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## Cortisol fetal fluids concentrations and newborn outcome in term pregnancy small-sized purebred dogs.

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### Abstract

In order to provide further information about canine perinatology, and because of the scarce knowledge about fetal fluids composition in dogs, the present study was aimed to assess the cortisol concentrations in fetal fluids collected from small-sized purebred newborn puppies born by elective cesarean section, at term of pregnancy (Meloni et al, 2014). Furthermore we assessed possible correlations of amniotic and allantoic cortisol concentrations and newborn outcome at 24 hours of age and with the newborn gender. Fetal fluids cortisol concentrations were also evaluated for correlation with maternal parity, litter-size, neonatal gender, birth weight and Apgar score (Veronesi et al, 2009). The study, performed on 50 born alive, normal weighed puppies, without gross physical malformation, showed that cortisol concentration was higher in allantoic than in amniotic fluid ( $p < 0.01$ ), even if a strong positive correlation between the two fluids cortisol concentration was found ( $p < 0.0001$ ;  $R = 0.83$ ). Interestingly, higher amniotic ( $p < 0.05$ ) cortisol concentrations were associated to puppies not surviving at 24 hours after birth. Therefore it could be suggested that this parameter may be useful for the recognition, at birth, of puppies needing special surveillance in the first day of age. In relation to the other evaluated parameters, no correlations with amniotic or allantoic cortisol concentrations were found. In conclusion, the present results showed that in small-sized purebred puppies, born at term by elective caesarean section, the evaluation of amniotic cortisol concentration seems useful for the detection of puppies that need special surveillance during the first 24 hours of age, and should be coupled to the newborn evaluation by Apgar score.

### References

- Meloni T, Comin A, Rota A, Peric T, Contri A, Veronesi MC, 2014. IGF-I and NEFA concentrations in fetal fluids of term pregnancy dogs. *Theriogenology*, 2014;81:1307-11.
- Veronesi MC, Panzani S, Faustini M, Rota A, 2009. An Apgar scoring system for routine assessment of newborn puppy viability and short-term survival prognosis. *Theriogenology*; 2009; 72, 401–407.