Differential infectivity of two Trypanosoma cruzi strains in placental cells and tissue

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 Congenital Chagas disease, caused by Trypanosoma cruzi (T. cruzi), has become epidemiologically relevant. The probability of congenital transmission depends on the maternal and developing fetal/newborn immune responses, placental factors and importantly, the virulence of the parasite. It has been proposed, that different genotypes of T. cruzi and their associated pathogenicity, virulence and tissue tropism may play an important role in congenital infection. Since there is no laboratory or animal model that recapitulates the complexities of vertical transmission in humans, here we studied parasite infectivity in human placental explants (HPE) as well as in the human trophoblast-derived cell line BeWo of the Y(DTU II) and the VD (TcVI) T. cruzi strains; the latter was isolated from a human case of congenital infection. Our results show that the VD strain is more infective and pathogenic than the Y strain, as demonstrated by qPCR and cell counting as well as by histop