

International Conference on **Parasitology**

August 24-26, 2015 Philadelphia, USA

Evaluation of three DNA extraction techniques in molecular diagnosis of toxoplasmosis

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Conventional laboratory diagnosis of toxoplasmosis is based on the presence of IgM and IgG anti-*Toxoplasma gondii* antibodies; however molecular techniques have emerged as alternative tools due to their increased sensitivity. This study aimed to: 1) compare the performance of three DNA extraction techniques and 2) assess the sensitivity of my Taq blood PCR kit for the molecular diagnosis of toxoplasmosis. Ninety male municipality workers from Dubai-UAE were included in the study with mean age (SD±) 34.544 ± 6.342. Subjects were classified according to nationality and age groups. ELISA test kits for detection of Anti-Toxoplasma IgM were used to screen the samples and results were confirmed by western blot. PCR was done for all positive samples using extracted DNA by dried blood spot DNA isolation kit, genomic DNA isolation kit and FTA elute cards. Another PCR was run on positive samples using my Taq blood PCR kit, in which whole blood was used direct without DNA extraction. A total of 11/90 (12.2%) were found to be positive for anti-Toxoplasma IgM using ELISA test, 7/11 were confirmed by western blot. The highest percentage of infection was noticed in age group (23-35years) and in Asian nationality. The sensitivity of the three DNA extraction techniques was as follow, 100% for both dried blood spot and genomic DNA isolation kits, and 71.43% for FTA elute cards. However the sensitivity of my Taq blood PCR kit was 28.57%.

Biography

Doaa Sultan completed her education in Mansoura Faculty of Medicine, Mansoura University, Egypt. She graduated in 1991 with MBChB and she completed her Master's degree in Parasitology in 1997 and her PhD in 2004. She is working as an Associate Professor in Medical Parasitology, Dubai Medical College. She has published more than 25 papers in conferences and reputed journals.

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