

TgChBrUD1 Brazilian strain of *Toxoplasma gondii* is controlled by azithromycin and can modulates cytokine production in human placental explants.

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Toxoplasma gondii is an obligate intracellular protozoan parasite that causes a variety of clinical syndromes, but the infection is severe in immunocompromised individuals and during pregnancy due to the possibility of transplacental transmission of the parasite causing congenital toxoplasmosis. Strains of this parasite are genetically diverse and the genotype has been implicated in disease severity. Uberlândia city has two *T. gondii* parasite strains named TgChBrUD1 and TgChBrUD2 that are considered virulent in cells and animal models. Thus, the aims of this study were to determine the virulence and to examine the effects of azithromycin against Brazilian strains *T. gondii* infection in human placental explants. Cultures of third trimester explants were infected with RH or ME-49 or TgChBrUD1 or TgChBrUD2 strains of *T. gondii* and after 24 hours were treated with azithromycin or spiramycin or combination of pyrimethamine and sulfadiazine. The villous explants viability was analyzed by LDH assay and morphological analysis. Parasite proliferation, as well as production of cytokines by villous explants, was analyzed by qPCR and ELISA, respectively. For all tests, we performed GraphPad version 5.0 and $P < 0.05$ was considered statistically significant. The treatments were not toxic for villous explants. TgChBrUD1 infected villous explants showed higher parasite burden compared with RH or ME-49 or TgChBrUD2 infected villous explants. Treatment with either azithromycin or spiramycin or combination of pyrimethamine and sulfadiazine significantly reduced intracellular proliferation of *T. gondii*, regardless of the strain, compared to untreated villous explants. TgChBrUD1 infected villous explants produced a larger amount of MIF, IL-6 and TGF- β compared with RH or ME-49 or TgChBrUD2 infected villous explants. Treatment with azithromycin was as effective as conventional treatment of human placental villous infected with *T. gondii*, regardless of the strain, suggesting that it may be an alternative drug for the prevention of congenital infection. In addition, TgChBrUD1 strain was able to replicate more in villous explants than others strains and modulate important cytokines involved in parasite control, showing that different strains has different strategy to evade of the host immune response and ensure the survival.

Key words: *Toxoplasma gondii*; Brazilian strains, Azitromycin

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