Epidemiological study on tropical theileriosis (Theileria annulata infection) in the Egyptian Oases with special reference to the molecular characterization of Theileria spp

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Abstract:

Theileria annulata infection is a tick-borne disease known as Egyptian fever since 1947. It is a destructive obstacle for the livestock production in the Egyptian Oases (EL-Wady EL-Geded Province). The present study was conducted on 1068 cattle, ranged from below one year to more than eight years old; belonged to different farms and villages in EL-Wady EL-Geded Province. The infection was confirmed by blood smears, Tams-1 target based polymerase chain reaction (Tams-1 PCR), 18Ss rRNA polymerase chain reaction and semi nested-polymerase chain reaction (nPCR) followed by DNA sequencing and phylogenetic analyses, in addition to tick identification. Molecular techniques confirmed the infection in 63.6% (679/1068) of the examined animals while Giemsa stained blood smears confirmed it in 36.8% (393/1062). Male and female animals showed molecular confirmed infection rates of 64.5 and 62.7%, respectively. Animals less than one year old were more infected (83.33%, 400/480) followed by animals less than three years (57.31%, 149/260) and animals less than five years (42.45%, 90/212), respectively. On the other hand, animal of five years old or above were less infected and the infection rate in this group was estimated to be 34.48% (40/116). Two tick species were identified during the present study: Hyalomma anatolicum and Rhipicephalus annulatus. Theileria annulata was the only Theileria species found in the Egyptian oases in respect to phylogenetic analysis of the obtained sequences.

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