New guidance on prevention and management of tuberculosis

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In January, NICE published a new guideline on the prevention, identification and management of latent and active tuberculosis. This article outlines the views of some of those involved in the development of the guideline as well as leading clinicians and patients about what the updated guidance will mean for the future of tuberculosis treatment in the UK.

Many people think of tuberculosis (TB) as a Victorian disease that is no longer a major health problem in the developed world but despite a reduction in the number of TB cases in the past three years, England is still the country with the highest number of cases in western Europe. According to Public Health England, there were 6520 TB cases in England in 2014.1 London reported over 39 per cent (2572) of the country’s total, with a rate of around 30 TB cases per 100,000 people.

In the vast majority of cases, TB is treatable and curable when medicines are provided and taken properly, so why do we still see newspaper headlines in the UK that claim we are gripped by a “TB epidemic” and that “tuberculosis is so rife that rates in some parts of the UK exceed those in Third World nations”?

What the guidance covers
An “epidemic” is perhaps an exaggeration, but the headline writers are not wrong to highlight that TB is still a very serious problem in England and that is why NICE has published updated guidance for health professionals, public health workers and the voluntary sector to better treat and prevent TB.2 For the first time, this guidance combines clinical advice and public health guidance on recognition of the importance of tackling the social aspects of TB alongside the clinical aspects of the illness.

Professor Andrew Hayward, NICE Guideline Development Group co-chair and professor of infectious disease epidemiology and inclusion health research at University College London says: “We know what needs to be done to address the problem of TB in England; identify cases earlier, support patients through
Tuberculosis (TB) is an infectious disease caused by a bacterium called Mycobacterium tuberculosis. Initial infection is cleared in over 80 per cent of people, but in a small number of cases the immune system builds a defensive barrier around the infection and the TB bacteria lie dormant. This is called latent TB: the person is not ill and is not infectious. If the immune system fails to build the defensive barrier, or if the barrier fails later, latent TB can spread within the lungs (pulmonary TB) or develop in the other parts of the body it has spread to (extrapulmonary TB). Only some of those with latent TB will develop symptoms (“active TB”).

**Active pulmonary TB**
This describes TB that affects the lungs and causes symptoms. Symptoms are wide ranging and can include chronic cough, weight loss, intermittent fever, night sweats, fatigue, breathlessness and coughing blood. It is treated with a six-month course of a combination of antibiotics. The usual course of treatment is:
- two antibiotics (isoniazid and rifampicin) every day for six months
- two additional antibiotics (pyrazinamide and ethambutol) every day for the first two months.

It may be several weeks or months before the patient starts to feel better, depending on their overall health and the severity of the TB. After taking the medicine for two weeks, most people are no longer infectious and feel better. However, it is important to complete the whole course of antibiotics.

**Latent TB**
Latent TB describes infection with Mycobacterium tuberculosis but with no symptoms of active disease. Treatment for latent TB is recommended for:
- people aged 65 years or under (was previously 35 years or under)
- people with HIV, regardless of their age
- healthcare workers, regardless of their age
- people with evidence of scarring caused by TB, as shown on a chest X-ray, but who never received treatment.

For children with suspected TB, a test for hepatitis B and C should be considered before starting treatment for latent TB.

**How will the new guideline influence management?**

So how will these guidelines improve the management of TB in the UK and are they achievable? Professor Onn Min Kon is a consultant respiratory physician at St Mary’s Hospital in London’s Chest and Allergy Clinic and a medical adviser at the British Lung Foundation. He has welcomed the guidelines but expressed concern about “their lack of specific staffing ratios”—an omission that may make it harder for NHS clinicians to follow the guidance.

Professor Kon says: “There are several substantive changes in these guidelines published in January, which combine the prior guidelines (CG117) with the public health guidance on TB (PH37). The age of treatment for latent TB has been extended as well as reducing the threshold of the tuberculin skin test (the Mantoux screening test) to >5mm from the previous thresholds of >6mm without a BCG vaccination and >15mm with a prior BCG vaccination.

