DOT for all patients with smear-positive pulmonary TB in London?

Supervised drug taking is frequently seen as the answer to rising levels of tuberculosis. Djuretic et al advocate directly observed therapy (DOT) for all patients with smear-positive pulmonary tuberculosis in London. At first sight the experience of instituting DOT in New York City appears especially impressive, with a 21% reduction in case rates and 39% decrease in drug resistant isolates. However, these reductions occurred at the same time as close attention was paid to drug regimens, the use of drug combinations, increased staffing levels, and the payment of incentives combined with the threat of imprisonment for persistent defaulters. The cost was phenomenal.

The proportion of cases of tuberculosis in London that have recently been transmitted was estimated at 14.4%. This is very low compared with 48% in New York City. The decreased incidence of tuberculosis in New York City was achieved entirely within groups where recent transmission was suspected. Over the same time period there was a 22% increased incidence among foreign born persons. Such people have contributed most to the recent increased incidence of tuberculosis in London.

Randomised controlled trials have shown that direct observation either by a healthcare worker or family member does not improve treatment completion rates when compared with self-administered treatment. Furthermore, even with supervised drug taking, patients can still fail to complete treatment. In one study in Denver, 18% missed two consecutive weeks of treatment, continued treatment for more than 30 days beyond the expected date of completion because of defaulting, or were imprisoned as a threat to public health.

In a review of randomised controlled trials to promote adherence, monetary incentives, home visits and attentive staff were important elements of successful programmes.

The situation in London clearly requires action. The data, however, suggest different approaches to those taken in New York City (table 1). New entrant screening deserves greater attention, and a heightened awareness of tuberculosis in primary care could complement the current system. The tuberculin skin test has a poor specificity and sensitivity and we should investigate newer methods of diagnosing those patients with latent tuberculosis who have a high probability of progressing to disease.

We should maintain our vigilance to prevent active transmission by treating those with infectious, smear positive pulmonary tuberculosis rapidly and effectively. This can be complemented with well targeted contact tracing. Selective DOT is a part of this programme, but we would emphasise that each patient should be treated as an individual and treatment should be tailored to his or her needs.

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Table 1: Epidemiology and treatment of TB in London (UK) and New York (USA)

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Incidence of TB</td>
<td>35/100 000</td>
<td>46 per 100/000</td>
</tr>
<tr>
<td></td>
<td>[Newham]</td>
<td>[Central]</td>
</tr>
<tr>
<td>Cost of TB services</td>
<td>£8 million‡</td>
<td>£34.2 million†‡</td>
</tr>
<tr>
<td></td>
<td>(£110/100 000)</td>
<td>(£342/100 000)</td>
</tr>
<tr>
<td>DOT strategy</td>
<td>Selective</td>
<td>Universal</td>
</tr>
<tr>
<td>Completed treatment</td>
<td>87%‡</td>
<td>&lt;50%</td>
</tr>
<tr>
<td>Relapsed TB</td>
<td>6–8%‡</td>
<td>51%</td>
</tr>
<tr>
<td>HIV co-infection</td>
<td>14%‡</td>
<td>38%</td>
</tr>
<tr>
<td>Multidrug resistant TB</td>
<td>1.7%</td>
<td>19%</td>
</tr>
<tr>
<td>Recent transmission</td>
<td>14.4%§</td>
<td>48%</td>
</tr>
<tr>
<td>[estimate from molecular epidemiology]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cause of increase in TB</td>
<td>New entrants (foreign born), elderly women, HIV (11%)§</td>
<td>HIV, nosocomial, homeless, foreign born</td>
</tr>
</tbody>
</table>

*Estimated as £6/6 per TB patient and £6/0 per MDRTB treated.
‡Actually around 30% were receiving DOT.
§Unpublished data, North East London TB Network, London TB Group and King’s College Hospital, South East London.
§§38% of all, 72% of those tested.

References

Where’s the evidence? Debates in modern medicine


Don’t be put off by the title. This is not a textbook on evidence based medicine (EBM) and statistics but about issues that evidence based health raises when patients present with problems that can be difficult to manage.

