

# Acupuncture and herbals in equine reproduction



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## Abstract

Combining traditional Chinese and western veterinary medicines can improve the outcome in refractory equine reproduction cases. Basic understanding of diagnostic and treatment principles can help a practitioner to prescribe acupuncture and herbals or to coordinate and communicate with a veterinarian trained in traditional Chinese veterinary medicine. Theories, diagnoses, potential acupuncture points, and herbals for common reproductive cases are discussed.

**Keywords:** Equine reproduction, acupuncture, traditional Chinese veterinary medicine

## Introduction

Acupuncture and herbals are 2 common components of traditional Chinese veterinary medicine (TCVM) and are becoming popular in equine reproduction. Potential physiological mechanisms of acupuncture applied to reproduction include endorphin-mediated changes of gonadotropin concentrations, and direct effects on gonadal paracrine and autocrine control of steroidogenesis.<sup>1</sup> Acupuncture is practiced with dry needles, electroacupuncture, moxibustion, or aqua-acupuncture with vitamin B-12 utilizing a selection of 361 points located along energetic channels (meridians) that connect these points. Cun (anatomical Chinese inch) is a unit of measurement relative to the scale of the body used to locate acupuncture points. For instance, on the back, the width of the last rib is equal to 1 cun.<sup>2</sup>

Conditions that theriogenologists most commonly seek assistance from TCVM practitioners in our practice are in 3 general categories: prebreeding or postbreeding intrauterine fluid accumulation, urine pooling/vesicovaginal reflux, and pregnancy maintenance. Although practitioners have described protocols based on western diagnoses for these conditions, integrating TCVM theory in western treatments can greatly increase success.<sup>3</sup> Expanded reviews on acupuncture use in equine reproduction are available.<sup>1,4</sup> This review focusses on integrating TCVM theory in western-based reproduction management.

## Traditional Chinese veterinary medicine theory and Bian Zheng

Treatment in TCVM is enhanced by incorporating its diagnosis or Bian Zheng with western medicine. For example, for several of the TCVM conditions described below, findings from transrectal

palpation and ultrasonography of reproductive tract may be similar; however, favorable response to treatment is only possible if points are chosen that best fit the TCVM diagnosis. Additionally, the Bian Zheng is imperative in choosing herbals.

Theory of TCVM incorporates Yin and Yang, 5 Element theory, and 8 Principles theory with the goal of achieving and maintaining energy balance. Yin and Yang balance each other. Examples of Yin include solid organs, female, moon, dark, and cold. Examples of Yang include hollow organs, male, sun, light, and heat. Each Yin organ is paired with a Yang organ or organ activity (Table). Each organ is associated with an energy meridian.

In addition to meridians associated with organs, there are 8 extraordinary channels. Commonly discussed 2 channels are governing (aka Du Mai) and conception (aka Ren Mai) vessels. A third channel is the penetrating vessel (Chong Mai), important because it helps to regulate cyclicity, menstruation in women, conception, and pregnancy. Conception and penetrating vessels originate from uterus. Conception vessel makes meridian connections with governing vessel and stomach meridians, whereas penetrating vessel makes a meridian connection with kidney meridian.

Five element theory describes the relationship among elements: wood, fire, earth, metal, and water. Elements and their corresponding meridians feed into each other and balance 1 another (Table). Individual constitutions and personalities fall within these elements with a perfectly balanced individual having aspects of all 5 elements. Individual's personality can help identifying the element that they are most associated with,

**Table.** Five elements of traditional Chinese veterinary medicine, Yin and Yang organs, and meridians

TCVM element	Yin organ/meridian (# of points)	Yang organ/meridian (# of points)
Wood	Liver (14)	Gallbladder (44)
Fire	Heart (9) and pericardium (9)	Small intestine (19) and triple heater (23)
Earth	Spleen (21)	Stomach (45)
Metal	Lung (11)	Large intestine (20)
Metal	Kidney (27)	Bladder (67)
	Conception vessel (24)	Governing vessel (28)

and thus the organ system and existing disharmony that might be most important to rebalance. Eight principles theory aids in identifying Bian Zheng include Yin and Yang, interior and exterior, hot and cold, and excess or deficiency.

