

DOI 10.24425/122622

*Original article*

# **Transthoracic lung and pleura ultrasonography as a diagnostic tool of pulmonary edema in dogs and cats**

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## **Abstract**

Despite the consensus on the role of lung and pleura ultrasound in human medicine, veterinary medicine questions credibility of the pulmonary evaluation in ultrasound examination, based on the analysis of artifacts in animals with clinical signs of respiratory failure and possibility of pulmonary edema diagnosis with recognition of the degree of its severity. The study was conducted on 47 animals (29 dogs and 18 cats) of different breeds, age and sex. In all of animals prior to the transthoracic lung and pleura ultrasound examination (TLPUS), all animals were subjected to a clinical examination and hematological blood test as well as chest radiography examination in three projections. Ultrasound imaging of the chest in each animal was performed at designated four defined segments. TLPUS in dogs and cats based on an analysis of artifacts allows recognition of pulmonary edema, to the degree comparable to chest X-ray examination. The number of depicted B-lines artifacts is proportional to the degree of pulmonary edema. These results allow to reduce the number of radiographs and allow the shortening of the diagnostic process for patients in life-threatening condition.

**Key words:** dog, cat, respiratory failure, pulmonary edema, lung ultrasound