Prolonged Wireless Measurement Of Intragastric Ph In Foals

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The relationship between gastric acidity and gastric ulceration in foals is poorly understood. A human wireless intraoesophageal pH capsule was adapted for intragastric pH measurement in adult horses.[1] This study aimed to measure intragastric pH in foals using this capsule.

A prospective interventional study was performed using eight healthy foals aged 24 to 98 days. Capsules were attached to the glandular mucosa under gastroscopic guidance using a haemostasis clip. pH was continuously recorded. Gastroscopy was performed after seven days to assess capsule attachment or when detachment was suspected based on sustained pH ≥ 8. pH data were analysed using commercially available software. Correlations between age and pH as well as age and attachment duration were determined using Pearson's and Spearman's correlation coefficients respectively.

The capsules remained attached for seven days in 6/8 foals (75%), with detachment in 2/8 foals after five days. The mean of the mean pH was 3.2 ± 0.6, the mean median pH was 3.0 ± 0.7, and the mean percentage of time the pH was less than 4 (%tpH < 4) was 74.0 ± 16.2%. As age increased, median pH significantly decreased (r = -0.75, P = 0.033) and %tpH < 4 significantly increased (r = 0.72, P = 0.046). There was no significant correlation between age and attachment duration (r = -0.23, P = 0.58).

This technique provides a non-invasive wireless alternative for prolonged intragastric pH measurement in foals. The effect of age on intragastric pH provides additional insight into pathophysiology and warrants further exploration.

1. Hodgson E, Thirouin M, Narayanan P et al. A novel placement method of a calibration-free pH capsule for continuous wireless measurement of intragastric pH in horses. *J Vet Intern Med* 2025;39:e17273.