

CORRESPONDING AUTHOR

Barbara Bolis,
Barbara.bolis@unimi.it



Hair dehydroepiandrosterone (DHEA) concentrations in newborn dogs

B. Bolis ^{1*}, T. Peric ², M.C. Veronesi ¹, M. Faustini ³, A. Rota ^{1*},
M. Montillo ²

¹ Department of Health, Animal Science and Food Safety, Università degli Studi di Milano, Via Celoria 10, 20133 Milan, Italy;

² Department of food science, Università degli studi di Udine, Via Sondrio 2, 33100 Udine, Italy;

³ Department of veterinary sciences and Technologies for Food Safety, Università degli Studi di Milano, Via Celoria 10, 20133 Milan, Italy;

* ECAR Resident

ABSTRACT

During the last intrauterine fetal stage of development and the neonatal period, the hypothalamic-pituitary-adrenal axis (HPA) is a key system. Apart of cortisol, the adrenals produce dehydroepiandrosterone (DHEA), the major steroid produced by the fetus itself, so that it could be considered as a marker of offspring HPA activity. Non invasive, long time-frame retrospective hormonal levels analysis were performed in the hair of humans and animals, but not in newborn puppies, and DHEA never investigated in puppies. This study was aimed to assess DHEA concentrations in the hair of newborn puppies, and to evaluate the influence of newborn age, gender, and breed size on DHEA concentrations. The study enrolled 116 spontaneously dead puppies, grouped on the base of mother bodyweight to small or medium-large breeds, and on the base of age at death. Hair samples were collected by shaving, and stored at room temperature until RIA analysis. The overall hair DHEA concentrations were 46.8±14.8 pg/mg. DHEA levels were 48.6±15.66 pg/mg in females vs 45.1±13.73 pg/mg in males, without significant differences. DHEA levels were 45.5±13.61 pg/mg in small size puppies and 47.8±15.61 pg/mg in medium-large size puppies, with no significant differences. DHEA concentrations in premature puppies (52.5±15.12 pg/mg) were significant higher ($p<0.05$) than in puppies dead between 1 and 30 days after birth (44.5±17.78 pg/mg), but similar to fresh term born-dead puppies (46.2±16.5 pg/mg). This study demonstrated that DHEA is quantifiable in the hair of newborn dogs, and that DHEA levels are significantly influenced by the puppy's age.

REFERENCES

Beccaglia and Luvoni, *J Small Anim Pract* 2006;47:670-73; Peric et al., *Proc 2nd DairyCare Conference 2015;Cordoba,Spain:68.* 3) Mongillo et al., *Res Vet Sci* 2014;96:33-8.