

Equine Immune-Mediated Myofascial Syndrome and its Relation to *Wei Qi* Syndromes

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ABSTRACT

A pattern of acupuncture point sensitivity has been observed on diagnostic acupuncture point palpation examination (DAPPE) in cases of equine infectious diseases such as equine borreliosis (Lyme disease), equine protozoal myelitis, and equine herpes virus. Extreme reactivity of all association (Back *shu*) points, alarm (Front *mu*) points, acupoints in the cervical, shoulder, thoracolumbar and lumbosacral regions as well as pelvic limb points along the Bladder and Gall Bladder channels is a DAPPE pattern suggestive of infectious disease. Since infectious diseases trigger an immune response this DAPPE pattern may represent an equine immune-mediated myofascial syndrome (EIMS). This syndrome in humans has been called infectious myalgia, fibromyalgia, myofascitis, and myofascial pain syndrome. The onset of signs of EIMS may be sudden or insidious. Early signs include resistance to rider, saddle and refusal to perform normal exercises. Other client complaints include acute or rapidly progressive signs of aggression when touched in any form, resistance to be saddled, girthed up or groomed. Horses have also exhibited aggression to trainer, riders and other horses. A general sense of irritability to touch and even sounds has been observed. Immunoassays for infectious organisms are recommended when this DAPPE pattern is found and EIMS is suspected. EIMS is thought to be associated with invasion of *Wei Qi* by Wind in Traditional Chinese Veterinary Medicine. Treatment of EIMS includes appropriate antibiotic therapy for specific infectious diseases along with adjunctive support including acupuncture, manual therapies, and nutritional and herbal immune support.

Key words: Acupuncture, equine, Lyme Disease, Borreliosis, *Wei Qi*, myofascial, immune-mediated

Immune reactions may be associated with viral, bacterial and spirochaete infections.¹ These infectious diseases may cause acute muscle pain and soreness especially in the head and neck regions of humans. This syndrome has been called infectious myalgia, fibromyalgia, myofascitis, and myofascial pain syndrome and has been associated with influenza, herpes simplex and vesicular stomatitis.^{1,2} Humans and dogs with borreliosis and leptospirosis may have myofascial pain in the neck, shoulders, thighs and lumbar region.^{1,3} Histologic studies have found *Borrelia burgdorferi* in the skin, muscle, connective tissues, joints and lymph nodes in dogs and horses.³⁻⁵ Laboratory tests for borreliosis are often equivocal. Some individuals develop little or no antibody titers and some tests appear to cross react with ehrlichiosis.⁶ A similar myofascial pain syndrome suspected to be

associated with infectious diseases has been observed in horses and has been called equine immune mediated myofascial syndrome (EIMS).⁷

Infectious myalgia or fibromyalgia causes certain acupuncture point sensitivity patterns in humans and is often confused with other myofascial trigger point pain conditions.² Patterns of sensitivity on diagnostic acupuncture point palpation examination (DAPPE) in horses have been associated with infectious diseases such as equine borreliosis (Lyme disease), equine protozoal myelitis (EPM), equine herpes virus (EHV) and other viral and bacterial infections (Figure 1).⁷ The pattern of diagnostic points includes a general increased sensitivity (*Yang* excess) at the *Jing-jia-ji* points (the local cervical acupoints at each cervical intervertebral space), LI-16, GB-21, BL-11, SI-9, the entire bladder meridian from BL-13 to BL-30, as well as diagnostic acupoints for the stifle and hocks. I find that BL-18 is especially reactive, where often times the horse may actually drop its back completely upon palpation. In brief, there is

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Figure 1: Testing for acupuncture point sensitivity along *Jing jia ji* (acupoints between each cervical vertebrae) in a horse

significant increase in sensitivity on all diagnostic acupoints with marked reaction at BL-18.

The onset of signs of EIMS may be sudden or insidious. Early signs include resistance to rider, saddle and refusal to perform normal exercises. Client complaints may include acute or rapidly progressive signs of aggression when touched in any form, resistance to be saddled, girthed up or groomed. Horses have also exhibited aggression to trainer, riders and other horses. A general sense of irritability to touch and even sounds has been observed.

