enzyme-linked immunosorbent assay (ELISA)

Related Tests

Malaria smear (Giemsa stain) (0049025) is recommended during acute infection or for confirmation of a positive ELISA result for malaria antibodies.

References

- Draper CC and Sirm SS. Serologic investigations in retrospective diagnosis in malaria. Br Med J, 1980;280:1575-1576.
- Eliades MJ, Shah S, Nguyen-Dinh P, Newman RD, Barber AM, Roberts JM, Mali S, Parise ME, and Steketee R. Malaria Surveillance - United States 2003. MMWR 2005;54:25-39.
- Kitchen AD, et al. Evaluation of a malarial antibody assay for use in the screening of blood and tissue products for clinical use. Vox Sang 2004;87:150-155.
- Moody A. Rapid diagnostic tests for malaria parasites. Clin Microbiol Rev 2002;15:66-78.

Test Information

0051356

Malaria Antibodies, IgG

For specific collection, transport, and testing information, refer to the ARUP Web site at www.aruplab.com.