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TITLE

HORMONAL AND METABOLIC CHANGES IN SOWS WITH POSTPARTUM DYS GALACTIA SYNDROME

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CONTENT

Background and Objectives

Postpartum dysgalactia syndrome (PDS) in sows may be due to disturbances in hormonal and metabolic processes or oxidative stress during the periparturient period. Further, PDS is difficult to diagnose. This study describes the changes of cortisol, chromogranin A (CgA), glucose, C-peptide, prolactin, and 8-epi prostaglandin F2 alpha (8-epi-PGF2?) in sows with PDS (PDS+) in order to elucidate the pathogenesis of PDS and the potential of these biomarkers for early identification of PDS.

Material & Methods

Saliva and blood were sampled daily in 38 PDS+ sows and 38 PDS healthy sows (PDS-) from 60 hours ante partum to 36 hours post partum. The study period was separated into seven time periods (A to G) and the concentrations of CgA, cortisol, glucose, C-peptide, prolactin, and 8-epi-PGF2? were compared over time (time period A served as baseline to B-G) and between the PDS+ and PDS- sows.

Results

Salivary CgA was significantly higher in PDS+ sows than in PDS- sows during the entire study period. Significant differences between PDS+ and PDS- sows were also found for cortisol, fasting blood glucose, C-peptide, and 8-epi-PGF2?, with levels of saliva cortisol and 8-epi-PGF2? being different already before parturition.

Discussion & Conclusion

The increased CgA concentration in PDS+ sows may indicate a homeostatic disturbance that is present before parturition. The increased cortisol concentration in PDS+ sows compared to PDS- sows could reflect occurrence of inflammation or stress. Lower C-peptide in PDS+ sows may be due to a lower food intake causing a low energy turnover. CgA, cortisol and serum 8-epi-PGF2? may potentially serve as early diagnostic indicators for PDS.