Upon examination of the horse, a generalized severe superficial hyperpathia, evident as increased reactivity upon superficial palpation of all diagnostic acupuncture points is found. The sensitivity of acupuncture points is quite marked even with light palpation. The reactions include striking out, cow-kicking, biting, ears folded back, generalized hyper-reactivity, avoidance behavior, irritability and sometimes extreme aggression upon palpation. Severe sensitivity to light palpation of acupuncture points in the cervical, shoulder, thoracolumbar and lumbosacral regions is evident. All association (Back *shu*) points, alarm (Front *mu*) points and pelvic limb points along the Bladder and Gall Bladder channels between the quadriceps, semimembranosus and semitendinosus muscles are also reactive. These findings are considered a positive DAPPE pattern for infectious diseases and further immunoassays to confirm these are

recommended. If only specific local points are reactive, then other etiologies should be explored.

Other conditions that have been observed that may show a similar pattern include multiple leg lameness with secondary cervical and thoracolumbar compensation, traumatic injuries such as being cast in the stall or a trailer accident, hairline fractures as well as extended periods of time with poor saddle fit, riding or training with its secondary compensation. Recently, two horses with hairline fractures were examined that exhibited a similar pattern and were interpreted as a general body reaction to severe pain.

According to TCVM, this pattern may be considered an Exterior Wind pattern and an invasion of *Wei Qi* (defensive *Qi*) by Wind. According to Maciocia “Wind is *Yang* in nature and tends to injure the Blood and the *Yin*. The clinical manifestations due to Wind mimic the action of wind itself in nature: it arises quickly and changes rapidly, it moves swiftly.... There is a saying that captures the clinical characteristics of Wind: sudden rigidity is due to the wind.”⁸ “Wind can cause paralysis (as in wind-stroke) and exterior Wind can cause facial paralysis or simply stiffness in the neck”.⁸ Facial paralysis or a stiff neck may be clinical signs of Lyme disease in humans. The main clinical manifestations of Wind are its rapid onset, rapidly changing symptoms that move from place to place in the body, tremors, and stiffness that can affect the skin.⁸ Exterior Wind penetrates via the skin and interferes with the circulation of *Wei Qi* in the space between skin and muscles (myofascial plane).⁸ The battle between the pathogenic Wind and *Wei Qi* in the skin and muscles may cause pyrexia. Wind attacks the most superficial channels first which are the greater *Yang* channels (Small Intestine and Bladder) and obstructs the circulation of *Wei Qi* within them. This causes stiffness and pain along these channels, as in the back of the neck in humans.⁸ Lyme disease is endemic in human, canine and equine populations in many regions of the northeastern United States.

A retrospective study was performed of 50 horses with a DAPPE suggestive of EIMS from Connecticut and New York State between 1990 and 1998. The horses were 5-20 years old and included Thoroughbreds, Thoroughbred crosses, Warm bloods, Quarter horses, Arabians and ponies. They

were used for dressage, hunting, jumping, eventing, endurance and pleasure riding. Group 1 was 40 horses with a positive DAPPE who were tested for Lyme disease (*Borrelia burgdorferi*) with western blot serology. Group 2 was 10 horses with a positive DAPPE with no immunoassays performed. Of the horses in Group 1, 26/40 (65 %) had a moderate to high Lyme titer, 9/40 (22.5%) had an equivocal Lyme titer and 5/40 (12.5%) had negative titers. In all, 87.5% had a positive correlation between a typical DAPPE pattern suggestive of EIMS and a positive western blot Lyme titer.⁷

All horses in Group 1 and 2 were treated with antibiotics and 24/50 (48%) showed 100% resolution of clinical signs, 15/50 (30%) showed 50% or more improvement in clinical signs and 11/50 (22%) had no response. Overall 78% of horses showed between 50%-100% improvement of clinical signs. The other 11 horses that didn't respond had either other conditions or different antibiotics used.⁷

Antibiotic therapy results for the 28 horses in Group 1 with a DAPPE pattern typical of EIMS and a positive western blot test for Lyme disease were examined and 14/28 (50%) showed an excellent response to doxycycline therapy and 100% resolution of the signs, 8/28 (28%) showed a 50% or better improvement in clinical signs and 6/28 (21%) showed little improvement.⁷ Overall 78% of the horses in this group showed 50-100% improvement of clinical signs with antibiotic therapy. The six horses that showed a poor response to antibiotic therapy had either a different etiology or were given a different antibiotic than doxycycline.

Now clients in my practice area, who have had horses with a history of Lyme disease, are aware that an extreme superficial skin hypersensitivity may be the very first sign that their horses have contracted Lyme disease. Some colleagues have observed similar patterns associated with EPM and Equine Herpes virus as well as other viral conditions.⁹ It has also been observed in some cases in my practice where the horse had been diagnosed with both EPM and Lyme disease.

