ABSTRACTS

ISCFR 2012

July 26-29, Whistler, Canada

7th International Symposium on Canine and Feline Reproduction

In a joint meeting with

EVSSAR 2012

15th Congress of the European Veterinary Society for Small Animal Reproduction

Editors: Gary England, Michelle Kutzler, Pierre Comizzoli, Wojciech Nizanski, Tom Rijsselaere and Patrick Concannon

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Lactate in bitches with pyometra the open and closed cervix

Volpatto, R; Rodello, L and Lopes, MD

School of Veterinary Medicine and Animal Science, Sao Paulo State University, Botucatu, SP, Brazil

rodrigo.volpatto@hotmail.com

OBJECTIVES AND METHODS: Veterinary Medicine lactate concentration as a prognostic marker is still limited to small animals, but has shown promise for use in the monitoring of any critically ill patients. The objective of this study was to evaluate the concentration of lactate in the blood of bitches with pyometra and determine the effect of opening or closing of the cervix on those securities. The research in question met the requirements imposed by the Ethics Committee in the use of animals in accordance with the ethical principles for animal experimentation of the School of Veterinary Medicine and Animal Science, Sao Paulo State University, Botucatu, SP, Brazil, protocol number 26/2009 – CEEA. We used 31 bitches with pyometra, 25 with pyometra the cervix open and 6 with closed pyometra. The animals of various breeds were aged between 3 and 17 years and weighed on average 8.5 kg. The diagnosis of pyometra was made by clinical history, physical examination and complementary blood count, urea, creatinine and ultrasound assessment. Blood was collected by venipuncture from the jugular vein (5 mL) bottles using fluoride as an anticoagulant. This blood sample was centrifuged within a maximum of 30 minutes after collection (LS-3 Centrifuge - Celm) for 10 minutes to obtain the plasma. This material was stored under freezing temperature. Lactate levels were determined by enzymatic colorimetric method using the LOP-PAD Kit® (Katal). The reference values considered were 0.3 to 2.5 mmol/L (1). The values of lactate in each material was stored under freezing temperature. Lactate levels were determined by enzymatic colorimetric method using within a maximum of 30 minutes after collection (LS-3 Centrifuge - Celm) for 10 minutes to obtain the plasma. This material was stored under freezing temperature. Lactate levels were determined by enzymatic colorimetric method using the LOP-PAD Kit® (Katal). The reference values considered were 0.3 to 2.5 mmol/L (1). The values of lactate in each group (open and closed pyometra) were expression an the mean ± S.E.M. Means were compared by t’s test (P<0.05). All analyses were performed using the software Graph Pad Prism 5.

RESULTS: Increased concentrations of lactate may be due to the difficulty in collecting blood from uncooperative patients requiring severe restraint. The increased muscle activity, the presence of tremors can also increase so moderate values of lactate. In addition, the blood left at room temperature for prolonged periods may increase lactate levels due to the high basal production of lactate in red blood cells (2). Blood collection in our experiment was performed on anesthetized animals previously prepared for the procedure ovariosalpingohysterectomy, the bottle in which the blood was collected contained fluoride, which stabilizes the anticoagulant blood lactate by inhibiting glycolysis. In addition, the blood sample was centrifuged and frozen within a maximum of 30 minutes. Blood collection followed all the recommendations that the results would represent the most reliable and safe tissue perfusion. The average concentration of blood lactate of 31 bitches suffering from pyometra was 3.55 ± 0.46 mmol/L, above the recognized value as normal for dogs (1). Healthy dogs had plasma lactate concentrations between 0.3 and 2.5 mmol / L (3). Lactate concentrations ranged from 0.8 to 2.9 mmol/L when the lactate was measured with a portable device, and from 0.4 to 2.6 mmol/L with the blood gas analyzer (2). Even with lactate values ranging from several studies and equipment, our results for the bitches with pyometra, are higher indicating hyperlactatemia. Regarding the degree of opening/closing neck was not significantly different between the animals with pyometra open or closed, with blood lactate concentration from 3.54 ± 0.52 mmol/L in open pyometra and 3.64 ± 1.03 mmol/L in closed pyometra. The two groups showed higher concentrations of lactate to the normal in the literature. Bitches with closed cervix pyometra have a more severe clinical signs, overall commitment and therefore may present sepsis and death (4, 5). Even with more severe clinical signs and more rapid progression in cases of closed pyometra, blood lactate levels did not differ between the open condition or closed. In both situations, tissue perfusion is altered and the prognosis is severe, requiring a fast and efficient interference of the professional.

CONCLUSION: The blood lactate concentration in bitches with pyometra is higher than in healthy dogs. No influence of the opening or closing of the cervix on the concentration of lactate. Lactate must be interpreted in combination with physical parameters and clinical evaluation of the patient. The survey was conducted in bitches and further investigations are needed to establish the validity and usefulness of monitoring of lactate in this species