

Equine C.O.P.D.

TCVM Practice and Supporting Scientific Findings All Leading to Maximal Lung Function:

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The equine Lung is an incredibly resilient organ subjected to a barrage of insults throughout life. Foal pneumonias, bedding on dusty wood shavings, being ridden in dusty indoor arenas, fed hay with molds and dust, chronic stress of aging to unheard of years. Yet despite these recurrent insults the equine Lung is amenable and thrives with a multi-tiered approach of TCVM, acupuncture and herbs. Like unpeeling the layers of an onion, a multi-tiered approach to therapy is critical and can lead to resolution. From Lung heat & phlegm accumulation to Kidney not grasping Lung qi and all the disharmonies in between the correct herbal formulas and collection of acupuncture point stimulation can prove beneficial to long term health and Lung harmony. This has held true in theory, in practice and in science.

Lung Heat & Phlegm Accumulation:

Lung heat and phlegm accumulation can arise from so many of the insults including pneumonia, foal pneumonia, aspiration pneumonia, etc. Whatever the cause, the symptoms remain the same, coughing, phlegm discharge, difficulty with inhalation and/or exhalation, exercise intolerance, heave lines on the lateral abdomen. Wheezing and broncho-constriction are heard on auscultation. In the event of bacterial infections, the extreme coldness of the appropriate antibiotic is of course indicated. But once the sterilization of the Lung parenchyma has been accomplished the Lung heat disharmony may innately resolve or if not resolved becomes a more chronic condition of Lung heat. The treatment principles include cooling Lung heat, resolving phlegm, harmonizing Lung qi and stopping cough. See the following tables for recommended acupuncture points and herbal formula.

Acupuncture Points for Lung Heat & Phlegm Accumulation:

Acupuncture point	TCVM action
Lung 1	Eliminates heat
Lung 7	Disperses pulmonary qi
Lung 11	Eliminates pulmonary heat
Bladder 13	Dispels heat & promotes Lung function in dispersing qi
Governing vessel 14	Dispels wind heat
Bladder 20	Benefits the T&T functions of Spleen
Stomach 40	Transforms phlegm & damp
Large Intestine 4	Master point for cranial chest, dispels heat
Large Intestine 11	Dispels & transforms damp heat

Herbal formula for Lung Heat & Phlegm Accumulation – bei mu san/Fritillary pulvis:

Ingredient	Chinese Theory	Scientific effect
bei mu/fritillary bulb	Moistens Lungs, transforms phlegm, & stops cough	Steroidal Alkaloids, antitussive, inhibitory effects on airway inflammation by suppression of Th2 cytokines (IL-4, IL-5 and IL-13), IgE, histamine production, reduction eosinophilic accumulation and increase of interferon-gamma ¹⁻³
zhi zi/gardenia fruit	Clears heat & drains fire especially in the Lungs	Anti-inflammatory, antioxidant, anxiolytic & immunosuppressive ⁴⁻⁹
bai bu/stemona seed	Moistens Lungs & stops cough	Antibacterial, antitussive, & spasmolytic effect on tracheal smooth muscle ¹⁰⁻¹⁴
xing ren/apricot seed	Regulates Lung qi & directs Lung qi	Anti-inflammatory and analgesic effects probably by suppression of cyclo-oxygenase-2 and inducible nitric oxide synthase expressions. ¹⁵
zi wan/aster root	Relieves cough & expels phlegm	Antioxidant & expectorant properties ¹⁶⁻¹⁷
jie geng/platycodon	Facilitates movement of Lung qi	Anti-inflammatory, immunomodulation, antioxidant, & increase airway mucin release ¹⁸⁻³¹
niu bang zi/articum fruit	Disperses wind-heat & benefits throat	Anti-inflammatory, anti-allergic effects, & antitussive ³²⁻⁴⁶
gan cao/licorice root	Harmonizes the actions of the other herbs	Anti-inflammatory, antibacterial, antioxidant, & inhibits histamine receptor signaling, trachea spasm relieving ³⁵⁻⁴⁶

Bei mu san is administered until the signs of Lung heat have diminished and the phlegm has resolved.

Lung Yin Deficiency:

Dryness is the worst enemy of the Lung. Chronicity of a Lung heat disharmony can affect the Lung yin. When yang has been in excess for long term, and in many horses this disharmony can be present for years without resolution, the yang will deplete the yin of the Lung and at times the body. The second deeper layer of the onion is Lung yin deficiency. So once the excess heat is resolved the appearance of Lung yin deficiency can

be identified. The clinical appearance is still of relative heat, but not as severe. Signs such as heat intolerance, dry cough, and difficulty with inhalation and/or exhalation but not as severe. Milder broncho-constriction, without wheezing or severe abnormal sounds, is auscultated. Tongue is red with minimal coating and the pulse is often thready and rapid.

