Pulmonary Sarcoidosis and Traditional Chinese Medicine
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Citation

Abstract
This article covers introductory concepts of pulmonary sarcoidosis from both a Western medical perspective and a Traditional Chinese Medical (TCM) perspective. An overview is given on the Western pathology of pulmonary sarcoidosis. Energetic functions of the Lungs in TCM are described, followed by the energetic etiology. Possible treatment strategies are enumerated for the main energetic types of pulmonary sarcoidosis. Also included are tables and figures to provide a visual context.

INTRODUCTION
Pulmonary sarcoidosis is a potentially life threatening disease. Although it has been estimated that 50% of people diagnosed with the disease will recover with minimal problems, there is another 50% where there is a decrease in the quality of life, including this becoming a terminal condition. Pulmonary sarcoidosis demands a truly integrative approach of care to minimize the danger this disease poses. What follows is an introduction to the Western pathology of pulmonary sarcoidosis, an examination of the Chinese energetic theory behind the disease and potential courses of treatment.

WESTERN PATHOLOGY OF PULMONARY SARCOIDOSIS
Pulmonary sarcoidosis is potentially life threatening. It is a non-contagious disease that can occur in any organ system in the body. The American Lung Association, however, estimates that 90% of the incidences of sarcoidosis is found to involve the lungs. Other areas of the body, shown in Table 1, can be affected in conjunction with or independent of the lungs.

<table>
<thead>
<tr>
<th>Organ</th>
<th>%</th>
<th>Organ</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>90</td>
<td>Kidney</td>
<td>Rare</td>
</tr>
<tr>
<td>Pleura</td>
<td>1-5</td>
<td>Calcium</td>
<td>1-2</td>
</tr>
<tr>
<td>Lymph</td>
<td>75-90</td>
<td>Nervous System</td>
<td>5</td>
</tr>
<tr>
<td>Skin</td>
<td>25</td>
<td>Bone</td>
<td>5</td>
</tr>
<tr>
<td>Eye</td>
<td>25</td>
<td>Joints</td>
<td>25-50</td>
</tr>
<tr>
<td>Nasal</td>
<td>20</td>
<td>Heart</td>
<td>5</td>
</tr>
<tr>
<td>Larynx</td>
<td>5</td>
<td>Endocrine Glands</td>
<td>Rare</td>
</tr>
<tr>
<td>Bone Marrow</td>
<td>15-40</td>
<td>Parotid Glands</td>
<td>10</td>
</tr>
<tr>
<td>Spleen</td>
<td>50-60</td>
<td>Gastrointestinal</td>
<td>Rare</td>
</tr>
<tr>
<td>Liver</td>
<td>60-90</td>
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</table>

The symptoms of pulmonary sarcoidosis are often quite general making a Western medical diagnosis difficult to make without X-rays, blood tests and biopsies. The most common symptoms include: dry cough, shortness of breath, tight chest, fatigue, weakness and even weight loss. Other, less common symptoms include: a scaly rash, red bumps on the legs, night sweats, fever, sore eyes, and pain and swelling in the legs.

Pulmonary sarcoidosis commonly begins as an idiopathic inflammatory response in the lungs. This inflammation typically progresses to alveolitis, then to granuloma formation and lastly to fibrosis. The initial inflammation may be due to an immunological problem. Some studies hypothesize that the cause is due to environmental factors, while others point to genetic predispositions in certain segments of the world's population. The bottom line is that it is not known what causes the initial inflammation that leads to pulmonary sarcoidosis.
The inflammation of lung tissue leads to the formation of granulomas. This occurs through a complex immune response. Lymphocytes and mononuclear phagocytes are attracted to the inflamed areas. These mononuclear phagocytes leave the blood to go to the lung tissue where they mature into macrophages and attempt to break down the cause of the inflammation. It is these cells shown in Figure 1 and Figure 2 that mark the non-caseating granulomas, the signature of sarcoidosis.

**Figure 2**
Figure 1: Granuloma in the Lung (black arrows)

These granulomas are distinctly different from caseating granulomas seen in other disease processes, especially tuberculosis, in which lung tissue is permanently destroyed. Pulmonary sarcoidosis does not involve the destruction of lung tissue. It does, however, render it nonfunctional.