Examination in TCVM varies with practitioner and often includes signalment, main complaint, evaluation of tongue for color, size and coating, evaluation of pulse (comparing pulses in the left and right carotid arteries in the horse), assessment of horse's overall condition, assessment of hair and skin quality, evaluation of temperature fluctuations over the body, and assessment of reactivity and recesses at various acupuncture points over the body.

Effective implementation of TCVM is by combining acupuncture with herbals. Particularly, herbals should be included in chronic cases of subfertility to achieve the TCVM balance. Herbal therapies improve underlying deficiencies and excesses commonly observed in subfertility whereas acupuncture helps with uterine clearance and tone, nerve damage, and musculoskeletal pain.

A trained TCVM practitioner should prescribe herbal formulas and evaluate animals' response. Acupuncture is relatively safe and if used inappropriately will likely have no response. Inappropriate use of herbal formulas can result in worsening patient's condition. Unlike western medications, herbals can take several months to change the animal's pattern and clinical signs. Subtle changes should be noticed within 2 - 3 weeks of starting herbals; however, to correct severe deficiencies, months of treatment may be necessary. During this period, patient should be monitored periodically to ensure that the pattern has not changed warranting a different herbal formulation or discontinuation. Herbals utilized for excess conditions are more potent, therefore duration between evaluations should be shorter (1 per week) whereas duration between evaluations of a chronic deficient condition can be longer (every 4 - 8 weeks).

### Common patterns observed in equine subfertility

There is a lack of scientific data on specific acupuncture protocols that fit all horses based on western conditions, requiring practitioners to rely on classic Chinese pattern differentiation to choose points. Core points for reproduction, the locations are detailed below, include Bai Hui, Yan-chi, and BL-23.<sup>5</sup>

### Kidney Qi, Yang and Jing deficiency

In TCVM, the kidney is the organ meridian directly associated with reproduction. Kidney is the yin organ associated with water element, whereas bladder is the yang element. Deficiencies in kidney Qi (energy), Yang (appears as Qi deficiency with coldness), and Jing (Qi that is born with or prenatal Qi) have similar treatment approaches in horses.

Examples of clinical manifestations of kidney Qi, Yang or Jing deficiency include anestrus, lack of follicular development, anovulatory follicles, prolonged diestrus, and failure to display estrus signs. This group of patterns can also be present in stallions and can present as oligospermia, decreased sperm quality, or decreased libido. Physically, the patient may display a decreased body condition, or lack of strength and/or poor performance.

Upon closer inspection, tongue appears pale, pulse is weak and deep, and the back and extremities may be cold.

Potential acupuncture points to incorporate in treatment include:<sup>2</sup>

CV-4/6 (to tonify Qi, dry needle) – on ventral midline, 3 cun and 1.5 cun caudal to umbilicus respectively

KID-3 (to tonify kidney Yin and Jing) – between medial malleolus and calcaneal tuberosity

KID-7 (to tonify Qi) – 2 cun directly proximal to KID-3 at cranial border of the tendon

BL-26 (gates of Yuan source Qi) – 3 cun lateral to lumbosacral space

GV-1 (to warm Yang) – in the depression between anus and tail

GV-3 (for kidney Yang/Gi deficiency) – in the depression between L4 and L5

GV-4 (for Yang deficiency) – in the depression between L2 and L3

Bai-hui (for Yang deficiency) – on dorsal midline at the lumbosacral space

Yan-chi (important point for infertility) – midway between tuber coxae and Shen-peng

Shen shu (for Yang or Qi deficiency) – 2 cun lateral to Bai-hui

Shen peng (for Yang or Qi deficiency) – 2 cun cranial to Shen-shu

Shen jiao (for Yang or Qi deficiency) – 2 cun caudal to Shen-shu

Epimedium is a useful herbal formula derived from the classical formula Sheng Jing San. Its principles of treatment include tonification of kidney Yang and nourishment of Yin and Jing. It should be used with caution in patients with inflammation or infection (excess heat).<sup>6</sup>

### Liver-kidney Yin deficiency

ITCVM theory describes the elements of feeding into 1 after the other, similar to seasons. The order of elements is wood to fire to earth to metal to water and back to wood. Kidney is associated with water. Liver is associated with wood. Hence, kidney Yin deficiency and liver Yin deficiency can travel together.

Clinical signs include anestrus, irregular estrous cycles, or repeated failure to achieve pregnancy. A small amount of thick, mucoid to mucopurulent vulvar discharge may be present. Haircoat and hooves may be dry. Eyelids may be swollen, and the mare may demonstrate blepharospasm or epiphora when exposed to light.

