

THE RELATIONSHIP BETWEEN URINARY TBARS AND CORTISOL IN A GROUP OF SEMI-FERAL PONIES.

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Reasons for study:

Stress has been reported to increase biomarkers of lipid peroxidation in other species.

The aim of this study was to investigate the relationship between urinary TBARS, a marker of lipid peroxidation, and stress as assessed by urinary cortisol.

Methods:

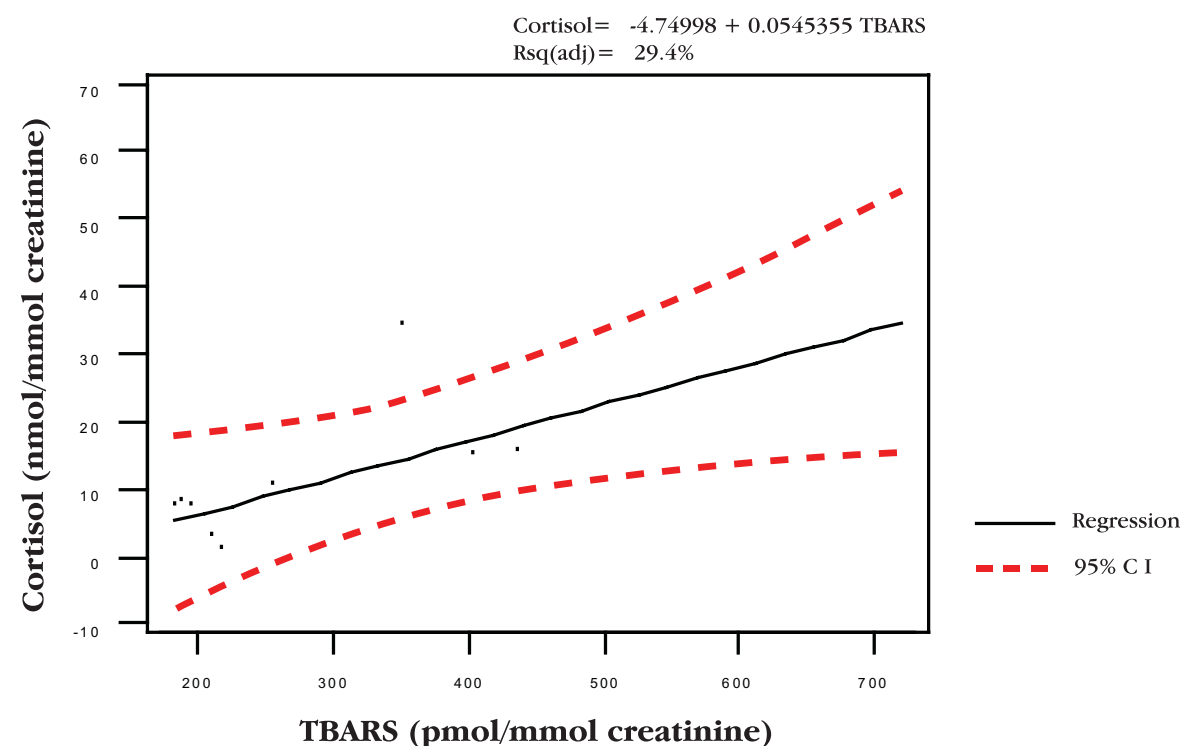
Semi-feral native pony types, under 13 hands high, were used in the study (n=13). The ponies were maintained on a basal diet of hay, were housed outside in a group and were not fed any supplementary feed. Mid flow free flow urine samples were collected over a period of 1 week during a 4 week period of daily handling.

Urinary TBARS were assessed using a fluorimetric method, urinary creatinine was determined using the Jaffe reaction and urinary cortisol was assayed using radioimmunoassay. The relationship between cortisol and TBARS was estimated using linear regression.

Results:

The relationship between TBARS:creatinine ratios and cortisol:creatinine ratios was significant ($p < 0.05$).

Relationship between urinary TBARS and urinary cortisol in native ponies with 95% confidence interval



Clinical significance:

The ponies used in the study were generally unaccustomed to handling and the results suggest that ponies with elevated cortisol also demonstrated elevated markers of lipid peroxidation. Typical physiological responses to chronic stressors include catecholamine release and an increase in metabolic rate. Both of these factors have been implicated in elevated free radical production. The results suggest that there is evidence of association between free radical production and stress which requires further investigation.

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