Neonatal Sepsis in Dogs Attend in Veterinary Hospital of the Sao Paulo State University, Botucatu, Brazil – Incidence, Clinical Aspects and Mortality

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Abstract : Neonatal sepsis is a systemic response to the acute generalized infection caused by one or more bacterial agents, representing the main infectious cause of neonatal mortality in dogs during the first three weeks of life. This study aims to describe the incidence of sepsis in neonate dogs, as well as the main clinical signs and mortality rates. The study included 735 neonates admitted to the Sao Paulo State University (UNESP) Veterinary Hospital, Botucatu, Sao Paulo, Brazil, between January 2018 and November 2019. Seven hundred thirty-five neonates, 14% (98/703) presented neonatal sepsis. The main sources of infection for the neonates were intrauterine (72.5%, 71/98), lactogenic (13.2%, 13/98), umbilical (5.1%, 5/98) and unidentified sources (9.2%, 9/98). The main non-specific clinical signs observed in the newborns were weakness, depression, impaired or absent reflexes, hypothermia, hypoglycemia, dehydration, reduced muscle tonus and diarrhea. The newborns also manifested clinical signs of severe infection, such as hyperemia in the abdominal and anal regions, omphalitis, hematuria, abdomen and extremities with purplish-blue coloration necrosing injuries in the pads, bradycardia, dyspnea, epistaxis, hypotension and evolution to septic shock. Infections acquired during intrauterine life led to the onset of the clinical signs at the time of birth, with fast evolution during the first hours of life. On the other hand, infections acquired via milk or umbilical cord presented clinical signs later. The total mortality rate was 5.4% (38/703) and the mortality rate among the neonates with sepsis was 38.7% (38/98). The early mortality rate (0 to 2 days) accounted for 86.9% (33/38) and the late mortality rate (3 to 30 days) for 13.1% (5/38) of the deaths among the newborns with sepsis. The main bacterial agents observed were Staphylococcus spp., Streptococcus spp., Proteus spp. Mannheimia spp. and Escherichia coli. Neonatal sepsis evolves quickly and may lead to high mortality in a litter. The prognosis is usually favorable if the diagnosis is reached early and the antibiotic therapy instituted as soon as possible, even before the results of blood cultures and antibiograms. The therapeutic recommendations should meet the special physiological conditions of a neonate in terms of metabolism and excretion of medication. Therefore, it is of utmost importance that the veterinarian is knowledgeable regarding neonatology to provide effective intervention and improve the survival rates of these patients.

Keywords : Neonatal infection , bacteria, puppies, newborn
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