Ultimately, damage to lung tissue and other organs is due to the mass affect of granulomas. Granulomas can resolve spontaneously. Resolution can be complete, leave an insignificant fibrous scar, or when there is chronic sarcoidosis activity, can cause more extensive tissue damage. This occurs when fibroblasts proliferate and produce collagen. Granulomas become enclosed and later replaced by collagenous fibrous tissue, shown in Figure 3 and Figure 4.
Figure 4: Early Collagen Formation. Extracellular collagen (C) is being produced by fibroblasts (arrows) which are difficult to see at this magnification.

Figure 5: More Advanced Collagenous Fibrosis. Higher magnification showing elongated fibroblasts (FB) with more extensive collagenous fibrous tissue (C).

Effectively, the normal lung tissue becomes peppered with fibrous tissue, loses its elasticity, resulting in loss of lung function. While a large percentage of patients recover with minimal to mild loss of lung function, many have more severe damage, requiring the use of oxygen and even a respirator. If sarcoidosis is widespread throughout the lungs and other organs, it can prove fatal.

Allopathic medicine classifies sarcoidosis according to types based on X-Ray analysis. There are types 1-4, with Type 1 (Figure 5) having little lymphadenopathy and normal lung parenchyma. Type 4 (Figure 6) is quite severe with permanent lung fibrosis. It is important to note that these types do not build on one another. Type 1 does not necessarily lead to Type 2, and Type 2 to 3. They are instead used to classify the extent of organ involvement, as illustrated in the X-Rays of Figures 5 and 6.
PULMONARY SARCOIDOSIS

While Western medical diagnosis is difficult to make without biochemical, radiological and pulmonary function testing, or even taking a biopsy, Chinese medical diagnosis is more readily made. The core of Chinese medicine is based upon diagnosing and treating what is seen and not what is measured on an X-ray, MRI, under a microscope or through chemical analyses. However, allopathic methods of understanding diseases and their processes should be taken into account. The above examination of the Western disease process of pulmonary sarcoidosis is important. It does not alter the understanding of the Chinese energetic model, but rather adds depth to that understanding.

All of Traditional Chinese Medicine (TCM) is based upon Qi or the vital energy of the human body. When the Qi does not flow through the body properly, energetic imbalances arise which can manifest as illness. In TCM and Western medicine, the lungs are responsible for respiration and the mucous membranes of the respiratory tract. In Chinese medicine, the Lungs are additionally characterized as doing the following:

- Governing Qi, including Wei Qi;
- Controlling dispersing and descending;
- Regulating water passages;
- Controlling the body hair and the skin;
- Opening into the nose; and
- Overseeing the emotions of grief and melancholy.

The first two parts - governing Qi and controlling the acts of dispersing and descending - are closely linked. The Lungs are viewed as the highest internal organ of the body. The Lungs, therefore, act like an umbrella over the rest of the internal organs. The Lungs collect Qi during inhalation and have the function of sending that Qi downwards to the other organs. In addition, the Lungs are a key component in the immune response of the body. The Wei Qi, or “defensive energy”, is controlled by the Lungs. The Lungs are then responsible for dispersing the immune or defensive energy throughout the whole body.

In the basic Western medical symptomology of sarcoidosis, two other common manifestations are skin problems and swelling to the legs and ankles. These are fundamental
associations to the Lung energies in Chinese medicine. The Lungs regulate the water passages of the body - a strong parallel to the lymphatic system, which is also involved in sarcoidosis. Also the Lungs manifest on the skin. It, therefore, follows in Chinese medicine that when you have an inflammatory response in the respiratory system, you may also see inflammatory responses on the skin. In Western medicine these are just symptoms. In Chinese medicine these are all indications that the Lung Qi is out of balance.

ENERGETIC ETIOLOGY OF PULMONARY SARCOIDOSIS

Two concepts require further elaboration to fully understand the scope of pulmonary sarcoidosis and how the entire body is affected. A closer look at the energetic components of the immune function, and the nature of the granulomas is needed. When considering the energetic origins of the immune function and granuloma formation, the energetic dynamic of pulmonary sarcoidosis is clearer.

Wei Qi. As mentioned above, the main function of Wei Qi is to protect the body from external pernicious influences which are classified as Heat, Cold, Damp, Dry, Wind and Summer Heat. Other sources include two additional types of pernicious influences as Toxins and Purulent Qi. Because Wei Qi circulates beneath the skin, it falls under the responsibilities of the Lungs. The Lungs disperse Wei Qi over the entire body and regulate the opening and closing of the pores. Any of these external invasions may disrupt the circulation of Wei Qi through the outer portion of the body and thus inhibits the Lungs dispersing function. When this occurs, the Lung Qi has a tendency to slow or Stagnate. Conversely, when the Lungs Qi is simply weak or Deficient, the Wei Qi is not properly regulated and circulated which leaves the body more susceptible to external pathogenic influences.