On examination, tongue is red and dry, and pulse is fast, weak, and thin. Potential acupuncture points to incorporate in treatment include:<sup>2</sup>

KID-3 (to tonify kidney Yin and Jing) – between medial malleolus and calcaneal tuberosity

KID-6 (to tonify kidney Yin) – between calcaneal tuber and talus

KID-7 (to tonify Qi) – 2 cun directly proximal to KID-3 at the cranial border of the tendon

SP-6 (master point of the caudal abdomen and urogenital tract, to tonify Yin and Qi) – 3 cun proximal to medial malleolus and just caudal to tibial border

BL-18 (back shu association point for liver meridian) – a pair of points at the 13th and 14th intercostal spaces, 3 cun lateral from midline

BL-23 (back shu association point for kidney meridian) – 3 cun lateral to L2-L3 vertebral space

BL-52 (paired with BL-23) – 3 cun lateral to BL-23

Yan-chi (important point for infertility) – midway between tuber coxae and Shen-peng

Shen shu (to tonify Kidney Qi) – 2 cun lateral to Bai-hui

Shen peng (to tonify Kidney Qi) -2 cun cranial to Shen-shu

Zuo Gui Wan can be a useful herbal formula for liver-kidney Yin deficiency. Its treatment principle is to nourish Yin and tonify kidney Qi and Jing. Several herbs in this formula also nourish liver Yin.<sup>6</sup>

Ophiopogon formula is an excellent kidney Yin tonic useful for horses with insulin dysregulation and/or pituitary pars intermedia dysfunction that have a Bian Zheng consistent with Yin Deficiency. In addition to nourishing Yin, it clears heat and promotes body fluids. Its classical antecedent is Mai Men Dong San.<sup>6</sup>

### Liver-kidney Yin deficiency

Mares with liver Qi and blood stagnation may have ovaries that contain several medium to large follicles without regularly growing to a dominant follicle or ovulation. Additional clinical signs include anestrus, irregular estrous cycles, and a thick vulvar or vaginal discharge or coating during estrus. Mare may exhibit abdominal discomfort. Qi-blood stagnation is also observed in stallions associated with musculoskeletal pain inhibiting breeding behavior or ejaculation.

This is an excess pattern. On examination, the tongue appears purple with a thin coating and a wiry pulse.

Acupuncture points can include:<sup>2</sup>

BL-18 (back shu association point for liver meridian) – a pair of points at the 13th and 14th intercostal spaces, 3 cun lateral from midline

BL-21 (back shu association point for stomach, to move Qi) – caudal to last rib, 3 cun lateral from midline

BL-23 (back shu association point for kidney meridian) – 3

cun lateral to L2-L3 vertebral space

BL-26 (gates of Yuan source Qi) – 3 cun lateral to lumbosacral space

BL-52 (paired with BL-23) – 3 cun lateral to BL-23

LIV-1 (for liver Qi stagnation) – craniomedial hind limb coronary band

LIV-3 (for liver Qi stagnation) – on craniomedial hind cannon bone, 1/3 of distance from tarsus to fetlock

GB-34 (to soothe liver Qi) – cranial and distal to the head of fibula in the interosseus space between tibia and fibula, between long and lateral digital extensor tendons

GB-44 (gallbladder Ting point) – craniolateral hind limb coronary band

LI-4 (to move Qi and clear heat) – between second and third metacarpal 1/3 of distance from carpus to fetlock

ST-40 (to move Qi) – 8 cun proximal and 0.5 cun lateral to lateral malleolus

A useful herbal formulation is Lotus formula, a formula based on the classical formula Huo Zue Yu Zi Tang. Its principles of treatment are to nourish blood, clear heat and resolve blood stasis. It is contraindicated during pregnancy and should be discontinued at breeding.<sup>6</sup>

### Phlegm damp and spleen-kidney Qi deficiency

Clinical signs include chronic endometritis or chronic vulvar discharge. Additional signs include loss of appetite, diarrhea, weakness or fatigue, and ventral or distal edema. The tongue is pale and wet and greasy or with a white coating. Pulse is deep and weak or choppy.

