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### Original Article

#### A Comparative Study on Sensitivity and Specificity of Conventional and Unconventional IgG and IgM Assays for Diagnosis of Toxoplasmosis

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#### Abstract:

**Background:** Toxoplasmosis is a zoonotic disease with widespread distribution throughout the world. It is caused by the protozoan parasite *Toxoplasma gondii*. As laboratory diagnosis of toxoplasmosis is not straightforward, this study was aimed to compare the sensitivity and specificity of conventional and unconventional methods of diagnosis based on the measurement of IgM and IgG for determination of the best method.

**Methods:** One hundred suspected cases of toxoplasmosis referred to two laboratories in Tehran and Karaj were entered into this comparative analytical study. The serum specimens of these cases were tested with ELISA, IFA, chemiluminescence (CLIA) and ELFA for presence of IgG and IgM.


**Results:** When compared with the ELFA IgG method, the CLIA IgG had the highest sensitivity, specificity, and positive and negative predictive values (100%). In comparison with ELFA IgM method, CLIA IgM and ELISA IgM had the same sensitivity (92%), but the sensitivity of ELISA IgM (100%) was higher than CLIA IgM (97.3%). The positive and negative predictive values of ELISA IgM were 100% and 97.4%, respectively and those of CLIA IgM were 96% and 98%, in that order.

**Conclusion:** Although, the reliability of the compared methods are close to each other, the automatic methods (CLIA, ELFA) are preferred because of high reproducibility, less personnel costs, shorter test time and etc. Therefore, we recommend application of these methods for diagnosing of toxoplasmosis and re-emphasize that these are the most suitable tests for measurement of toxoplasma IgM levels.

#### Keywords:

*Toxoplasmosis . Sensitivity . Specificity . IgG . IgM*

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