Though the Lungs play a prominent role in the regulation of Wei Qi and the subsequent immune function, three other systems also contribute to the Wei Qi. First, Wei Qi is also derived from the functions in the Middle Jiao, or the digestive system. This is because the Spleen and Stomach have a key role in the production of Wei Qi. The Spleen and Stomach take the Qi from food that is ingested (Gu Qi), transform it and send it upward to the Lungs to disperse as Wei Qi. Second, Wei Qi has its origins in the Kidneys. Specifically the Kidney Yang, which is formed from Essence and Original Qi, assists in forming Wei Qi. Third, Extraordinary Vessels also play a role in its circulation. The Extraordinary Vessels are the meridians that guide fetal development. Though still important, once a person is born, these particular vessels serve a less prominent role. While there are eight Extraordinary Vessels, only three contribute to the Wei Qi and protecting against external pathogenic influences. These are the Ren, Du, and Chong vessels, which run up the front of the body, the back of the body and through the center of the body, respectively. This also adds to the importance of the Kidneys because all of the extraordinary vessels derive their energy from the Kidneys.

The Lung energies as well as the Spleen, Stomach and the foods we eat, the Kidneys and the Extraordinary Vessels all contribute to optimize Wei Qi. Therefore, if any of these systems are compromised a window of opportunity is opened for pulmonary sarcoidosis to develop.

LUNG DEFICIENCY

This situation is further compounded when the Lungs, too, are energetically out of balance causing a stagnation condition. The list of potential causes of pulmonary sarcoidosis from a Western medical perspective is numerous. The causes include a number of infectious diseases but also can arise from neoplasms, foreign substances, immunological abnormalities and a number of idiopathic reasons. From a TCM perspective, pulmonary sarcoidosis can be viewed, primarily, as being caused by one of the eight external pathogenic factors mentioned above. Wind is frequently the carrier of the others and therefore is often a component of the energetic imbalance. If Wind Cold reaches the Lungs, the Cold will cause the Qi to Stagnate. In addition, if Wind Dry enters the Lungs, the fluids of the Lung will be impaired, become more viscous and Stagnate. Wind Damp is also factor that can impair the Lung in combination as Wind Damp Cold or Wind Damp Heat potentially accelerating Stagnation. Because of this Stagnant condition, there is energetic friction occurring. The Lungs want to descend and disburse the Qi but cannot. Within a short interval, the Wind Cold and Wind Dry will transform into Wind Heat. If Wind Heat or Summer Heat enter the Lungs, both will scorch the Lungs and create a Stagnant condition.

Having compromised the Wei Qi, this low level Heat arising from any of the external pathogenic factors ultimately results in a weakening of the Lung Qi. This energetic situation parallels the inflammatory response in the lungs. The energetic condition could stall at this point only leaving the Lung Qi weakened. If this Heat condition persists, however,
over time it can progress further to Lung Yin Deficiency. The Yin energies are responsible for cooling the body. Therefore, a Deficient Yin condition is one whereby the body lacks sufficient Yin to cool at a homeostatic level, thus allowing an internal Heat condition to arise. If the infective or irritant agent creates a Lung Yin Deficient situation, this Deficient Heat can further damage the fluids. When fluids dry out, this could further lead to the formation of stagnant Phlegm.

PHLEGM

Another important dimension to consider in pulmonary sarcoidosis is the formation of granulomas. In Chinese medicine, granulomas can be viewed as a type of Phlegm. Phlegm can be considered in different ways. Phlegm can be insubstantial as in “Phlegm Misting the Mind” in dementia, or it can pertain to more physical conditions such as thin and watery in sinusitis or very solid in scar tissue. In sarcoidosis, the granulomas also represent a form of Phlegm.