It is a collection of very short essays that were first published in the journal Paediatric and Perinatal Epidemiology. They were written between 1987 and 1997, well before establishment of EBM into the health culture, and were published under a nom de plume: Makcontent! It is a pleasure to read these as Silverman gives his poignant views that are richly peppered with quotes and anecdotes. In addition there are additional views on the original essay added to reflect the authors changing views on the subject—and even commentaries from those who disagree with him!

These essays raise ethical issues such as what to do when a patient says “do something” for their intractable pain and no effective treatment is available. How do we deal with uncertainty? The value and implementation of randomised trials for patient care is also touched upon such as the recruitment of participants; value of placebo controlled trials and generalisability of the results. All of these essays are illustrated with examples taken from the author’s specialty of intensive neonatal care though the principles are applicable to all us all frontline clinicians. Indeed they are also relevant to health managers and society at large.

I am not surprised that this book won the 1999 BMA Medical Book Award and recommend it to you all.

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Spatial epidemiology: methods and applications


I came to review this book by chance, having studied spatial epidemiology some years ago. Reviewing the book was an opportunity to update myself in this field, and see what had changed and what was new.

The book covers a wide range of material, including a description of data sources and their limitations, and the theoretical basis for the statistical methods that can be used. The second half of the book is divided between two types of application: disease mapping and clustering studies, and studies of exposure to environmental health risks. There are detailed descriptions of the use of statistical methods and models, and examples, some graphical, of the results of the analyses. The authors take a historical perspective, so that throughout the book there is a sense of how the methods have developed and of the direction of future work.

Some sections of the book would be accessible to a wide readership—I found myself more comfortable with the material on data sources and the chapters on disease mapping, where the results, if not the methods, are intuitively easy to understand. Many of the chapters will only be of value to specialists in this field, in part because of the statistical methods used, and in part because the methods are comparatively new and interpretation of the results complex. For the less expert reader, the two sections on applications would benefit from a concluding chapter, to help the reader fit together the different methods that have been described.

What do I conclude about the state of spatial epidemiology? Limitations of data sources remain a constraint. The trend for closer working between people from different disciplines has continued, although the jumps within in the book demonstrate that there is more progress to be made here. The development of new statistical techniques and the increase in computing power is apparent, although there is some way to go in the routine application of these techniques.

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Physical activity and psychological well-being


There exists good evidence suggesting that physical activity reduces morbidity and mortality for coronary heart disease, hypertension, obesity, diabetes, and osteoporosis. Together with smoking cessation, sustaining a physically active life is currently seen as the other most beneficial aspect of lifestyle in terms of improvements in quantity and quality of life. Moreover, besides the advantages for preventing the five aforementioned conditions, a substantial emerging body of evidence is relating physical activity and exercise with a better psychological health.

In this context, the book by Biddle et al provides an updated review of the studies that have assessed the relation between physical activity and psychological well being. The book is very well planned, structured, and organised. After an introductory chapter, the following outcomes are considered in separated chapters: anxiety, stress (Taylor), depression (Mutrie), mood (Biddle), self esteem (Fox), and cognitive performance (Bouchter). Szabo deals in the seventh chapter with potential psychological damages of exercise. The last chapter is devoted to synthesise the present state of research and to open avenues for practice and further research.

The review of each outcome includes well presented tables with a narrative description of relevant studies. The Hill’s criteria of causality are elegantly applied to make the case for a protective role of exercise against depression. Plausibility reasons are always considered. Each chapter is ended with two synthetic series of remarks (what we know?, what we need to know?).

The overview highlights that there is sufficient evidence to promote physical activity for increasing the psychological wellbeing of the population. It is true that physical activity should be promoted regardless of its psychological effects because of the associated physical health benefits, but a new argument makes the case stronger.

Moreover, some of the insights provided by the book regarding improvements in cognitive function have been recently reinforced by new data showing a protection against dementia for those more physically active.1

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Reference