

Nursing critical thinking examples

[Family](#), [Children](#)



Transmission of TB

The transmission of Tuberculosis (TB) from an infected individual to a disposed individual is caused by an airborne particle, known as droplet nuclei. These droplets are microscopic water droplet containing bacteria that are released when an individual suffering from TB laugh, sing, sneeze, cough etc. therefore, transmission is deemed to occur when the susceptible person inhales droplet nuclei with tuberculosis bacteria (Dyer, 2010).

Can children give TB to other children? Who is contagious?

Children under the age of 15 years are considered to be a threat in transmitting TB because young children and infants are more vulnerable in developing deadly forms of tuberculosis diseases such as TB meningitis and disseminated TB. Therefore, an infected child can transmit Tb to another child since children have weak immune system. TB is therefore a contagious disease that can infect any person irrespective of their age.

Pathophysiology of TB

When the droplet nuclei with tubercle bacilli are inhaled, they enter into the lungs and then travel to the alveoli where they multiply. Some of the tubercle bacilli enter into the blood vessels and then transported in the whole part of the body, and even to some body parts such as brain where development is enhanced. In duration of 2 to 8 weeks, special immune cells, macrophages, surround and ingest the tubercle bacilli. A barrier cell known as granuloma is formed to keep the bacilli under control and contained (Dyer, 2010). The bacilli then begin to multiply rapidly if the immune system is unable to keep

tubercle bacilli under control. This process can occur in various parts of the body such as brain, lungs, bone, or kidney.

Discuss the difference between a positive PPD with a negative CXR and a positive PPD with a positive CXR

Individual with positive purified protein derivative (PPD) and a negative chest x-ray (CXR) are said to be infected with mycobacterium tuberculosis but there is no evidence of active disease in the individual's lungs. This condition is recognized as Latent Tuberculosis Infection (LTBI). On the other hand, an individual with positive PPD and a positive CXR contains an active TB, and unlike those who test positive CRX, the individual can spread TB.

How likely it is for the different pediatric age groups and young and older adults to have disease in his/her lifetime

The likelihood of contracting disease is deferent in pediatric age group and young and older adult in several ways. For instance, the diagnosis of TB I pediatric are group is more challenging than the adult due to insufficient or absolute absence of symptoms and strain in approving the diagnosis microbiologically. Children also suffer more disseminated and extra-pulmonary TB than adults. In addition, there lack pediatric drug formulation and the monitoring for toxicity are challenging making it difficult to treat TB in children. However, children have more capability to tolerate medications and cope with treatment than the adults.

How HIV modifies TB diagnosis and management

According to (Kaufmann, Walker, & Wiley (2009), HIV associated with TB exposes the patient of difficulties in both diagnosis and treatment of TB. Due to the poor performance of sputum smear microscopy in patient affected

with HIV, newer and modified diagnostic test are immediately required, and must specific and sensitive and easy to use in resource-limited and remote settings. With regard to treatment, the HIV patient requires antiretroviral and ant-tuberculosis drugs to be administered concomitantly. This becomes challenging due to challenges such as drug interactions, patient compliance and pill burden, immune reconstitution inflammatory syndrome, and overlapping toxic effects.

References

- Dyer, C. A. (2010). Tuberculosis. Santa Barbara, Calif: Greenwood.
- Kaufmann, S. H., Walker, B. D., & Wiley InterScience (Online service) (2009). AIDS and tuberculosis: A deadly liaison. Weinheim: Wiley-VCH.