

## Seroepidemiology of *Toxoplasma gondii* infection in women of child-bearing age in central Ethiopia

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**Background:** *Toxoplasma gondii* infections during pregnancy can result in abortion or congenital defects. Prevalence and risk factors of toxoplasmosis in women of child-bearing age in Ethiopia are unknown. The current study was conducted with the objectives of estimating the seroprevalence and potential risk factors in acquiring *T. gondii* infection by women of child-bearing age in Central Ethiopia.

**Methods:** A cross-sectional study was conducted from March 2011 to September 2011. Sera of 425 women were analyzed by indirect enzyme linked immunosorbent assay (ELISA). A questionnaire survey was administered for all study participants to gather information on risk factors.

**Results:** The study revealed that anti- *T. gondii* IgG antibodies were detected in 81.4% of the samples of which 78.4% were positive for only IgG and 3.06% positive for both IgG and IgM antibodies. Seroprevalence of IgM antibodies to *T. gondii* (4.0%, 95% CI: 2.14, 5.86) was suggestive of recent infections. Of the 213 pregnant women 9 (4.2 %) were IgM reactive. Out of 17 potential risk factors investigated, univariate logistic regression showed significant association of *T. gondii* infection with study area, age, pregnancy status, raw vegetable consumption, source of water, presence of cats at home, contact with cats, HIV status and precaution during cats' feces cleaning ( $P \leq 0.05$ ). The final logistic regression model revealed that: the probability of acquiring *T. gondii* infection by women of Debre-Zeit was 4.46 times (95% CI of adjusted odds ratio [aOR]: 1.67, 11.89;  $P = 0.003$ ) higher compared to women of Ambo, pregnant women were twice (95% CI aOR: 1.13, 3.59;  $P = 0.018$ ) more likely to be seropositive than non-pregnant women and women who consume raw vegetable were at increased risk of infection (aOR = 2.21, 95% CI: 1.03, 4.78;  $P = 0.043$ ) than women who didn't consume.

**Conclusion:** The seroprevalence of *T. gondii* infection in women of child-bearing age in Central Ethiopia is high. Study area, pregnancy and raw vegetable consumption are risk factors to acquire *T. gondii* infection. Educational program, antenatal screening of pregnant women and further epidemiological studies to uncover the economic and health impact of toxoplasmosis are suggested.

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