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SYMPOSIUM

Diabetes, Insulin Resistance, and Metabolic Syndrome in Horses

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Abstract

Analogous to the situation in human medicine, contemporary practices in horse management, which incorporate lengthy periods of physical inactivity coupled with provision of nutritional rations characterized by inappropriately high sugar and starch, have led to obesity being more commonly recognized by practitioners of equine veterinary practice. In many of these cases, obesity is associated with insulin resistance (IR) and glucose intolerance. An equine metabolic syndrome (MS) has been described that is similar to the human MS in that both IR and aspects of obesity represent cornerstones of its definition.

Unlike its human counterpart, identification of the equine metabolic syndrome (EMS) portends greater risk for development of laminitis, a chronic, crippling affliction of the equine hoof. When severe, laminitis sometimes necessitates euthanasia. Unlike the human condition, the risk of developing type 2 diabetes mellitus and many other chronic conditions, for which the risk is recognized as increased in the face of MS, is less likely in horses. The equine veterinary literature has been replete with reports of scientific investigations regarding the epidemiology, pathophysiology, and treatment of EMS.

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Abbreviations: (CGIT) combined intravenous glucose–insulin test, (DM) diabetes mellitus, (EMS) equine metabolic syndrome, (HbA1c) glycosylated hemoglobin, (IR) insulin resistance, (MS) metabolic syndrome, (NSC) nonstructural carbohydrate, (PPID) pituitary pars intermedia dysfunction

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