Acupuncture point prescription for Lung yin deficiency would include principles such as tonify Lung yin, tonify Kidney yin, eliminate heat, transform phlegm, stop cough, & harmonize Lung. See the following tables for recommended acupuncture points and herbal formula.

Acupuncture points for Lung Yin Deficiency:

Acupuncture point	TCVM action
Lung 1	Eliminates heat
Lung 7	Disperses pulmonary qi
Lung 11	Eliminates pulmonary heat
Kidney 3	Tonifies Kidneys
Kidney 1	Tonifies yin & subdues empty heat
Bladder 13	Dispels heat & promotes Lung function in dispersing qi
Bladder 23	Association point for Kidney
Governing vessel 14	Dispels wind heat

Herbal formula for Lung Yin Deficiency—bai he gu jin san/Lilly bulb powder to preserve the metal:

Pin yin/common name	TCVM action	Scientific effect
bai he/ lily bulb	Moistens & nourishes dryness in the Lungs	Steroidal saponins ⁴⁷⁻⁴⁸
Shu di huang/prepared rehmannia	Liver & Kidney yin tonic	Increase glucocorticoid receptor binding, antioxidant, enhanced bone marrow production of hematopoietic cells, enhances blood flow ⁴⁹⁻⁵⁴
Sheng di huang/raw rehmannia	Enriches yin, cools blood	Reticuloendothelial system potentiating activity, enhanced bone marrow production of hematopoietic cells ^{49,55}
mai men dong/opiopogon	Yin tonic for the upper burner	Anti-inflammatory activity ⁵⁶
bai shao yao/white peony root	Nourish blood & supports yin	Antiallergic, antioxidant, & improves microcirculation ⁵⁷⁻⁵⁹

xuan shen/scrophularia	Clears heat from deficiency	Anti-inflammatory, Antioxidant ⁶⁰⁻⁶¹
zhi bei mu/fritillaria bulb	Moistens Lungs, transforms phlegm, & stops cough	Steroidal Alkaloids & antitussive qualities ¹⁻³
dang gui/angelica root	Nourish blood & supports yin	Anti-inflammatory, immunomodulation, & antioxidant ⁶²⁻⁶⁷
jie geng/platycodon root	Facilitates movement of Lung qi	Anti-inflammatory, immunomodulation, antioxidant, & increase airway mucin release ¹⁸⁻³¹
gan cao/licorice root	Harmonizes the actions of the other herbs	Anti-inflammatory, antibacterial, antioxidant, & inhibits histamine receptor signaling, trachea spasm relieving ³⁵⁻⁴⁶

Lung Qi Deficiency:

Chronicity of Lung disharmonies of any origin, heat or yin deficiency, cause depletion of Lung qi and all the accompanying signs. Signs such as sensitivity to molds and dusts leading to recurrent flare-ups of Lung heat signs if left untreated. As well as qi deficiency signs, weariness, weakness, lack of energy, & chronic weak cough to name a few. The tongue can be pale and the pulse may be weak. See the following tables for recommended acupuncture points and herbal formula.

Acupuncture points for Lung Qi Deficiency:

Acupuncture point	TCVM action
Bladder 13	Dispels heat & promotes Lung function in dispersing qi
Bladder 21	Association point for Stomach
Stomach 36	Benefits ST functions
Conception vessel 17	Sea of qi
Kidney 3	Tonifies Kidneys
Kidney 1	Tonifies yin & subdues empty heat
Bladder 23	Association point for Kidney, tonifies Kidney
Lung 7	Disperses pulmonary qi

Lung 9	Influential point for qi def, source point, & tonification point
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Herbal formula for Lung Qi Deficiency – bai du san /Antipathogenic pulvis:

