Tick Borne Encephalitis

By Dr Benedict Michael, NIHR Doctoral Research Fellow, Professor Tom Solomon, Chair of Neurological Science, Head of Institute for Infection and Global Health, University of Liverpool, Dr Fiona McGill, Specialist Registrar in Infectious Diseases and reviewed by Katherine Dodd, Specialist Registrar in Neurology

What is Tick Borne Encephalitis?
Tick Borne Encephalitis (TBE) is a type of Encephalitis that is caused by a virus that is spread by ticks. Ticks are small parasites that survive by sucking blood from animals – including humans.
Ticks are the main carriers of the virus. It is also found in small rodents and some larger animals such as sheep and goats. There are three different types of TBE. These are the European, the Siberian and the Far Eastern types. The European type is mainly found in central, eastern and northern Europe. People get TBE mostly in Spring and Summer (it is also sometimes called Russian Spring Summer Encephalitis).

How can you get TBE?
Humans can be infected following a tick bite from an infected tick. The virus is present in the tick’s saliva, which contains a natural anaesthetic, so you may not notice you have been bitten. It is important to check your body regularly for ticks when you are in risk areas. Occasionally people have been infected after drinking untreated milk from animals such as goats.
Ticks live in forests, woods, grasslands, riverside meadows, marshes, brushwood and shrublands. They usually live in the undergrowth, where they can easily get onto the clothes or skin of passers-by. Therefore walkers, for example, are at an increased risk of getting the disease.
Not all ticks carry the virus but it can be present in up to 10% of ticks in some areas.

TBE occurs in parts of Austria, Germany, southern and central Sweden, France (Alsace region), Switzerland, Norway, Denmark, Poland, Croatia, Albania, the Baltic states (Estonia, Latvia and Lithuania), the Czech and Slovak Republics, Hungary, Russia (including Siberia), Ukraine, some other countries of the former Soviet Union, and northern and eastern regions of China. It is predicted that the areas affected will grow due to global warming.

**What are the symptoms of TBE?**
Most people who are infected with the Tick Borne Encephalitis virus actually show no symptoms at all. In those that do have symptoms they typically appear about 1-2 weeks after the bite. It can be as short as 4 days and as long as 4 weeks. About one third of patients will not have even noticed the tick bite.

In the European type of TBE there are normally 2 phases to the illness. The first phase occurs when the virus is in the blood stream. This phase consists of flu like illness with symptoms such as fever, headache and generalised body aches. It lasts around 5 days. There is then about a week with no symptoms which is followed by the second phase of the illness. The second phase is where the brain or nerves are involved. The severity of the second phase varies between patients. Some people will have a very mild illness whilst others may die. Older people tend to get more severe illness than younger people or children.

The symptoms in the second stage are similar to other causes of Encephalitis and Meningitis (inflammation of the lining of the brain). These include neck stiffness, headache, drowsiness, poor coordination and tremor. Some patients will also get limb weakness (most often in the arms). In severe cases the muscles that control the breathing are affected and people may die.

**What tests can be done to diagnose TBE?**
Pictures of the brain using CT (computerised tomography) scans or MRI (magnetic resonance imaging) will be done as in other causes of Encephalitis. A lumbar puncture (sometimes called a ‘spinal tap’) will also be done to examine the fluid that surrounds the brain. These tests are helpful to diagnose Encephalitis but are not specific for TBE. However, there is a blood test that can be done specifically for TBE.
What are the consequences of TBE?
Some people (less than 2%) may die from TBE. (This is more common in the Far Eastern type). Most people will recover completely. Still others may have long lasting disability such as paralysis (the inability to move your arms and/or legs). Long-lasting paralysis may occur in up to 6% of people with TBE.
Between 10 and 20% of people will suffer from other complaints such as headache, tiredness, difficulty concentrating and poor memory for at least a year after the illness.

What treatment is available for TBE?
Unfortunately there is no specific treatment for TBE. For people who have severe disease they may need supportive treatment in hospital such as intensive care. However most people will only need symptom control.

TBE can be prevented by avoiding the areas where the disease occurs. If that is not possible then there is also a vaccine available for people who live in highly endemic areas, or travellers to those areas. It is an inactivated vaccine, does not contain live organisms and cannot cause the disease against which it protects. If walking in affected wooded or rural areas it is recommended to wear long trousers to cover exposed skin, use an insect repellent that is effective against ticks, and inspect your skin for ticks regularly. Unpasteurised dairy products should also be avoided in these areas.

Other sources of information:
- **Tick Alert (www.tickalert.org)**
  Tick Alert aims to raise awareness about the risk of Tick Borne Encephalitis (TBE) which is endemic in 27 countries across Europe. The campaign encourages travellers planning to visit a TBE endemic country to find out more about the disease and take action by contacting their GP or travel health clinic to discuss precautions.
- **The International Patient Information Board on Tick-Borne Encephalitis (www.tick-victims.info)**
  The group comprises internationally recognised experts from endemic regions. They work together to raise awareness at both national and international level
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