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Investigating the relationship between Lung Cancer and the infection with the parasite *Toxoplasma gondii*

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Toxoplasma gondii is an obligate intracellular organism that has worldwide distribution and is highly prevalent among animals and humans. Although usually asymptomatic, it can cause serious conditions in immunocompromised individuals (pneumonia, ocular toxoplasmosis and abortions). Many studies have been investigated to find *T. gondii* among cancer patients. However, none have addressed the significance of the infection with this ubiquitous parasite among this group. We aimed to investigate the relationship between *T. gondii* infection and lung cancer. In a study done at Salford University, 72 lung samples from patients with lung cancer were investigated for *T. gondii* infection by nested PCR and immunohistochemistry (IHC) and it documented striking 100% prevalence. We recruited 10 lung samples via bronchoalveolar lavage from healthy individuals to be used as a control group for the lung cancer patients study. Samples were tested with nested PCR targeting five *T. gondii* specific markers (B1, SAG1, SAG2 3', SAG2 5' and SAG3) and only one sample was positive for *T. gondii* infection with all five markers and in IHC. Statistical analysis revealed an extremely significant difference between the lung cancer patients and the non-cancerous control group ($P < 0.0001$). We aim to explore further lung cancer samples as well as control samples to investigate the association between *T. gondii* infection and lung cancer by confocal microscopy, RT-PCR and q-PCR.

Biography

Muyassar Tarabulsi is currently a 3rd year PhD student in Salford University School of Environment and Life Sciences. She is a holder of MBBS degree in Medicine of Vector Biology from the University of Salford, UK.

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