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MANAGEMENT OF THE LAMINITIC HORSE – AN OVERVIEW

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•Abstract: Laminitis in horses is a complex condition requiring a comprehensive understanding of its causes, symptoms and treatment strategies, that are not really in a large range. Diet plays a crucial role in laminitis prevention. High-sugar feeds can exacerbate insulin resistance, making dietary management essential for at-risk horses. Owners should focus on providing a balanced diet low in non-structural carbohydrates. Diagnosing laminitis involves clinical evaluation and severity scoring. The modified Obel method is a standardized approach that helps veterinarians assess the severity of the condition effectively. Radiographic assessments are also critical, allowing for the evaluation of structural changes in the hoof, such as rotation or sinking of the coffin bone. Treatment options for laminitis are multifaceted: medication, targeted low exercise, strict diet, orthopedic shoes, specific supplements. Continuous digital hypothermia has emerged as a promising method for managing inflammation and improving blood flow to the hoof. Additionally, acupuncture and laser have been explored as a complementary therapy, showing potential benefits in pain management. Preventive measures are equally important. Horse owners are encouraged to monitor their animals closely, particularly during seasonal changes when laminitis risk may increase. Regular veterinary check-ups can help identify early signs of endocrine disorders. By focusing on prevention and early intervention, horse owners can significantly improve outcomes for affected animals. Ongoing research continues to enhance our understanding, paving the way for better management practices.

Keywords: laminitis, insulin resistance, horse dietary management

• Introduction

Laminitis is a multifactorial, often debilitating condition of the equine hoof characterized by inflammation and structural failure of the lamellae, which connect the hoof wall to the distal phalanx. It can lead to severe pain, lameness, and long-term disability.

Recent advances in research have shifted the understanding of laminitis from a purely inflammatory disease to one involving complex metabolic and vascular dysregulation. The condition is broadly classified into endocrinopathic, sepsis-related, and supporting limb laminitis, with insulin dysregulation now recognized as a major underlying factor, particularly in horses with equine metabolic syndrome (EMS) and pituitary pars intermedia dysfunction (PPID).

Given its complexity and high recurrence rate, effective management requires early diagnosis, targeted treatment, and long-term preventive strategies.

• Material and method

This overview synthesizes findings from multiple scientific studies and clinical reports on laminitis in horses. The analysis includes:

Clinical assessment methods

Modified Obel scoring system for severity evaluation;

Observation of clinical signs (lameness, stance, digital pulse, hoof sensitivity).

Diagnostic tools

Radiographic imaging to assess rotation and displacement of the distal phalanx;

Endocrine evaluation (insulin dysregulation, PPID)

Evaluation of risk factors

Dietary influences (non-structural carbohydrates);

Endocrine disorders (PPID, EMS);

Sepsis-related conditions and mechanical overload.

Therapeutic and preventive strategies reviewed

Cryotherapy (continuous digital hypothermia);

Pharmacological treatments (NSAIDs, pergolide);

Biomechanical support (farriery techniques);

Nutritional management.

Adjunct therapies (e.g., acupuncture).

• Conclusions

Laminitis requiring a multidisciplinary management approach. Early recognition, accurate severity assessment, and prompt intervention are critical to preventing irreversible damage.

Modern management emphasizes: Control of endocrine disorders; Evidence-based acute therapies such as cryotherapy; Long-term dietary and biomechanical strategies.

With continued research and integrated care involving veterinarians, farriers, and informed owners, outcomes for laminitic horses can be significantly improved.

• Results and discussions

Etiology and Pathophysiology

Laminitis arises from multiple interacting mechanisms:

Endocrinopathic laminitis: driven primarily by hyperinsulinemia;

Sepsis-related laminitis: assoc with systemic inflammation and endotoxemia;

Supporting limb laminitis: due to excessive weight-bearing;

At the cellular level, basement membrane degradation and failure of the dermo-epidermal junction are key features, leading to structural instability of the hoof.

Diagnosis and Severity Assessment

The modified Obel method improves sensitivity and reproducibility in grading laminitis severity;

Radiographs are essential for detecting early structural changes, including rotation or sinking of the distal phalanx;

Early diagnosis is critical, as structural damage may precede severe clinical signs

Treatment Strategies - Acute Management

Digital hypothermia (5–10°C) reduces inflammation and tissue damage;

Pain management using NSAIDs (e.g., phenylbutazone) and multimodal analgesia;

Strict stall rest and deep bedding to reduce mechanical stress;

Management of Underlying Causes

Endocrine control;

PPID treated with dopamine agonists (e.g., pergolide);

Insulin dysregulation managed through diet;

Dietary strategies:

Low non-structural carbohydrate (NSC) diets;

Soaked hay and elimination of high-sugar feeds;

Weight management:

Reduction of obesity to improve insulin sensitivity;

Controlled exercise (only in non-acute cases);

Adjunct and Emerging Therapies:

Acupuncture and Laser - may provide pain relief, evidence is still limited;

Ongoing research highlights the role of metabolic and

vascular pathways in disease progression

Prevention and Long-Term Management

Regular monitoring of:

Body condition;

Insulin levels;

Hoof health;

Preventive measures:

Avoid sudden dietary changes;

Restrict pasture access during high-risk seasons (spring/autumn);

Routine veterinary and farriery care;

Corrective trimming and shoeing are essential for long-term hoof stability.