“This will allow a larger number of latently infected individuals to be treated and potentially reduce the cases progressing to full active TB, which is a good thing. But we will need to monitor those treated carefully for signs of liver disease, which can be a side-effect of treatment particularly in those over 35 years old.”

Professor Kon says the NICE guideline recognises the need for appropriate staffing capacity to work “optimally” and agrees that more raised awareness should allow for more effective detection and treatment of active TB cases. But he warns that there would be cost implications. “The additional workload for frontline TB teams likely to be generated by the extension of ‘cutoffs’ for latent TB has not been factored in and the lack of specific staffing ratios may make this task more difficult. Local commissioners will have to recognise this and ensure funding is appropriately allocated.”

Professor Kon underlines that the guidelines are now extended to those working in occupational health settings and the recommendation to screen the “underserved” for latent TB by a single interferon gamma release assay (IGRA) blood test. He adds: “In addition to the specific screening for active cases using..."
the TB mobile screening van, the raised general awareness should allow for more rapid referrals to TB teams by primary care and also community teams.”

Hanna Kaur, TB lead nurse at Birmingham and Solihull TB Service agrees with Professor Onn Kon that the increase in the upper age limit for testing and treatment for latent TB from 35 years to 65 years would undoubtedly have an impact on workload. She says: “Currently those over 35 years of age are offered a chest X-ray and not a Mantoux test. This process will increase the number of patients undergoing investigations for TB and more children and adults will be offered treatment for latent TB if active TB is ruled out. This will have an impact on workload.”

But in the long term the new guidance would help lower TB incidence, increase awareness and make sure more TB education is put in place, she notes. “The guidance now highlights how to re-establish treatment for active or latent TB after interruptions by adverse events from drug treatment and there is detailed information on managing patients who suffer side-effects from therapy.

“Enhanced Case Management (ECM) has also been clearly defined in this document: patients who are socially and medically complex may require more support. Having them under ECM and recording this can give commissioners more of an understanding when ensuring that TB services are resourced and that patients receive the input and support that is required.

“The document also gives clear guidelines on BCG vaccination and how to identify high risk groups. More resources will be needed. More clinic slots will be required to carry out screening, and then those positive results will need further investigation by a specialist. Also a Mantoux test is a two-step process, therefore patients are required to attend clinic twice for the test to be completed.

“Where some or most patients fall under ECM, services will need to ensure that this is being delivered. Case managers may require a reduced caseload to ensure needs are met. And TB services will need to develop protocols to fit with NICE guidelines so they can be used locally,” Ms Kaur adds.

Finding active cases

The NICE recommendations call on clinicians to find active cases of TB in the communities most at risk. How will nurses manage this? Ms Kaur says: “Nurses will need to develop contacts with community groups, and identify areas where awareness is required. One way of doing this is by cohort review, which is already taking place nationally.

“TB Services should also develop awareness and education among various healthcare settings, for example among GPs and school nurses. The uptake of BCG vaccination should also be included, as TB Services can increase awareness within primary care and secondary care for BCG criteria – this will ensure pathways are known among all appropriate settings.”

Steve Bradley, aged 53, from Waltham Abbey in Essex can no longer work after contracting TB in 2008. His experience of TB diagnosis and treatment was “disastrous” and he is urging all clinicians to take these NICE guidelines seriously. He tells Prescriber: “So many people, including health professionals, think TB has been consigned to the history books, but it’s a horrific disease that can affect anyone. I was seriously ill with a cough, an enlarged gland on the side of my neck and terrible night sweats, which went undiagnosed for months.

“Eventually after 10 days in A&E in Romford, not in isolation, I was diagnosed with TB and two years of trauma and stress followed. The standard toxic treatment I had for TB can have very serious side-effects, which neither I nor my partner were warned about and – unluckily for me – I had all of them. One of them took all my white cells away so I had to have an emergency blood transfusion, another damaged my optic nerve and within two weeks I was registered blind, and another caused me to lose the feeling in my hands and below my knees.

“I know that treatment and care for TB patients is a lot better now, but we still have more TB cases in England than the whole of the USA, which is embarrassing. I’m just a regular, middle-aged man and I got TB, I think, commuting into London on the Tube. It can happen to anyone. That’s why all GPs need to know the basics about TB as well as pharmacists, who are often the first port of call for patients with symptoms.

