Accidental discovery of *Trypanosoma theileri* in the *in vitro* culture of the heifer lymphocytes

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Abstract

The diagnostics of the *Trypanosoma sp.* invasion by means of the classic methods i.e. the methods of thin smears or thick drop or even the microhematocrite method, especially when intensity of infection is low, is very difficult. In our climatic zone, trypanosomosis is usually considered as an exotic disease. An opportunistic model of the infection with the parasite and a lack of current data on the prevalence of *T. theileri* in the cattle in Poland cause that it is neglected as a potential reason of contamination of tissue cultures in cattle. We showed the presence of *T. theileri* in culture of isolated lymphocytes from one of six heifers examined. It seems that the prevalence of the invasion of the parasite is not very intense but it should be considered as a possible threat for bovine cell culture. It is also worth including this parasitosis in the differential diagnostics of other diseases that are infectious and/or proceed with symptoms of immunosuppression.

Key words: cattle, parasite, blood, trypanosomosis

Introduction

*Trypanosoma (Mega trypanum) theileri* Laveran, 1902 is a species typical for the *Mega trypanum* sub-genus, which is parasitic solely for cattle (Hare 1972, cited in Rodrigues et al. 2003) or for cattle and buffalo (Wells 1976, cited in Rodrigues et al. 2003). The *Trypanosoma theileri* belongs to the largest *Trypanosoma* which occur in mammals, reaches a length of more then 100 µm and has a small kinetoplast situated very close to the nucleus (Wells 1976, cited in Rodrigues et al. 2003). Among a few species of trypanosomes that occur in cattle, only *T. theileri* occurs in Central Europe (Lozano et al. 1984, cited in Reiter et al. 1987). The insects that belong to *Haematopota*, *Hybomitra* and *Tabanus* genera (Bose et al. 1962), *Hyalomma anatolicum anatolicum* ticks (Shastri and Deshpande 1981, Latif et al. 2004), and probably, also the ticks of *Ixodes* genus (Doherty et al. 1993) may be its vectors.

*T. theileri* is a cosmopolitan parasite with high incidence on every continent except Antarctica. In Europe, isolates of *T. theileri* from cattle have been described, among other countries, in Belgium (Verloo