

## Practitioner's Blog

# TB or not TB: the forgotten plague

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Tuberculosis (TB) is a curable but sadly often fatal disease. According to the World Health Organisation (WHO) 8.6 million people fell ill with TB in 2012 resulting in 1.3 million deaths, while 3.0 million people are not being treated (WHO, 2013). Every year, 24 March is marked by World TB Day. It aims to raise awareness of the disease. The theme this year is to reach the 3 million who are not being treated at all. Foreign-born migrant populations, although a minority of the general population in Western European countries, account for greater than 40% of TB cases reported (ECDPC, 2010). London epitomises the impact that migration from high-TB-burden nations has on TB epidemiology in low-burden European nations (Pareek *et al*, 2011) with London now in the World Health Organisation's highest band for TB incidence in Europe (WHO, 2013).

With a third of the world thought to be living with latent TB, the need to promote testing and instigate treatment is a public health priority (WHO, 2013). Public Health England (PHE) has made TB one of its key priorities and is working with other stakeholders to oversee the development of a stronger national approach (Pedrazzoli *et al*, 2013). One such initiative currently underway in a London emergency department is a research project called PreDiCT-TB.

The aim of this project is to improve the predictive power of pre-clinical methods of TB testing in order to hasten the delivery of new treatment regimens. Recruitment criteria include people who have moved to the UK within the last five years from high-risk countries, people who have travelled in excess of six months in the last two years and those who have come into contact with a known TB carrier. Since many of the patients who met these criteria could not speak English and so could not consent and those that did tested negative it was decided to adopt wider capture methods and approach all walking patients who could speak English attending the emergency department (PreDiCT-TB, 2014).

So when Mr Smith attended the department with a wrist injury he was invited to participate in this study and was happy to consent. This gentleman was born and raised in the UK and had no known contact with a TB carrier. However, in the previous two years, his

work had taken him abroad for more than six months, travelling to countries such as Hong Kong, Bangladesh and Tanzania. Although he seemed an unlikely candidate for TB, he was eligible for recruitment into the study.

Mr Smith was given a Mantoux test and returned on day three to have this read; it indicated a positive reaction for possible latent TB. As the reaction was still doubted by the research nurse, Mr Smith was advised that the reaction could be due to his *Bacillus Calmette-Guérin* (BCG) vaccination as a child, although the reaction was slightly stronger than expected. Blood tests were performed to confirm initial findings. The possibility of finding a positive result in a British-born patient was perplexing, as all the patients recruited to the study up until this point had been of Asian and sub-Saharan African origin.

After 10 days Mr Smith was contacted to confirm his positive blood results and he was referred to the hospital TB service for counselling and discussions regarding treatment. Being over the age of 35, Mr Smith was counselled against preventative treatment as the side effects of treatment are considerable, hepatitis, dyspepsia, exanthema and arthralgia to name but a few. These are risks thought to outweigh benefits in otherwise healthy individuals over the age of 35, who are not a risk to others (National Institute for Health and Clinical Excellence (NICE) 2011, National Collaborating Centre for Chronic Conditions (NCCCC, 2006)). A plan was made to complete yearly chest X-rays, with the specialist TB nurse maintaining contact and offering advice as required. Mr Smith expressed his praise for the random testing and his positive feelings about being aware of his latent TB status. It may come as a surprise to many people, as it did to Mr Smith, that TB can be asymptomatic as it is more commonly associated with prolonged coughing, night sweats and weight loss; for many, such a diagnosis, albeit asymptomatic, could be catastrophic. Latent TB, often described as 'sleeping TB' can develop in any area of the body from the abdomen to the brain.

Being asymptomatic of pulmonary TB with a normal chest X-ray, Mr Smith was not a risk to others (NICE, 2011; PHE, 2013). He did not appear to be unduly concerned about his status. However, whether

he decides to inform his friends and relatives is a personal matter. For many people this may not be the case; historically TB has been, and in many senses continues to be, a highly stigmatised disease (Courtwright and Turner, 2010). Attitudes vary, but in some cultures TB may be considered a 'curse' on a family, as the illness is an airborne infection that can spread easily especially in overcrowded conditions (Courtwright and Turner, 2010). Research in the UK unequivocally highlights the majority of TB cases as being discovered in patients born outside of the UK, mainly originating from South Asia and sub-Saharan Africa (PHE, 2013). Amongst the UK-born population, those found to be positive for TB are those with social risk factors, including homelessness and a positive HIV status (Story *et al*, 2007). The impact of imprisonment and illicit drug use are also recognised risk factors (Story *et al*, 2007). These are vulnerable groups who are often already marginalised in society and the added diagnosis of TB can compound their isolation. Stigmatisation is a social determinant of health. When such stigma exists, the fear of the social and economic ramifications of such a diagnosis can make individuals reluctant to seek and complete medical care (Courtwright and Turner, 2010).

Stigmatisation of TB increases diagnostic delay and impedes treatment adherence. Despite improved education, such entrenched attitudes and prejudices prevail, which makes the eradication of this disease an enormous challenge (Story *et al*, 2007; Courtwright and Turner, 2010). Perhaps surprisingly, all the Asian and Sub-Saharan African patients screened in the emergency department were found to be negative while Mr Smith the indigenous patient was positive, which to an extent challenges many of the preconceptions about TB, particularly among ethnic minorities.

Such cases not only serve to highlight the dangers of preconceptions and stereotyping of individuals and communities. They also help to dispel some of the myths and taboos surrounding TB. TB can be contracted by anyone, with the majority diagnosed being asymptomatic carriers of latent TB. Studies have demonstrated that approximately 30% of healthy people closely exposed to TB will become infected but only 5–10% of them will go on to develop TB (Morrison *et al*, 2008; PHE, 2013). For the 5–10% who go on to develop TB the risk is greatest within the first five years following infection.

The example of Mr Smith demonstrates that inclusive capture methods such as those used in the emergency department generate results, which is important and the main thrust of the study. What is perhaps much more subtle but no less powerful is that this inclusive capture method not only raises awareness

in the greater community but also makes a strong statement about who is vulnerable to TB, challenging hitherto preconceptions and prejudices. Tuberculosis does not discriminate; it would be naive to believe that the indigenous are immune or in any way exempt as contrary to historical beliefs and popular prejudice, TB is alive and well; the reality is we are all as vulnerable as Mr Smith.

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