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TUBERCULOSIS: Early Diagnosis And Treatment

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Introduction

Although there are measures in place to control TB cases in the US, TB is prevalent and has high morbidity and mortality rates. This issue is due to failure to identify and treat the disease as early as possible, especially in the latent stage. The late diagnosis of the disease causes delay in treatment which may result in complications or even death. Also, TB cases have been recorded among foreign-born and indigenous who are vaccinated, but some of those immigrants are not screened as required. Thus, this paper will be focused on the advanced practice nurse to identify such patients to aid in the early diagnosis and treatment. Moreover, nurses should be knowledgeable and be equipped to assist TB patients during treatment (Furlan, Marcus, & Silva, 2014).

Underlying Pathophysiology

In the latent tuberculosis infection (LTBI), the bacillus is ingested by the macrophages and the immune system or the white blood cells kill or encapsulate majority of the bacteria which forms the granuloma (CDC, 2016). Therefore individuals in the LTBI stage do not have the TB disease. • Cannot spread the TB disease • May not have symptoms or culture • Will react positive to the Mantoux tuberculosis skin test

To screen for TB, the Mantoux tuberculosis skin test is used. It is a diagnostic test in the acid-fast bacillus but diagnosis must be confirmed with sputum culture (Amerena, 2017). Other supporting diagnostic tests include chest X-ray and CT scan. Rifampicin, streptomycin, ethambutol, isoniazid, and pyrazinamide are the 5 recommended antibiotics for TB treatment (Amerena, 2017). In countries with high risk TB, children who are 5 years and below are immunized with Bacillus Calmette-Guerin (BCG) (Amerena, 2017).

Signs And Symptoms

Individuals in the latent stage do not show any signs and symptoms. Signs and symptoms observed in the active phase include: • Persistent cough • Fever • Loss of appetite • Weight loss • Night sweat • Fatigue

Tuberculosis may spread and affect other parts of the body like the spine or the liver, the kidneys, and the brain. The development of the disease in other organs may cause some specific symptoms such as back pain in patients with TB of the spine, and hematoma in patients whose kidneys are infected.

Significance of Pathophysiology

Late diagnosis of TB remains an issue in the management of the disease. There is increase of mortality rate associated with late diagnosis. Late diagnosis has the patients usually present with a severe form of the disease. Also, late diagnosis increases the rate of spreading the transmission rate (Furlan, Marcus, & Silva, 2014). Understanding the pathophysiology of tuberculosis will aid in the early diagnosis especially in the late stage where diagnosis is mostly missed. Early diagnosis facilitates the control & management of TB due to the early initiation of treatment (Furlan, Marcus, & Silva, 2014).

Nursing Implications

It is necessary for the advanced practice nurse to understand the pathophysiology of the disease so that they can: • Make early diagnosis • Initiate treatment as early as possible • Monitor TB patients to detect changes and complications (Furlan, Marcus, & Silva, 2014) • Address patient’s concerns related to treatment • Follow-up policy and monitor TB disease • Provide adequate education for the patient and the community

Nursing should have adequate knowledge about TB so as to provide quality care to patients (Almeida et al., 2018), which include using the appropriate personal protective equipment (PPE), TB test and screening and policy guidelines, and postexposure screening and testing (Sosa et al., 2019). One factor which facilitates the late diagnosis and treatment of TB is the issue of self-medication and drug abuse (De Golvesco de Oliveira et al., 2019). This issue of medication adherence may be due to the duration of treatment and adverse reactions associated with the medications, it is therefore necessary for nurses to establish good rapport with the patient and their families to enhance treatment adherence.

Additional Sources

doj.org/healthtopics/tuberculosis/a.html

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Reference


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