

Free-living amoebae in context of One Health approach

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The concept of the One Health approach is based on the intersection of human, animal, plant and environmental health. The loss of biodiversity and habitat fragmentation caused by deforestation, in addition to human contact with forest areas, create an ideal scenario for the spread of microorganisms, favoring the emergence of diseases. Among the potentially pathogenic microorganisms, free-living amoebae (FLA), are widely distributed protozoan, which have been isolated from diverse environments (water, air and soil). Among the FLA, the genera *Acanthamoeba* and *Naegleria* cause encephalitis and the first one also causes keratitis in humans and animals. *Acanthamoeba* spp. are considered the Trojan horse of the microbial world playing a role in the spread of bacteria in the environment and living beings. Some bacteria (*Mycobacterium avium*, *Vibrio cholerae*, *Legionella pneumophila*, among others) are food sources for FLA, at the same time they can resist to phagocytosis and multiply within them and serve as an environmental reservoir and vectors transmitting them to humans and animals. In recent years, research has shown that although there are more reports of keratitis by *Acanthamoeba* spp. in humans, especially in contact lens wearers, animals such as dogs and cats have been affected by the disease. *Naegleria fowleri* is a thermophilic protozoan that causes Primary Amebic Meningitis (PAM), a highly lethal disease. Its occurrence and dispersion in the environment have increased due to climate change, especially in relation to the increase in temperature in recent decades. In the USA there were, until the year 2020, 151 cases in humans, with only 5 survivors. Here in southern Brazil, the municipality of Glorinha, two cases of PAM in cattle were reported (2017 and 2019, respectively). The One Health approach is extremely important, because can be inserted in the context of the dispersion of FLA. Therefore, the holistic view of the One Health approach is increasingly necessary in understanding how the dispersion of these microorganisms occurs in the environment and how we can avoid the diseases caused by them.

Key words: One Health approach, *Acanthamoeba* spp., *Naegleria fowleri*, climate change.

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