In TCM, the Spleen is the main organ system that produces Phlegm.17 The Spleen oversees the digestive functions of the body. When the digestion function is not in balance, the ability of the Spleen to transform the food taken in is not optimized and a Damp and Phlegm condition can arise. As previously mentioned, in normal healthy conditions, the Spleen then transports Qi to the Lungs. When out of balance, the Spleen instead can transport that Dampness and Phlegm to the Lungs. Although the Spleen is the main organ that produces Phlegm, the Liver and Kidneys also play a role. The Liver is responsible for the smooth flow of Qi in the body. When the Qi is not circulating properly, the Liver can Stagnate resulting in Liver Qi Stagnation. This can affect the entire body, including the Lungs. Any Stagnation condition can give rise to Phlegm. In addition, if the Liver is out of balance, the Liver can produce Heat – excess Heat or Yin Deficient Heat - and counteract on the Lungs. In effect, this Heat from the Liver can turn and be transferred to the Lungs. The additional Heat can dry out Dampness and produce and accumulation of Phlegm.

The Kidneys also play a role in the production of Phlegm. One of the Kidneys' energetic functions is to transform and excrete fluids. If the Kidneys fail to do this, then Dampness can accumulate. Again, if that Dampness stays, it can Stagnate into Phlegm. The Kidneys have a direct connection to the Lungs. The Lungs are supposed to descend the Qi to the Kidneys upon inhalation. To reciprocate, the Kidney Yang energy contributes to the proper balance of Wei Qi through the Lungs. If out of balance, this connection between the Kidneys and Lungs is disrupted resulting in weakened Wei Qi and Lung Qi as well as a Phlegm condition. As discussed above, Lung Qi Deficiency can develop into Lung Yin Deficiency. Because of this connection with the Kidneys, a Lung and Kidney Yin Deficiency could evolve, compounding the Deficient Heat and exacerbating the Phlegm.

While the Spleen is largely responsible for the production of Phlegm, the Lungs are known as the container of Phlegm in Chinese medicine. This is why the greatest incidence of granuloma formation occurs in the lungs: the Lungs are energetically responsible for the storage of Phlegm. It does not matter where the imbalance is that creates Phlegm, i.e. Spleen, Kidney, or Kidneys, it all can be stored in the Lungs. When the Lungs contain Phlegm, as in granuloma formation, they cannot function in a normal manner.

DIFFERENTIAL DIAGNOSIS

Unfortunately, there are seldom direct one-to-one links from Western to Eastern medicine. This holds true, too, when considering pulmonary sarcoidosis. The following is a differentiation of the various conditions affecting the Lungs.

1. Lung Qi DeficiencyClinical Manifestations: Shortness of breath, weak lung sounds, slight rattling sound in the throat, sweating, chilliness, pale face, weak voice, expectoration of scanty thin sputum. Tongue: Pale, may have a thin white coat. Pulse: Thin and weak, especially on the right front position. Treatment Principle: Tonify the Lungs, Strengthen Qi. Points: Taiyuan LU-9, Lieque LU-7, Zusanli ST-36, Qihai REN-6, Shenque REN-8, Shanchong REN-17, Feishu BL-13, Gaohuangshu BL-43. Moxa is applicable.

2. Lung Yin DeficiencyClinical Manifestations: Shortness of breath, chronic breathlessness, sweating at night, 5-center heat, dry throat, cough with scanty sputum, malar flush, red skin lesions. Tongue: Red and dry body. Little to no coat or geographic coat. Alternately, coat may have transverse cracks in the Lung area. Pulse: Floating and empty or fine, rapid and weak in the right front position. Treatment: Nourish Lung Yin, clear empty heat. Points: Taiyuan LU-9, Lieque LU-7, Zusanli ST-36, Qihai REN-6, Shenque REN-8, Shanchong REN-17, Feishu BL-13, Gaohuangshu BL-43.

4. Retention of Phlegm in the Lungs An important factor to consider in the long-term treatment of sarcoidosis is the production of fibrous tissue in the lungs. In Chinese medicine, fibrous tissue and scarring are viewed as a retention of Phlegm in the Lungs. This pattern is usually discussed in terms of conditions of chronic bronchitis or the acute phase of asthma in which there is significant phlegm production. In the case of sarcoidosis, parallels can be drawing to other fibrocystic disease where the modern theories of TCM point to a stagnant phlegm condition. Tongue: Distinct coating, white or yellow, extending into the Lung area. Pulse: Rolling and full, especially in the right front position. Treatment principle: Nourish Lung Qi, Circulate Lung Qi, Transform Phlegm. Points: Zhongfu LU-1, Yunmen LU-2, Taiyuan LU-9, Zusanli ST-36, Fenglong ST-40, Taichong LIV-3, Neiguan P-6, Yuzhong KID-26, Shanzhong REN-17, Tiantu REN-22, Feishu BL-13.

