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A Brief Overview of Tuberculosis

Tuberculosis(TB) is a bacterial infection caused by *Mycobacterium tuberculosis* (MTB). The prefix of *Mycobacterium* is likely noticed as 'mushroom-like', in relation to *Mycetes*. This is not because of the involvement of fungi, but rather because the early observations of MTB revealed its growth characteristics and morphology to resemble that of fungi.

The presentation of TB infection is typically in the lungs, but in rare cases symptoms can be observed in other areas of the body. ~90% of TB infections never progress to active disease, but the ~10% cases that do are likely to cause death of the host. Treatment of the infection is difficult, requiring arrays of antibiotics that are becoming less effective as the strains of TB grow increasingly resistant.

TB can be prevented through the administration of the bacillus Calmette-Guerin vaccine (BCG). Typical cases for the use of the BCG vaccine are on the babies in areas of high TB infection risk, and to adults who are likely to be frequently exposed to those with TB.

Airborne is the most common transfer method of the bacteria, passed through droplets and mucus spread by sneezes, coughs, and close proximity to an infected host. In 2020, an estimated 10 million people developed active TB, resulting in 1.5 million deaths. As the second highest ranking overall mortality, TB is surpassed only by Covid-19 with 1.8 million reported deaths.

The most prevalent risk factors for TB are smoking and HIV/AIDS. Both of these are not surprising, since smoking damages the lungs and makes them susceptible to infection, and autoimmune deficiency increases susceptible to all infections.

Important terms to understand when dealing with a global pandemic like TB are:

Prevalence - the number of cases of a disease in a specific population at a particular point or period of time.

Incidence - the rate of new cases of a disease occurring in a specific population over a period of time

Mortality - the rate of occurring deaths caused by a disease in a specific population over a particular period of time.

The definitions used in this brief overview are derived from those provided by curators of Wikipedia. The website of the World Health Organization was used as a reference for specific values.