“It’s good that NICE has revisited its guidance, but that needs to be accompanied by funding to support a comprehensive education programme for health professionals, further research into TB and a peer support programme for people with TB.”

Somerset GP Clare Nettleton says: “TB still carries a high risk of morbidity and mortality not least because the population most at risk is those suffering from homelessness, drug abuse and general poverty – the groups who are often least likely to present early and certainly may find it difficult to engage with health

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professionals and tolerate a protracted period of treatment. Incomplete and poorly targeted treatment is a high risk for ongoing illness and drug-resistant strains of TB.

“The NICE guideline highlights the need for investing in health practitioner education with regard to both the prevention and early detection and treatment of TB. Due to the often socially complex cases and the need for targeted treatment, continued patient support can only be achieved through a multidisciplinary structure involving voluntary services as well as the NHS.

“Despite its association with years gone by and ancient sanitoria, TB remains a real problem in England, affecting the indigenous population as well as migrants. It must remain part of the differential diagnosis when met with a patient suffering from weight loss, pyrexia of unknown origin (PUO) and malaise. Hopefully these new guidelines will bring the recognition of this disease back into the forefront of our minds,” she adds.

Effective delivery
Mike Mandelbaum, chief executive of the charity TB Alert, comments: “Given last year’s launch of the first national TB strategy, the timing of this guidance is useful in updating and amalgamating previous sets of guidance. This guidance stresses the need for improved awareness and health education, which is critical given that most patients with infectious forms of TB wait over 70 days between the onset of symptoms and the start of treatment.

“To be most effective, locally commissioned plans need to involve voluntary sector and other nonstatutory organisations, which can most effectively access the diverse range of communities at highest risk of TB.

“This guidance does not include the recommended nurse/patient ratios that were in previous guidance, so each service will need to assess its own staffing needs. With a major new programme for treating latent TB among new entrants having just been launched, it’s especially important that the additional workload this generates does not jeopardise the care of patients with active TB.”

References

Declaration of interests
None to declare.
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POEMs

Antithrombotic after GI bleed associated with decreased mortality in atrial fibrillation

Clinical question:
What are the benefits and risks of restarting antithrombotic treatment for patients with atrial fibrillation who experience a gastrointestinal (GI) bleed?

Bottom line:
In this cohort study, restarting antithrombotic treatment following a GI bleed in patients with atrial fibrillation was associated with decreased overall mortality over the next two years and a decrease in thromboembolisms, especially when using an oral anticoagulant. However, this treatment was also associated with an increase in major bleeding events. Recurrent GI bleeding was not higher among patients who restarted an antithrombotic treatment regimen than among those who did not resume treatment. (LOE = 2b)

Reference:

Study design: Cohort (prospective).

Synopsis:
These Danish researchers used a national database to follow the course of 4602 patients, average age 78 years, discharged after hospitalisation for GI bleeding associated with antithrombotic treatment for atrial fibrillation. At the time of the GI bleed, approximately half the patients were treated with an antiplatelet medication, 24 per cent were treated with an oral anticoagulant, and the rest were treated with a combination of two or three antithrombotics. The authors excluded patients who experienced bleeding, thrombosis, or who died within 90 days of discharge. After two years, mortality was high (40 per cent) in this high-risk group, as was thromboembolism and major bleeding, including recurrent GI bleeding. Approximately one-quarter of the patients did not have treatment restarted following the GI bleed. Restarting treatment was associated with decreased all-cause mortality (hazard ratio [HR] = 0.39; 95% CI 0.34–0.46) with the greatest benefit seen in patients receiving an oral anticoagulant (warfarin, dabigatran or rivaroxaban), either alone or in combination with other antithrombotics. The risk of thromboembolism was also lower with treatment. Major bleeding was more likely with restarting an oral anticoagulant alone (HR = 1.37; 1.06–1.77), though there was no difference in recurrent GI bleeding rates between the patients who restarted antithrombotic treatment and those who did not.