Overview when the hiv was discovered and even

Sociology

OVERVIEW OF TUBERCULOSIS Infectious diseases are so dreaded that it spreads rapidly to people from small community to the whole country and even to the world.

Tuberculosis(TB) is very well-known by people for its several outbreaks in the past few years. Every year, around the world, an estimate of 8 million people is diagnosed with tuberculosis, as reported by World Health Organization. The mortality rate caused by tuberculosis is very high because around 3 million of infected people die each year. So far, there are almost 2 billion people suffered from TB and this number of morbidity makes up one-third of the world population. In case of geographical distribution of diabetes, its morbidity is higher in low- and middle-income countries like South Africa and Myanmar.

Ninety percent of TB cases and deaths are contributed by these countries. Therefore, it is said that TB is a disease of poverty because of higher incidence of TB in poorer countries. As drugs used to treat TB like Isoniazid were introduced since 1952, drug-resistant TB emerged and caused an outbreak in 1970.

Another outbreak occurred in 1985 when the HIV was discovered and even gave rise to other infectious disease including TB as HIV destroys the immune system, so occurrence of TB became higher, especially in HIV patients. A lot of efforts and investments had been made to control the TB cases, resulting in 47% fall in TB mortality rate from 1990 to 2011. However, the number of people die of TB exceeds 4000 per day. By definition, tuberculosis is a chronic, communicable(infectious) disease that attacks the

lungs mainly and other body parts caused by Mycobacterium tuberculosis. It primarily involves mode of direct airborne transmission when infected person cough, sneeze or speak that expel aerosolized respiratory droplets while another person inhales the bacteria in the droplet nuclei that circulates in the air.

M. tuberculosis is a non-motile obligate aerobe with slender, rod-shape that is acid-fast. Robert Koch even coined the bacteria as Koch bacillus. It is also known as acid-fast bacteria in terms of diagnosis because it has a ‘ fatty wall’ characterized with plenty of fatty acids, mycolic acid and complex lipids. This makes them impermeable and a useful tool for identification as they will give the colour of acid-fast stain without decolorization by alcohol. Other than being used in its detection, the cell wall has protective effect against extreme pH, oxidative stress and especially antibiotics. In fact, M. tuberculosis is neither gram-postive nor gram-negative due to absence of related chemical and morphological characteristics even though it has peptidoglycan in the cell wall.

Still, sometimes people consider it as weakly gram positive. In most of the cases, TB attacks the lungs, especially the upper lobe but also infect other body parts. This is because mycobacterium is obligate aerobic bacillus, meaning that it can only survive in oxygen-rich environment like lungs where the primary site of TB infection, called pulmonary tuberculosis. This TB is communicable as the person with TB in lungs coughs, sneezes or speaks, releasing aerosolized droplets that contain TB into the air. Evaporation of droplets leaves the bacteria alone staying in the air. Once another person inhales the air having tubercle bacillus, the inhaled droplet nuclei pass down

the bronchial tree and settle on the alveoli. This tuberculosis is latent. From the lungs, TB can spread to other parts including bones, brain and kidneys where TB is not contagious.

Infection in these parts is extrapulmonary tuberculosis. Basically, there are a lot of species of mycobacterium but only two as the causative agent: M. tuberculosis (human TB) and M. bovis (bovine TB). Both mycobacteria infects human being but the latter can also infects cows. As cows are also the reservoir for M. bovis, when the milk produced by cows with M. bovis is not pasteurized properly, people who drink the contaminated milk then get diagnosed with oropharyngeal and intestinal TB.

Everyone is susceptible to TB, but certain risk factors may expose someone to higher chance of getting infection: i. Under crowded and confined conditions, if someone with active TB is there, the spreading of disease through the air is very fast and a lot of people may get infected. ii. People suffered from HIV are more prone to TB infection. iii. Other diseases that suppress immune system like diabetes mellitus, chronic renal disease, cancer.

iv. Poverty and inadequate health care. v.

Travel or foreign-born person from places where TB is prevalent. vi. Stay close with infected person like healthcare jobs and family.

People with pulmonary TB normally manifest symptoms like reduced weight, night sweats, weakness, fever and especially bloody cough for more than two weeks, but different parts of body infected show different symptoms. For

e. g., blood in urine can be seen in patients with TB in kidneys. Actually, tuberculosis can be latent or active as sometimes our immune system is strong enough to fight against it: (1) Latent TB infection manifest no symptoms at all but the bacteria are found in body as the immune system is able to fight off the tubercle bacillus and keep them in inactive state.

Thus, they seem really healthy and are unlikely able to spread disease to others. However, it can be activated anytime once the immune system is defeated by bacteria. (2) Active TB infection cause symptoms as mentioned above and is contagious through respiratory droplets. People with weak immune system easily get infected in few days. The tubercle bacillus keep multiplying in their body and spread to other area through blood.