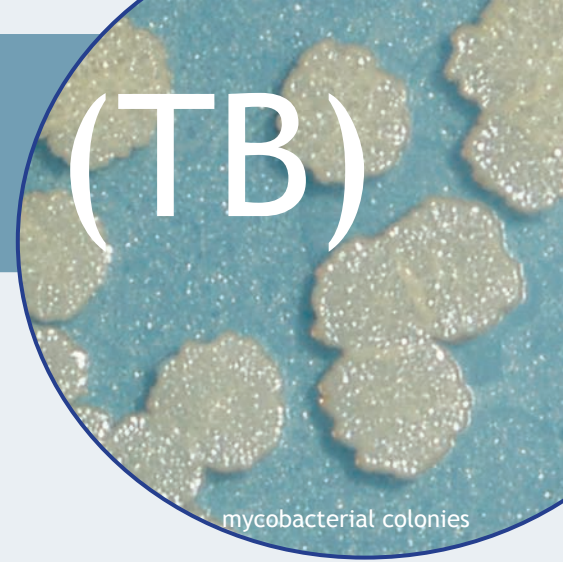


Tuberculosis (TB)

- ▶ TB is a serious, but treatable bacterial disease caused by *Mycobacterium tuberculosis*
- ▶ Although TB can be controlled, infections are rising and 350 people in England die from it each year
- ▶ TB can be prevented through
 - ▷ BCG vaccination
 - ▷ swift diagnosis and treatment
 - ▷ ensuring treatments are completed fully



mycobacterial colonies

Infection or infectious?

Latent TB infection: no symptoms; person feels well; may react positively to the tuberculin skin test; cannot spread infection to others. However, latent infections can develop into full TB disease if preventative therapy is not received.

Active TB disease: symptoms include bad cough; chest pain; greenish or bloody sputum; weakness or fatigue; lack of appetite; weight loss; chills; fever and night sweats.

How is TB spread?

When someone with active TB coughs, talks or sneezes, mucus and saliva loaded with infectious bacteria are propelled into the air to be inhaled by other people.

Prevention

The current BCG vaccine to prevent the spread of tuberculosis is not 100 % effective. In the UK, BCG only protects about 75 % of people who receive it and protection only lasts for about 10 years. Second vaccinations with BCG do not boost protection.

Treatment

Current treatment for TB involves a combination of 3-4 different kinds of antibiotics given over 6-9 months. Multi-antibiotics are used to prevent the emergence of drug-resistant strains and the treatment has a 90 % cure rate. After two weeks,

patients are no longer infectious and after one month, they should start to feel well and regain weight.

Without treatment, fatality rates are at least 50 % and each person with active TB disease will infect on average between 10 and 15 people every year.

Drug resistance

Resistance to antibiotics occurs mainly because patients stop taking them when they start to feel better, due to inconvenience or to save money. At this time, they may not be free of bacteria and the disease can re-occur, along with resistance to the drugs.

Multi-drug resistant tuberculosis (MDR-TB) has now been reported in more than 100 countries or territories. Treatment for MDR-TB is prolonged (often lasting for two years) and toxic to patients.

TB vaccine news

A new vaccine has been developed that uses 'prime-boost' technology to boost the immune response to TB. The BCG vaccine is used to prime the immune system and a modified vaccinia virus (MVA) vaccine then boosts it. The two vaccines are given separately and both contain the 85A antigen from *Mycobacterium tuberculosis*. Trials are still continuing to determine the correct dose of each vaccine required, as well as the interval between inoculations.

MICROBIOLOGY AWARENESS CAMPAIGN

The Society for General Microbiology (SGM) Microbiology Awareness Campaign aims to highlight the important issues relating to microbiology. Through its many members, the SGM can offer impartial and expert information on all microbiological topics. Enquiries are welcome.

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