Diagnostic approaches for EIMS include a thorough history, a diagnostic acupuncture point palpation examination, chiropractic evaluation,

comprehensive conventional lameness examination including flexion tests, diagnostic blocks, radiographs, ultrasound, MRI and other diagnostic imaging techniques as well as appropriate immunoassays for infectious diseases. Evaluation of saddle fit, rider, training programs and shoeing are critical as well.

Treatment of EIMS should include appropriate antibiotic therapy for spirochaete or bacterial infections and antiviral or antiprotozoal therapy. In addition, appropriate adjunctive immune support such as nutritional supplements and herbal formula's such as *Wei Qi Booster*^a have been used by the author. Acupuncture, hemoacupuncture, homotoxicology and physical manipulative therapies may be beneficial for the secondary compensatory myofascial patterns. Most commonly utilized acupoints included LI-16, BL-25 and BL-18. LI-16 was used as a local point that resolved much of the cervical muscle reactivity and myofascial pattern. BL-18 was chosen because it is the association (Shu) point for the liver, which is associated with soreness in muscles, tendons and ligaments. BL-25 was chosen as a local point that relieves much of the tension and myofascial pattern in the back in the longissimus dorsi muscle and many of the bladder meridian points along the back. Additional points were utilized based upon the horse's individual condition. The technique of aquapuncture, using the homotoxicologic agent Traumeel and Vitamin B-12, was most commonly utilized. Dry needle stimulation of additional points was utilized where appropriate. Acupuncture and manipulative therapies may temporarily improve clinical signs of myofascial pain for 2-3 days, but appropriate antimicrobial therapy is essential for long-term resolution of signs if caused by infectious agents. Acupuncture and manipulative therapies are excellent approaches for resolving the secondary compensatory myofascial syndromes once the primary etiology is resolved. Correcting the underlying problems such as primary lameness, shoeing, saddle fit, riding and training programs is also essential.

In conclusion, *Borrelia burgdorferi* (Lyme disease) and other infectious organisms may cause an immune-mediated myofascial syndrome in equine, canine and human. This may be exhibited as a significant reaction upon acupuncture point

palpation exam. This may mimic other syndromes and patterns. They should be considered part of a differential diagnosis. Appropriate diagnostic tests should be performed to elucidate an appropriate diagnosis. Immunoassays for Lyme disease may or may not confirm a diagnosis. An integrative approach is essential for both an accurate diagnosis and effective treatment of EIMS.

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ABSTRACT

Li CG, Li ML, Shu XH.

Toxicity Attenuation and Efficacy Potentiation Effects of *Si Jun Zi* decoction (Four Gentlemen) on Bladder Carcinoma Treated by Chemotherapy in Mice *Zhongguo Zhong Xi Yi Jie He Za Zhi.* 2005 Apr;25(4):354-7. Chinese.

OBJECTIVE: To investigate the toxicity attenuation and efficacy potentiation effects of *Si Jun Zi* decoction (SJZD) on bladder carcinoma treated by chemotherapy in mice. **METHODS:** T739 mice were randomly divided into 8 groups after subcutaneous inoculation of bladder carcinoma cells, the control group (A); two mitomycin C (MMC) group, treated with MMC of routine dosage (B) and low-dosage (C) respectively; three SJZD groups, treated with SJZD of high (D), medium (E) and low-dosage (F) respectively; and two combined treatment groups, treated with SJZD of high-dosage + MMC of routine dosage(G) and SJZD of high-dosage + MMC of low-dosage(H). The medication was begun at 24 hrs after inoculation. The tumor inhibitory rate, activity of peritoneal macrophages after 14 days of treatment and change of peripheral white blood cells after 7 days of treatment were determined and the survival time of mice was observed. **RESULTS:** The survival time of mice in Group D was significantly higher than that in Group A ($P < 0.05$), while those in Group E and F showed insignificant difference as compared with those in Group A ($P > 0.05$). The highest tumor inhibitory rate was shown in Group B, but the survival time in that group showed no significant difference as compared to those in Group A ($P > 0.05$). The longest survival time (32.7 +/- 1.3 days) was shown in Group H, which was obviously different to that in other groups ($P < 0.05$). And the leukocyte counts and macrophage activity in Group H were better than those in Group B, C and G ($P < 0.05$), except that the tumor inhibitory rate was significantly lower than that in Group B, C and G ($P < 0.05$). **CONCLUSION:** Combined chemotherapy of SJZD with low dosage MMC has definite effect in inhibiting tumor growth in mice with bladder carcinoma, displaying special effects of toxicity attenuation and efficacy potentiation.