Pin yin/common name	TCVM action	Scientific effect
du hou/pubescent angelica root	Dispel wind–cold from the exterior	Anti-inflammatory inhibits 5LO & Cox-1 in vitro ⁶⁹⁻⁷¹
qiang huo/notopterygium root	Dispel wind–cold from the exterior	Analgesic, inhibits lymphocyte migration ⁷²⁻⁷³
chuan xiong/ligusticum	Release to the exterior, moves blood & dispels wind	Anti-inflammatory & free radical scavenger ⁷⁴⁻⁷⁵
chai hu/bupleurum root	Release pathogenic influences	Anti-inflammatory ⁷⁶⁻⁷⁷
bo he/mentha	Release pathogenic influences	Antioxidant ⁷⁵
qian hu/peucedanum root	Transforms phlegm and strengthen Spleen	Antagonist action on histamine ⁷⁸
jie geng/platycodon	Facilitates movement of Lung qi	Anti-inflammatory, immunomodulation, antioxidant, & increase airway mucin release ¹⁸⁻³¹
zhi qiao/bitter orange	Regulates flow of qi to the chest	Adrenergic agonists ⁷⁹
fu ling/poria	Transforms phlegm and strengthen Spleen	Stimulates macrophages to express iNOS gene through the activation of NF-kappaB/Rel ⁸⁰
sheng jiang/fresh ginger	Release to the exterior	Analgesic, anti-inflammatory and hypoglycemic effects ⁸¹
dang shen/codonopsis	Strengthens qi	Immumodulatory effect ^{46, 82-83}
gan cao/licorice root	Harmonizes the actions of the other herbs	Anti-inflammatory, antibacterial, antioxidant, & inhibits histamine receptor signaling, trachea spasm relieving ³⁵⁻⁴⁶

Kidney Not Grasping Lung Qi:

Normal breathing involves the coordinated functions of Lungs and Kidneys. The Lungs take in oxygen via respiration and is said to have a descending function. These descending functions of the Lungs are assisted by the Kidney, which is said to grasp Lung qi and pull it backward i.e. spreading oxygen through out the body. Any disharmony of Lung or Kidney will disrupt these normal functions.

Chronic Lung disharmonies are a long-term stress, which with time depletes Kidney qi. This depletion 5

of Kidney qi can hinder the grasping of Lung qi and therefore the descending function of Lung. On the other hand, the Kidney is considered the flame of life. As time progresses Kidney qi depletion occurs. In older Kidney qi deficient horses that normal descending process has difficulty and as such reflects signs of COPD. Chronic cough, heave line on lateral abdomen, more difficulty in one phase of respiration either inhalation or exhalation, lethargy, unthrifty, slow moving, hindlimb edema, poor hair coat are all signs seen clinically.

Treatment is focused around tonifying qi especially Kidney qi, maximizing the Lung descending functions, clearing heat, transforming phlegm, & stopping cough. See the following tables for recommended acupuncture points and herbal formula.

Acupuncture points for Kidney Not Grasping Lung Qi:

Acupuncture point	TCVM action
Kidney 1	Tonifies yin & subdues empty heat
Kidney 3	Tonifies Kidneys
Bladder 23	Association point for Kidney, tonifies Kidney
Bladder 13	Dispels heat & promotes Lung function in dispersing qi
Lung 1	Eliminates heat
Lung 7	Disperses pulmonary qi
Lung 11	Eliminates pulmonary heat
Lung 9	Influential point for qi def, source point., & tonification point
Conception vessel 17	Sea of Qi

Herbal formula for Kidney Not Grasping Lung Qi – ren shen ge jie san/Ginseng and Gecko powder:

Pin yin/common name	TCVM action	Scientific effect
ge jie/gecko	Tonify the Kidneys ability to grasp Lung qi	none
ren shen/ginseng	Tonify Kidney, Lung & Spleen qi	Immunologic activities ⁸⁴⁻⁸⁵
fu ling/poria	Benefits Spleen by draining damp	Stimulates macrophages to express iNOS gene through the activation of NF-kappaB/Rel ⁸⁰

sang bai pi/bark of mulberry root	Regulates Lung qi & directs Lung qi downward	Immunomodulating, cathartic, analgesic, diuretic, antitussive, antiedema, sedative, anticonvulsant, and hypotensive actions in mice, rats, guinea pigs and dogs 86-87
xing ren/apricot seed	Regulates Lung qi & directs Lung qi downward	Antioxidant, anti-inflammatory and analgesic effects probably by suppression of cyclooxygenase-2 and inducible nitric oxide synthase expressions ¹⁵
zhi bei mu/fritillaria bulb	Clears heat, transforms phlegm & moistens Lungs	Steroidal Alkaloids & antitussive qualities ¹⁻³
zhi mu/anemarrhenia	Clears heat & nourishes Kidneys	Inhibitory effects on airway inflammation by suppression of Th2 cytokines (IL-4, IL-5 and IL-13), IgE, histamine production, reduction eosinophilic accumulation and increase of interferon-gamma production ⁸⁸
zhi gan cao/honey fried licorice	Harmonizing other herbs & tonifies source qi	Anti-inflammatory, antibacterial, antioxidant, & inhibits histamine receptor signaling, trachea spasm relieving ³⁵⁻⁴⁶

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