

Seroepidemiological Study of *Toxoplasma gondii* Infection in Women of Child-Bearing Age in Communities in Osun State, Nigeria

Authors : Olarinde Olaniran, Oluyomi A. Sowemimo

Abstract : Toxoplasmosis is frequently misdiagnosed or underdiagnosed, and it is the third most common cause of hospitalization due to food-borne infection. Intra-uterine infection with *Toxoplasma gondii* due to active parasitaemia during pregnancy can cause severe and often fatal cerebral damage, abortion, and stillbirth of a fetus. The aim of the study was to investigate the prevalence of *T. gondii* infection in women of childbearing age in selected communities of Osun State with a view to determining the risk factors which predispose to the *T. gondii* infection. Five (5) ml of blood was collected by venopuncture into a plain blood collection tube by a medical laboratory scientist. Serum samples were separated by centrifuging the blood samples at 3000 rpm for 5 mins. The sera were collected with Eppendorf tubes and stored at -20°C analysis for the presence of IgG and IgM antibodies against *T. gondii* by commercially available enzyme-linked immunosorbent assay (ELISA) kit (Demeditec Diagnostics GmbH, Germany) conducted according to the manufacturer's instructions. The optical densities of wells were measured by a photometer at a wavelength of 450 nm. Data collected were analysed using appropriate computer software. The overall seroprevalence of *T. gondii* among the women of child-bearing age in selected seven communities in Osun state was 76.3%. Out of 76.3% positive for *Toxoplasma gondii* infection, 70.0% were positive for anti- *T. gondii* IgG, and 32.3% were positive for IgM, and 26.7% for both IgG and IgM. The prevalence of *T. gondii* was lowest (58.9%) among women from Ile Ife, a peri-urban community, and highest (100%) in women residing in Alajue, a rural community. The prevalence of infection was significantly higher ($P= 0.000$) among Islamic women (87.5%) than in Christian women (70.8%). The highest prevalence (86.3%) was recorded in women with primary education, while the lowest (61.2%) was recorded in women with tertiary education ($p =0.016$). The highest prevalence (79.7%) was recorded in women that reside in rural areas, and the lowest (70.1%) was recorded in women that reside in peri-urban area ($p=0.025$). The prevalence of *T. gondii* infection was highest (81.4%) in women with one miscarriage, while the prevalence was lowest in women with no miscarriages (75.9%). The age of the women ($p=0.042$), Islamic religion ($p=0.001$), the residence of the women ($p=0.001$), and water source were all positively associated with *T. gondii* infection. The study concluded that there was a high seroprevalence of *T. gondii* recorded among women of child-bearing age in the study area. Hence, there is a need for health education and create awareness of the disease and its transmission to women of reproductive age group in general and pregnant women in particular to reduce the risk of *T. gondii* in pregnant women.

Keywords : seroepidemiology, *Toxoplasma gondii*, women, child-bearing, age, communities, Ile -Ife, Nigeria

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