OTHER CONSIDERATIONS IN THE TREATMENT OF PULMONARY SARCOIDOSIS

MEDICATIONS

Nearly all patients with pulmonary sarcoidosis are on some form of medication. Table 2 shows the more commonly used pharmaceuticals used to treat pulmonary sarcoidosis. Most medications are used with the intent to control the inflammatory response in the lungs, thus minimizing the granuloma formation and subsequent loss of lung function.

Table 2: Pharmaceutical agents used in treating sarcoidosis.

<table>
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<th>Corticosteroids</th>
<th>Immunosuppressives</th>
<th>Miscellaneous</th>
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<tbody>
<tr>
<td>Prednisone</td>
<td>Azathioprine</td>
<td>Ciclosporin</td>
</tr>
<tr>
<td>Prednisolone</td>
<td>Methotrexate</td>
<td>Hydroxychloroquine</td>
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<td>Dexamethasone</td>
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<td>Cyclosporin</td>
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<td>Decadron</td>
<td>Cytarabine</td>
<td>Oxymetholone</td>
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<tr>
<td>Diclofenac</td>
<td>Diphenhydramine</td>
<td>Trazodone</td>
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<td>Trianformol</td>
<td>Captopril</td>
<td>Levothyroxine</td>
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<tr>
<td>Trianformol</td>
<td>Atorvastatin</td>
<td>Allopurinol</td>
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</table>

Prednisone is the most commonly used drug of all. Unfortunately, prednisone has a number of side-effects. Some of which can be quite severe.

- CNS: CHF, hypertension, edema
- DERM: delayed healing, acne, skin eruptions
- EENT: cataracts, glaucoma, thrush
- GI: peptic ulcer, irritation, increased appetite
- Immune: increased susceptibility to infection
- Metabolic: Hypokalemia, sodium retention, fluid retention, weight gain, osteoporosis
- Musculoskeletal: muscle atrophy, weakness
- Other: pancreatitis, cushingoid symptoms, withdrawal syndrome

Some of these side-effects, such as edema and skin eruptions, are symptoms of pulmonary sarcoidosis itself and thus are exacerbating the energetic imbalances produced by this disease. In addition, prednisone can suppress the immune function. This decreases the Wei Qi and allows for other Wind Invasions to enter the body. An excellent resource for patients and practitioners is the book entitled “Coping with Prednisone”20, which offers suggestions for dealing the side effects of prednisone.

Even with an absence of side-effects, pharmaceuticals do create energetic imbalances in the body. These side-effects are important to the practitioner for longer term management and disease prevention. In addition, the TCM practitioner should be aware of all the side-effects of any medication a patient in taking to realize that some aspects of the patient’s presenting symptomology is due to the medications instead of the sarcoidosis itself. In this way, one can monitor the
progression of the disease as opposed to the progression of side effects. With significant side effects to medications, the patient should be advised to consult their doctor.

**TCM RELATED MODALITIES**

In addition to acupuncture, it is highly recommended that patients employ Chinese herbal medicine, Chinese diet therapy and Qi Gong. Chinese herbal medicine and diet therapy work along the same energetic principles as acupuncture. The goal of both is to prolong and enhance the energetics being addressed in an acupuncture session. Qi Gong, which is exercise to cultivate one's Qi, can also be tailored to a patient's individual needs. Qi Gong that focuses on the breath and thus the Lung's health are of prime importance. All of these supplemental modalities should be prescribed according to the patient's energetic diagnosis. These recommendations are made because so much more needs to be done than seeing an acupuncturist once a week. It is also about what patients put in their bodies and how they live their lives.

**CONCLUSION**

Other systems can be affected by sarcoidosis, most notably the spleen or the liver as shown above in Table 1. Unfortunately, an extensive theoretical construct to explain the multiple systems and multiple dimensions involved to include all forms of sarcoidosis is beyond the scope of this article and is thus limited to the Lungs and pulmonary sarcoidosis. Pulmonary sarcoidosis is one of the new diseases of our lifetime. Little was known about its allopathic origins more than 15 years ago. It is this author's sincere hope that this article will open a dialogue between the Western and Eastern medical community. Sarcoidosis is a potentially fatal disease that begs for truly integrative and complementary medicine to halt its progression. By having both sides understand the other's perspective, this can finally take place.

Note: Chinese terms are capitalized throughout the text. For example, Liver reflects an energetic dynamic while liver represents the western physiological and biochemical dynamic.

**References**

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