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Prevalence and early clinical signs of equine pituitary pars intermedia dysfunction in horses older than 10 years in France

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Introduction: Equine pituitary pars intermedia dysfunction (PPID) is a disorder of aged horses that results in an increased production of adrenocorticotrophic hormone (ACTH). Currently, the measure of plasmatic ACTH is increasingly used for diagnosis. Early detection of clinical signs remains important for implementing a treatment and to prevent complications.

Objectives: To determine prevalence and early clinical signs associated with PPID in a population of French horses older than 10 years.

Methods: Among horses presented in the clinic for health-related problems, 86 horses and ponies aged at least 10 years were randomly selected. A questionnaire was filled by the owner to obtain data on the horse's history. The day following admission, basal ACTH was measured. The horse was classified as having PPID when ACTH was higher than 47 pg/ml from August to October or higher than 29 pg/ml from November to July. Logistic regression was undertaken to compare groups.

Results: The prevalence of PPID was 9.3% (n=8). On the PPID's cases, one 22 years old pony was presented for hirsutism, but for others, complaints were not related to PPID and were colic, keratoma, chronic uveitis, chronic sinusitis, facial exostosis and osteochondrosis. Mean age of PPID's horses was 17 years vs. 14 for non PPID (p=0.024). PPID was not associated with the level of pain on admission or the distance to the clinic. Factors significantly associated with PPID were abnormal hair growth (OR=7.00; p=0.014), striated hoof (OR=4.5; p=0.05) and abnormal basal insulin (OR=11.75; p=0.007). Multivariate logistic regression found the best model to include age, striated horse's foot and abnormal hair growth.

Discussion: Pain and transport were not associated with increased values of ACTH. As we selected clinical cases, painful diseases were included. Stress and pain can increase pituitary hormones release, increasing PPID false positives. In our sample, 40.7% of horses had a pain score of 3/3 but pain was not selected in the final model.

Conclusion: Presence of growth rings on the hoof or history of abnormal hair growth should indicate a need for testing plasmatic ACTH in horses over 10 years.