**First report of rare co -infection of *Anaplasma* sp, *Erhlichia* sp, *Hepatozoon* sp and *Trypanosoma* sp in a German shepherd dog in Vietnam**

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Vector-borne diseases such as Anaplasma sp.*,* Ehrlichia sp.*,* Hepatozoon sp.*, and* Trypanosoma sp. cause serious health risk for domestic dogs, especially in tropical and subtropical countries where ticks and other blood-feeding arthropod are common. These pathogens can cause a range of clinical symptoms from mild to served or even life threatening if dogs are not diagnosed and treated promptly. This case report describes a 1.5 years -old male German Shepherd dog presented at Kien Giang Veterinary Hospital, Kien Giang province, Vietnam with case history of tachypnea, weakness, lethargy, brown salivation, anorexia, and polydipsia. Clinical examination of the dog revealed a fever of 39.9oC, pale gums, pale eyes, eyelid edema and heavy tick infestation. A complete blood count revealed a decrease in total leukocytes (5.1x109/L), erythrocytes (4.3x1012/L), and platelets (90x109/L). Biochemical blood analysis showed a decrease in albumin (15.5 g/L), but an increase of globulin (58.2 g/L), alanine transaminase (275 U/L), alkaline phosphatase (534 U/L) and creatine kinase (350 U/L). Microscopic observation of blood smear clearly identified the presence of four pathogens: *Anaplasma* sp., *Erhlichia* sp., *Hepatozoon* sp. and *Trypanosoma* sp.. To the best of our knowledge, this is a first case of co-infection with these four pathogens in dog reported in Vietnam. This case report highlights the necessity of early diagnose and vector control strategies in high-risk regions.

Keywords: *Anaplasma* sp., Dog, *Erhlichia* sp., *Hepatozoon* sp., *Trypanosoma* sp., Vietnam