Acupuncture points could include:<sup>2</sup>

BL-20 (back shu association point for spleen meridian) – 3 cun lateral to midline at 17<sup>th</sup> intercostal space

BL-23 (back shu association point for kidney meridian) – 3 cun lateral to L2-L3 vertebral space

BL-26 (gates of Yuan source Qi) – 3 cun lateral to lumbosacral space

ST-36 (potent Qi tonic point) – 0.5 cun lateral to tibial crest

ST-40 (to move Qi and clear damp) – 8 cun proximal and 0.5 cun lateral to lateral malleolus

SP-6 (master point of the caudal abdomen and urogenital tract, to tonify Yin and Qi) – 3 cun proximal to medial malleolus and just caudal to tibial border

SP-9 (helps clear damp and transform phlegm) – at the level of patellar ligaments, 0.5 cun cranial to saphenous vein

Qi-hai-shu (for Qi deficiency) – at the 16<sup>th</sup> intercostal between longissimus dorsi and iliocostalis muscles

GV-4 (for Yang deficiency) – in a depression between L2 and L3

CV-1 (local point for the uterus) – halfway between anus and vulva

Bai-hui (for Yang deficiency) – on dorsal midline at lumbosacral space

Shen shu (to tonify Kidney Qi) – 2 cun lateral to Bai-hui

Include heat-clearing points for Uterine damp heat, such as:

LI-4 (to move Qi and clear heat) – between second and third metacarpal 1/3 distance from carpus to fetlock

GV-14 (to clear heat) – on dorsal midline in a depression in front of T1 spinous process

Wei-jian (to clear heat) – at the tail tip

Useful herbal formulations are Wan Dai Fang for spleen Qi deficiency with damp without pathogens, or Phellodendron and Plantago combination for uterine damp heat with pathogens. Wan Dai Fang's principle of treatment is to strengthen spleen Qi, eliminate damp and resolve vaginal discharge. Phellodendron and Plantago is based on the classical formula Bai Che San. Its treatment principle is to clear damp heat and resolve vaginal discharge. Phellodendron and Plantago are not contraindicated during pregnancy.<sup>6</sup>

### Pregnancy

Following points are commonly used for equine pregnancy maintenance that a practitioner can modify based on pattern assessment.<sup>2</sup> First trimester pregnancy loss is often associated with blood or Jing (essence, prenatal Qi) deficiency and kidney deficiency, whereas pregnancy loss beyond first trimester is often associated with liver-blood stasis or sinking/collapsing spleen Qi.<sup>7</sup>

Bai-hui (calms mind to reduce fetal hyperactivity)

BL-18&19 (harmonizes liver, association points of liver and gallbladder) – BL-19 is at the 15<sup>th</sup> intercostal space, 3 cun lateral to dorsal midline

BL-20&21 (tonifies spleen Qi, association points of spleen and stomach)

Qi-hai-shu (tonifies spleen Qi) – at the 16<sup>th</sup> intercostal space between longissimus dorsi and iliocostalis muscles

Da-feng-men, Tian-men, An-shen (calms mind, used for fetal restlessness) – Da-feng men is a triangle of points with apex at rostral forelock and legs of 0.5 cun; Tian-men is at the atlanto-occipital joint; An-shen is in a depression behind the ears

Several points listed in veterinary literature are contraindicated in pregnant animals, including points around abdomen and lumbosacral region:<sup>2</sup>

Du/CV-1 through 6, Yan-chi, BL-23 through 28, BL-52, LI-4, SP-6, BL-60, BL-40, ST-36, and BL-67.

A useful herbal for pregnancy maintenance is pregnancy smoother or Yun Bao modified from Bai Zhu San. It strengthens spleen Qi and nourishes liver blood to maintain pregnancy.<sup>6</sup> Bai Zhu San is originally mentioned in the Yuan Heng's classical collection on treatment of equine diseases (Yuan Heng Liao Ma Ji) written in the 1600s. This is a classical equine specific herbal formula and includes herbs that maintain pregnancy by strengthening spleen Qi, tonifying blood, and smoothing liver Qi.

## Conclusion

Acupuncture and herbals for equine reproduction cases are most effective for chronic subfertility when used in conjunction

with western management. Although protocols are available based on western diagnoses, treatment is substantially more successful when combined with acupuncture point choices and herbals based on the animal's Bian Zheng. Herbals in particular should only be prescribed by a veterinarian trained in tradition Chinese veterinary medicine.

## Conflict of interest

None to declare

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