TB Meningitis

- **TB meningitis is comparatively unusual in the UK.**
- **Tuberculous (TB) meningitis occurs when tuberculosis bacteria (*Myobacterium tuberculosis*) invade the membranes and fluid surrounding the brain and spinal cord.**
- **The infection usually begins elsewhere in the body, usually in the lungs, and then travels through the bloodstream to the meninges where small abscesses (called microtubercles) are formed.**
- **When these abscesses burst, TB meningitis is the result.**

In areas where TB prevalence is high, TB meningitis is most common in children aged 0 - 4 years, and in areas where TB prevalence is low, most cases of TB meningitis are in adults[1]

Immunisation with BCG vaccine provides 75 % protection in the UK setting[2] and until recently children were routinely vaccinated at school (between the ages of 10 - 14), unless a skin-test showed that they were already immune. In the UK, changes are currently being introduced to the BCG vaccination programme and the national schools' based programme was stopped in September 2005. After reviewing statistical and scientific data, the UK government now recommends that the following risk groups be offered BCG vaccination[3]

- All infants living in areas where the incidence of TB is 40 per 100,000 or greater.
- Infants and previously unvaccinated children whose parents or grandparents were born in a country with a TB incidence of 40 per 100,000 or higher.
- Previously unvaccinated new immigrants under 16 years of age from high prevalence countries for TB.
- People with jobs where there is high risk of contact with infected patients, animals or clinical materials e.g. health care workers, care home staff etc.

Children who would otherwise have been offered BCG through the schools' programme and who have particular risk factors should be vaccinated as appropriate.

The Irish government recommends that BCG vaccination should be offered to newborn babies[4], but can also be given to older children and adults considered to be at risk of developing TB[5]

People with TB infections only pose a risk to others when they are sputum-smear positive; that means bacteria are present in sputum produced by coughing. Prolonged, household contact is normally necessary for TB to be passed on. Household contacts of people with TB are usually given antibiotics to prevent infection, skin-tested then vaccinated if not already immune. The risk of catching the illness at school is tiny - children are rarely smear-positive. Smear negative children with TB infection can attend school as normal. Smear-positive children can normally go back to school two weeks after starting antibiotics[6]

Diagnosis of TB meningitis is even more difficult than with other forms of bacterial meningitis. This is because it does not come on suddenly with classic meningitis symptoms.

TB meningitis normally begins with vague, non-specific symptoms of aches and pains, low-grade fever, generally feeling unwell, tired, irritable, not being able to sleep or eat properly, and gradually worsening headache. This lasts for two to eight weeks. In the elderly, symptoms are even more subtle, often just drowsiness and feeling unwell.

It is not until weeks later that more obvious symptoms like vomiting, severe headache, dislike of lights, neck stiffness and seizures occur. Without medical treatment, the disease will progress causing confusion, obvious signs of nerve damage and eventually resulting in coma.

Treatment generally lasts for about a year, involving intensive treatment with three or four antibiotics at first and continually with two antibiotics for about 10 more months. TB meningitis tends to be more severe than other forms of meningitis. Although 70 - 85% of those affected will survive, up to one quarter of those may have long-term after effects. This is mainly because it is so difficult to recognise the disease at an early stage. By the time treatment begins, there may be damage to brain tissue as well as nerves and blood vessels in the area around the brain. If treatment begins before the patient shows signs of brain damage, there is a good chance of making a full recovery.

In the 20th century, the incidence of TB dropped dramatically in industrialised countries, and cases of TB meningitis decreased accordingly. In the late 1940's there were 2000 cases of TB meningitis each year in England and Wales, but by the 1990's this had dropped to fewer than 100 cases. However, TB and TB meningitis are major problems worldwide, and TB

cases are on the rise in industrialised countries. Two hundred and fifty nine cases of TB meningitis were reported in England and Wales in 2006, compared to an average of 115 cases per year between 1998 and 2000[7]. In Ireland (2006) the total number of TB meningitis cases notified nationally is 6[8] .

Further information

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Visit our website www.meningitis.org

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