Changes in the equine gut microbiome associated with a hospital stay

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Background

• The microbiota, especially that of the gut, plays an important role in the overall health of the body.
• Studies done in humans have shown that alterations in the gut microbiome are associated with many common conditions.
• It is largely unknown how the health of horses is affected by shifts in the gut microbiome.

Objectives

• To survey the microorganisms present in the gastrointestinal tract of horses admitted into the University of Missouri Veterinary Medical Teaching Hospital and to observe changes that occur over the course of the hospital stay.

Methods

• DNA extraction was performed using MoBiO PowerFECAL Kits.
• Fecal samples were collected from every patient upon being admitted into the University of Missouri Veterinary Medical Teaching Hospital and at discharge. Depending on the case, samples were collected at various points throughout the course of the stay.
• DNA extraction was performed using MoBiO PowerFECAL Kits.

Results

• The composition of the gastrointestinal microbiome of patients exhibiting acute-GI signs and chronic-GI signs were significantly different from each other, as well as from both the healthy patients and those exhibiting non-Gastrointestinal clinical signs.
• There was no significant difference between the patients admitted for non-gastrointestinal signs and the healthy patients.
• Future research aims to draw conclusions about the stability of the gastrointestinal microbiome during the hospitalized period, what microorganisms drive the variation between groups, as well as compare hospitalized patients with normal horses out on pasture.

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