

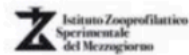
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**SOCIETÀ ITALIANA DELLE  
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**Università degli Studi di Napoli "Federico II"**

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## RESPIRATORY IMPAIRMENT AND OUTCOME IN DOGS WITH ACUTE LEPTOSPIROSIS SUBMITTED TO HEMODIALYSIS

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Canine Leptospirosis is a multiorgan disease, which can cause pulmonary changes in a significant percentage of patients [1,2,3,4]. The aim of the study was to evaluate oxygen tension-based indices, respiratory distress and radiographic patterns in dogs with acute leptospirosis submitted to hemodialysis (HD), and to compare them with survival rate. 19 dogs with acute kidney injury (AKI) secondary to leptospirosis and submitted to HD were enrolled. All the dogs of the present study showed clinical, laboratory and ultrasound findings consistent with AKI. Diagnosis of leptospirosis based on positive serum or urine PCR and/or serum MAT. At hospital admission oxygen tension-based indices (PO<sub>2</sub>/FIO<sub>2</sub>, P[A-a]O<sub>2</sub> gradient, PaO<sub>2</sub>, PCO<sub>2</sub>, SaO<sub>2</sub>) were obtained by arterial blood sample at room air (FiO<sub>2</sub> 21%) from the dorsal pedal artery. Chest x-rays (right and left lateral and ventrodorsal) were performed before starting HD. Respiratory distress, (P/F<300 mmHg or P/F<200 mmHg and clinical respiratory effort) and mortality during hospitalization were recorded. Dogs were divided in survivors (S) and non-survivors (NS) according to outcome. Data were tested for normality by Kolmogorov-Smirnov test. Unpaired t-test was used to compare oxygen tension-based indices between S and NS. Prevalence of respiratory distress and radiographic patterns in S and NS were compared by Fisher's, and chi-square test respectively. Survival rate of dogs showing respiratory distress during hospitalization were compared with those that didn't develop any respiratory clinical sign or oxygen impairment, by Kaplan-Meier. Results were considered statistically significant for p<0.05.

At hospital admission, no significant difference in oxygen tension-based indices and PaCO<sub>2</sub> and SaO<sub>2</sub> was found between S (n=11) and NS (n=8). In S group chest x-rays showed normal lungs (1/11), interstitial pattern (5/11), mixed pattern (5/11). In NS group chest x-rays showed alveolar pattern (1/8), interstitial pattern (3/8), mixed pattern (4/8). No significant difference concerning radiographic pattern was found between S and NS. A statistically higher prevalence (p=0.02) of respiratory distress was found in NS (6/8) compared with S (2/11). Dogs with no signs of respiratory distress showed a significantly higher survival rate (p=0.02).

In our cohort of dogs, oxygen tension-based indices and radiographic pattern at hospital admission did not differ significantly between S and NS. The development of respiratory distress during hospitalization seemed to affect significantly outcome of dialyzed dogs with acute leptospirosis.

[1] Kohn B. et al. Pulmonary abnormalities in dogs with Leptospirosis, *J Vet Intern Med*, 24: 1277-82, 2010. [2] Schuller S. et al. Immunoistochemical detection of IgM and IgG in lung tissue of dogs with leptospiral pulmonary haemorrhage syndrome (LPHS), *Comp Immunol Microbiol Infect Dis*, 40: 47-53, 2015. [3] Greenlee JJ. et al. Experimental canine leptospirosis caused by leptospira interrogans serovars pomona and bratislava, *Am J Vet Res*, 66: 1816-22, 2005. [4] Adin CA. and Cowgill LD. Treatment and outcome of dogs with leptospirosis:36 cases (1990-1998), *J Am Vet Med Assoc*, 216: 371-5, 2000.