Conventional Concepts in the Treatment of Laminitis

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Grossly defined, laminitis is inflammation of the sensitive laminae in the hoof of the horse, caused by stressful events, trauma, infection, or parturition. This definition sheds little light on the destructive process that occurs within the hoof or how to treat a horse suffer from this affliction.

Laminitis is commonly known as a secondary process and is a result of a variety of primary processes. Some of the primary causes that initiate laminitis are grain overload, colitis, colic, diarrhea, Cushing's disease, retained placenta, exhaustion, direct hoof trauma, excessive weight baring on a single limb change in diet or environment and stressful travel. Once the laminetic process has begun it can be classified into the developmental, acute, and chronic phases. Treatment plans are based largely upon the stage of the disease and the amount of damage to the laminae

The developmental phase typically begins with the onset of the primary process (e.g. hoof trauma or colic). Symptoms such as elevated digital pulse and warmth in the hooves are typically mild and generally present within 12-24 hours. Treatment for horses in the developmental stage of laminitis should be proactive, not reactive, and based largely on the probability of the disease occurring. Most treatment goals are aimed at eliminating the cause of the episode, preserving circulation, providing axial support and reducing the bodies biomechanical influence on it self. No one treatment regiment has proven to be effective and will they vary largely among practioners. Eliminating the primary process is generally the first step in the treatment process. Consistent quality Radiographs of the feet are essential at this point. Some practioners have also shown venograms to be very helpful in providing a prognosis and establishing a treatment plan at this stage. Modified ultimates, Soft Ride Boots, axial support and ice therapy have been very useful in this practice.

The acute stage begins with the onset of pain and lameness, typically with in 24-48 hours, and lasts until the pain and lameness subsides and the horse recovers or displacement (rotation, sinking or both) of PIII occurs. Horses in the acute phase generally exhibit common signs such as, elevated digital pulse, warm hooves and painful response at the toe to palpation and/or hoof testers. Loss of appetite, limited intake of fluids and the typical laminetic stance (transferring weight off of the front hooves) are also commonly observed signs. In this phase the inflammatory process is at its climax and blood supply to the digit may be severely compromised. This hypoperfusion within the digit may lead to ischemia, necrosis, and edema compromising the integrity of the laminae. Aggressive treatment during the acute phase generally provides a more favorable outcome and may preserve the integrity of the laminae. Use of nonsteriodial anti-inflammatory drugs (NSAID's) such as bute to control pain is common practice. As previously stated, eliminating the primary process is generally the first step in the treatment process. Consistent quality Radiographs of the feet and accurate soft tissue measurement are critical. Treatments will also vary largely among practioners and no system has been proven to be universally effective. Treatment should also target reducing the biomechanical forces that further compromise weakened laminae. Preserving the

circulation to the hoof, and reducing the bodies' biomechanical influence on it self are paramount goals in a treatment plan.

The chronic phase begins when clinical or radiographic signs of displacement are noted. This rotation and/or sinking of PIII occur as a result of failed laminar bond, which suspends the bone within the hoof capsule. This displacement compresses the corium at the coronary band as well as under the tip of PIII, resulting in further compromised perfusion, abnormal hoof function, and chronic pain. Treatment of chronic laminitis is primarily based on therapeutic trimming and shoeing, while continuing to control pain and the initial trigger. Treatment plans will be based largely upon the owner goals, damage to the feet, type of displacement and practioners experience. Generally goals of therapeutic shoeing, aided by radiographs, are to restore PIII's orientation to the ground establishing proper boney alignment and to restore normal function of the hoof. Dramatically reducing the biomechanical exertion of the deep digital flexor tendon (DDFT) is paramount to successful treatment as well. These efforts allow new laminae to generate as the hoof grows, eventually providing stability to PIII. It is important however to note that the amount of damage incurred during the early stages is directly related to how well a horse will recover. Therapeutic shoeing may be accompanied by surgical intervention; performing a deep digital tenotamy allows us to realign the horses' boney column and generate a new laminar attachment with minimal mechanical influence from the deep digital flexor tendon. Again treatment plans will vary largely among practioners; rocker shoes, rail shoes, wood clogs, glue on shoes and foot casts have been useful in this practice.

Treating laminitis at any stage can be a daunting task. Awareness by owners, veterinarians and farriers of horses that are high risk as well as early diagnoses and treatment according to the probability the disease occurring rather than waiting for laminitis to occur may certainly provide the most favorable outcome. It is also important to recruit a vet/farrier team that keeps realistic goals in mind such as, maintaining comfort of the horse, preserving and/or restoring adequate perfusion to the hoof and reducing the biomechanical influence of the DDFT.