



SARCOIDOSIS AND TUBERCULOSIS IN PREGNANCY

Sarcoidosis and tuberculosis are two pulmonary disorders that can complicate pregnancy. Sarcoidosis is a chronic disorder that affects multiple organ systems and is of unknown etiology. Its prevalence in the United States is approximately 0.02%. There is an approximately 10 to 20 times increased risk for African Americans. Tuberculosis, on the other hand, is an infectious disorder. It has been a medical concern for a long time, and was known as "consumption" or "white plague" early in the twentieth century. At that time, medications for its eradication were sparse and it was a leading cause of death. Since then many drug regimens have come about to treat tuberculosis. Its incidence has recently increased in the United States due to the emergence of HIV. Several multi-drug resistant strains of tuberculosis have been discovered, causing extreme concern regarding the treatment of this disease.

Q. WHAT IS SARCOIDOSIS?

A. Sarcoidosis is a disease characterized by inflammation. Its cause is currently unknown. It can appear in any location, but is found most frequently in the lungs. Pulmonary sarcoidosis presents as loss of lung volume (total amount of air that the lungs can hold is decreased) with resultant difficulty breathing. As sarcoidosis progresses, small granulomas may appear on the affected tissues, which are areas of inflammation. These areas may cause scarring (fibrosis) when they heal, with loss of total lung volume. Sarcoidosis often has a very brief course, and often heals spontaneously without any treatment. Approximately 20 to 30% of patients sustain some type of permanent loss of lung function. Additionally, a small percentage of patients have a chronic form of sarcoidosis that persists over time.

Q. WHAT IS TUBERCULOSIS?

A. Tuberculosis (also known as TB) is an infection that is acquired by inhalation. TB is caused by bacteria known as *Mycobacterium tuberculosis*. It causes an inflammatory reaction in the lungs characterized by granulomas (a specific reaction in the lungs to the bacteria) and can sometimes affect other areas of your body.

TB is spread from person to person through the air. If a person infected with TB coughs or sneezes, the bacteria may be spread into the air. If you are in contact with this person for a significant amount of time, you are at risk of breathing in the bacteria from the air. You may therefore become infected with tuberculosis as well.

When a person is infected with TB, the bacteria settle and grow in the lungs. They may spread through the blood stream to other parts of the body and cause further infection. Initially, a person's immune system attempts to control an infection of TB. It does this by walling off the infecting organisms, preventing spread throughout the body. The bacteria are therefore set in an inactive state. Patients with inactive

TB are not infectious but usually do have a positive PPD (TB skin test). It will be necessary for these people to take medications to prevent them from developing TB later in life.

People with weak immune systems are at increased risk of having active TB due to their body's inability to keep the TB in an inactive state. These people need intense medical treatment and if left untreated can die. A few weeks after starting medication for active TB, most patients are no longer infectious.

Q. WHO IS AT RISK OF HAVING SARCOIDOSIS?

A. Sarcoidosis is a disease that can affect all people of all races. It has been found to be more common in African American and people of northern European descent. It usually affects young adults ranging from 20 to 40 years of age.

Q. WHO IS AT RISK OF ACQUIRING TB?

A. Anyone who is in close contact with a person with TB is at increased risk of acquiring it. Elderly people, homeless people with little access to health care, health care workers, and people infected with HIV or at risk of acquiring HIV are at increased risk of acquiring TB. People from places where TB is endemic, such as Latin America and parts of Asia and Africa, are at increased risk.

Q. HOW IS SARCOIDOSIS DIAGNOSED?

A. Sarcoidosis is usually suspected based on clinical symptoms. Patients may present with a dry cough (with no production of sputum), difficulty breathing, or mild chest pain. There may be associated fatigue or weight loss. Your physician may order lab tests, pulmonary function studies, and/or a chest X-ray. If the lymph nodes at the center of your chest X-ray appear enlarged, the diagnosis may be suspected. One other X-ray study that your physician may perform is called a gallium scan, which often selectively indicates areas of inflammatory activity. Definitive diagnosis is made by performing a biopsy on the affected areas.

Q. HOW IS TUBERCULOSIS DIAGNOSED?

A. People with tuberculosis may have many presenting symptoms. The most common of these include a chronic cough, fever, fatigue, weight loss, and night sweats. Often a person with TB will notice blood in their sputum. Your physician will first obtain a TB skin test. Often your physician will also order a chest X-ray. Definitive diagnosis of TB is made by evaluating your sputum for bacteria.

Q. HOW IS SARCOIDOSIS TREATED?

A. In a majority of patients, sarcoidosis spontaneously resolves with no treatment. In some instances, your physician may prescribe corticosteroids (drugs that reduce inflammation) for treatment of your sarcoid. These drugs may be prescribed daily or on alternate days, and will eventually be tapered.

Q. HOW IS TUBERCULOSIS TREATED?

A. Tuberculosis is treated by a multiple drug regimen. Often 4 drugs will be used at one time to treat TB. You must take these medicines for 6 months. Some types of TB may be resistant to the medications usually used to treat TB. In this case, alternative regimens or a longer course of treatment may be required. The drugs used for initial treatment are as follows: isoniazid, rifampin, pyrazinamide, and either ethambutol or streptomycin.

Q. HOW DOES SARCOIDOSIS AFFECT PREGNANCY?

A. Pregnancy has not been shown to have any significant effects on sarcoidosis. Most patients with sarcoidosis during pregnancy notice no change during this period of time. Many patients even notice an improvement in their symptoms during pregnancy. If a patient is having pulmonary problems during pregnancy, a course of steroids may be indicated.

Additionally, it has been shown that sarcoidosis has no adverse effects on a fetus.

Q. HOW DOES TUBERCULOSIS AFFECT PREGNANCY?

A. To date, the effects of tuberculosis on pregnancy are unclear. Some studies have suggested an increased risk of low gestational weight, preterm labor, and adverse perinatal events or death. The numbers of patients in these studies, however, were small.

The effects of tuberculosis on the infant can be serious. Although it is rare, your infant may acquire congenital tuberculosis, which can be fatal. Additionally, your infant may acquire tuberculosis at the time of delivery. If you have been taking medications for at least 2 weeks prior to delivery, however, transmission is unlikely. Your infant may acquire TB after delivery from exposure from the mother. Therefore, if you have not already been on treatment for a significant period of time, it may be suggested that you limit contact with your infant.

Treatment for tuberculosis during pregnancy is similar to treatment of the non-pregnant patient, with a few exceptions. First, if you test positive for the skin test, but have no evidence of active disease, the usual recommendation is to take isoniazid for 1 year. With pregnancy, this treatment is often delayed until after delivery. If you test positive for active TB a 4-drug regimen is still recommended even during pregnancy. The only difference is that streptomycin is not given because associated congenital deafness has been noted. Additionally, pyrazinamide has not been adequately studied in pregnancy. Thus the initial regimen for the pregnant patient is usually isoniazid, pyridoxine, rifampin, and ethambutol. These medications are given for at least 9 months.

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