

STATEMENT

Implications of the 2015 World Health Organization isoniazid preventive therapy recommendations on tuberculosis prevention efforts in Namibia

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The World Health Organization recently released guidelines recommending 36-month use of isoniazid preventive therapy in adults and adolescents living with HIV in resource-limited settings. Namibia continues to grapple with one of the highest incidences of tuberculosis (TB) worldwide. Implementation of these guidelines requires considerations of TB epidemiology, health infrastructure, programmatic priorities and patient adherence. This article explores the challenges Namibia currently faces in its fight against TB and the implications of the new guidelines on Namibian TB prevention efforts.

S Afr Med J 2016;106(8):775-776. DOI:10.7196/SAMJ.2016.v106i8.10787

Isoniazid preventive therapy (IPT) is a key strategy recommended by the World Health Organization (WHO) for the prevention of tuberculosis (TB) in patients infected with HIV. The WHO recently updated its guidelines and now recommends IPT for a duration of at least 36 months for adults and adolescents living with HIV in resource-limited settings.^[1] The WHO notes that the implementation of continuous IPT requires considerations of: (i) TB epidemiology; (ii) health infrastructure; (iii) programmatic priorities; and (iv) patient adherence. Individuals with HIV are at an increased risk of developing active TB infection, with studies^[2] showing that the incidence of TB doubles within the first year of HIV seroconversion and increases fourfold after 2 years. This article discusses some of the challenges Namibia currently faces in its ongoing fight against TB and the implications of the new WHO IPT recommendations.

Discussion

Namibia, an upper-middle-income sub-Saharan African country, continues to grapple with what are among the highest prevalences of both HIV and TB worldwide. This, coupled with a sparsely distributed population, presents a great challenge in terms of healthcare delivery.

The incidence of TB in Namibia remains one of the highest in the world, with a case notification rate of 589 cases per 100 000 population.^[3] In its continued effort to attain its vision of a Namibia where TB is no longer a health threat,^[4] the Ministry of Health and Social Services (MoHSS) works very closely with both primary healthcare providers and public health services at national, regional and district levels to ensure the success of the WHO directly observed therapy, short-course (DOTS) strategy in the treatment of TB patients, and to create public awareness of practical interventions for the prevention of TB, especially in people living with HIV. According to the 2012/2013^[5] MoHSS report, the TB and HIV co-infection rate at the time stood at 47%.

A 2014 - 2015 MoHSS report^[6] indicates that there has been a small decline in case numbers of TB, suggesting a declining incidence of the disease burden in the country. Significant improvements in TB/HIV service coverage are exemplified by: (i) improved HIV testing for TB patients, currently at 92% compared with 76% in 2010; and (ii) improved coverage of antiretroviral therapy (ART) among TB/HIV patients, up to 84% from 43% in 2010.

The overall prevalence of HIV in the country is currently estimated at 13.1% in the general population although there is wide variation in different regions. Despite government efforts to improve ART coverage, Namibia remains one of the top ten countries in the world worst affected by HIV, which in turn continues to fuel the rise of TB in the country. Over 230 000 people aged >15 years are living with HIV.^[7] The number of people living with HIV is expected to increase as ART coverage increases, reducing the numbers of AIDS-related deaths.

Health infrastructure and cost implications

The structure of the health sector in Namibia aims to decentralise health services as much as possible while integrating public health strategies in service delivery. The continued collaboration of the Namibia TB Leprosy Program with the National Institute of Pathology and the Division of Pharmaceutical Services has demonstrated outstanding success in ensuring the timely provision of quality laboratory services, as well as uninterrupted supply of TB drugs to the TB treatment centres in both the capital city and remote clinics in the rural areas.

However, in health facilities in the peripheral regions, including the border towns, services are still grossly inadequate, especially in terms of human resources. Studies^[8] in the Omaheke region show that more service-related factors than community-related factors influenced the successful implementation of community-based TB care. According to the MoHSS,^[6] the TB delivery programme in this region was inadequate, with a 51.4% defaulter rate.

In its health budget planning, the government of Namibia needs to consider the projected cost implications of adopting the new 36-month IPT strategy as opposed to a 6-month IPT strategy. Smith *et al.*^[9] examined the cost of implementation of IPT in Botswana, where ART is readily available, and found that a 36-month IPT strategy for HIV-positive individuals was more cost-effective for reducing both TB and death than individual costs of: (i) providing IPT without tuberculin skin testing (TST); (ii) providing only 6 months of IPT; or (iii) expanding ART eligibility without IPT. Gupta *et al.*^[10] also showed that models providing ART coverage to 90%, TB infection control and 36-month IPT strategy averted most

TB cases and were more cost-effective than models that provided less ART coverage.

Possible adverse events and the balance between benefit and harm

The key outcome of interest in the development of the new recommendations was progression to active TB. Other outcomes of interest include adverse effects and adherence. In the formulation of the new guidelines, a meta-analysis of adverse events was not performed because of the heterogeneity of the definition of side-effects by the different studies that were considered by the WHO. The study by Swaminathan *et al.*^[11] did not report information on adherence, while Martinson *et al.*'s^[12] recorded adherence of 60.4% in the 36-month IPT group compared with 83.8% in the 6-month IPT group. There is also currently insufficient evidence to indicate whether continuous IPT use increases the risk of development of isoniazid resistance. According to Swaminathan *et al.*^[11] and Samandari *et al.*,^[13] the observed proportion of resistance cases among TB cases was similar to the expected rate. However, resistance patterns are known to vary vastly from region to region.

Conclusion

Implementation of the new IPT strategy in HIV-positive patients would be likely to record success alongside ART strategies, as patients can be counselled for drug adherence and monitored on therapy at the same time. However, this will require a renewed commitment from the government of Namibia and its collaborators to implement

the intervention, finance the additional costs associated with drug supply and increase the human resources capacity.

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Accepted 30 May 2016.