Treating tuberculosis in low-resource settings: practice pragmatically

Xiaohui Sun ,[1] Najib M Rahman,[2] Abdel Douiri[3,4,5]

Tuberculosis (TB) remains a long-standing life-threatening contagious disease and claimed approximately 1.5 million lives worldwide in 2018. Regional variations occur extensively with polarised incidence rates between low and high TB burden countries.[1] TB is a social disease in partnership with poverty. TB burden fluctuates with the rises and falls of socioeconomic development despite the advancements in healthcare.[2] Poverty-related components such as poor living conditions and malnutrition, which do not merely increase individual's susceptibility to infection, but affect healthcare expenditure and loss of income associated with TB infection amplify the effect of poverty on TB treatment and prevention. Therefore, combating TB contributes to reducing impoverishment, meanwhile fighting impoverishment assists TB control efforts especially in restricted resource settings.[3]

A pragmatic randomised trial conducted by Cohen *et al* in Malawi has evaluated a novel biosocial model to deliver effective TB in the homecare setting.[4] This study assessed long-term daily injection services for the initial treatment phase of recurrent or multidrug-resistant TB (MDR-TB), with duration of receiving injectable agents ranging from 2 to 8 months. Traditionally, intramuscular injection treatment requires hospitalisation, which is costly and increases the risk of hospital-acquired infections for such prolonged treatment. However, injectable agents could potentially be administrated by trained lay care givers instead, if no additional medical attention was needed. The trial factored in several essential elements that would tackle the barriers for accessing effective TB treatment. First, decentralising healthcare services would enable better access of effective treatment while overcoming geographical and socioeconomical barriers, further reducing the risk of 'catastrophic cost'.[5] In this study, catastrophic cost was defined according to WHO approach as total costs incurred by patients' household that exceed 20% of their annual income. Risk reduction of this cost was observed irrespective of wealth quartile, gender or HIV status. Second, taking regional epidemiological feature into consideration will contribute to harnessing healthcare resources for propoor healthcare delivery. This study was conducted in a region with prevalent TB and HIV coinfections with more than 80% of participants were reported as HIV positive. The study aligned interventions for TB treatment with attempts to address HIV and AIDS coinfection in a low-resource settings, which coherently integrating social protection context with biomedical intervention.[6]

Talking the talk is easier than walking the walk. The authors should be congratulated on completing such a large study in challenging circumstances. Although the trial (designed as non-inferiority) did not complete recruitment, and was therefore somewhat underpowered to declare non-inferiority, the results do provide reassuring evidence of a pragmatic and largely safe approach in resource-limited settings. The key of such solutions relies on training lay-care givers to facilitate intramuscular injections to patients in their own homes. The study underlines the importance of adopting interventions tailored to regional circumstances, allowing delivery of consistent yet quality care to recurrent or MDR-TB patients without increasing the risk of adverse events. This presents a novel opportunity for sustainable home-based management of patients in areas where the total expenditure on health is low, but further operational data to support the findings of this study are still needed.

[1]School of Population Health & Environmental Science, King's College London, London, United Kingdom
[2]Oxford Respiratory Trials Unit, University of Oxford, Oxford, UK
[3]School of Population Health & Environmental Sciences, King's College London, London, United Kingdom
[4]National Institute for Health Research Applied Research Collaboration (ARC) South London, Guy's and St Thomas' NHS Foundation Trust and King's College London, London, United Kingdom
[5]National Institute for Health Research Biomedical Research Centre, Guy's and St Thomas' NHS Foundation Trust and King's College London, London, United Kingdom

Correspondence to Dr Abdel Douiri, School of Population Health & Environmental Sciences, Kings College London, London SE1 1UL, UK; abdel.douiri@kcl.ac.uk

Contributors All authors (XS, NMR and AD) contributed equally.

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ORCID iD
Xiaohui Sun http://orcid.org/0000-0003-1576-4903

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