



NICD MEDIA RELEASE

South Africa spearheading the defeat of drug resistant TB

Scaling up the latest medicines for drug resistant TB, lessons from the South African experience and key issues from a recent study.

Johannesburg, 12 January 2018. TB continues to be a global health challenge with more than 10 million people each year contracting TB. Despite this challenge the medicines used to treat TB, until very recently are more than 40 years old. The good news, however, is that we recently have new medicines, including bedaquiline. This is good news for patients with drug resistant TB – which has been very difficult to treat with the old medicines.

South Africa introduced bedaquiline in March 2013 and to date, 9 650 drug resistant TB patients have been put onto a bedaquiline based regimen. Important improvements in outcomes among extensively resistant TB have been observed with the treatment success among these cases doubling while the mortality was halved between 2012 and 2015 cohorts.

Given that we are not able to produce new TB medicines easily, it is very important for us to protect them, because if we don't patients will soon become resistant to them and they won't work! One of the ways of protecting new medicines is to ensure that they are given in the right combination by doctors, the other is to ensure that patients take their treatment until they are cured!

As bedaquiline is a very new medicine, information about issues like resistance is limited. Robust criteria to define resistance to the new medicine has therefore not been well established and this hampers the early detection of resistance that is critical to ensure the longevity of this new anti-TB drug as well as to enable clinicians to institute control measures.

A new South African study published in the journal *EBioMedicine* by researchers at the National Institute for Communicable Diseases, Centre for Tuberculosis, in collaboration with the National Department of Health, has been successful in defining microbiological criteria to detect drug resistance to bedaquiline using international standards. The work has been

important enough to be included in new policy guidance to be released by the World Health Organization during 2018 and will be used to guide laboratories globally.

Like many other medicines, widespread use of bedaquiline will likely lead to resistance which means that monitoring for the emergence of resistance is important. In this study genetic markers of resistance to bedaquiline was shown to occur in a very limited number of patients (<1%). This means that we need to continuously monitor resistance to this newly introduced medicine to ensure that we both protect it and where patients fail treatment we change their treatment regimen timeously.

The results of the study therefore emphasise the importance of effective combination therapies and adherence to treatment by patients. The need for patients to be supported when they are on long term treatment, and the importance of eliminating stigma – which is often the reason why patients do not present early for TB diagnosis and treatment as well as being one of the reasons for non-adherence to treatment are also important.

Non-adherence or poor adherence leads to drug selection and drug resistance which worsens the outcomes of patients despite the availability of the best available treatment being provided in South Africa. This has a further risk to the patient's close contacts from being infected with resistant strains of TB. Treatment for drug resistant TB is often prolonged (approximately 2 years), thus family and community support is essential to ensure drug resistant TB can be effectively managed. A new shorter regimen has been introduced during 2017 which is 9 months long, with an expectation that treatment adherence with this shorter duration will improve and more patients with drug resistant TB will be cured.

The study by Ismail and colleagues at the National Institute of Communicable Diseases published in the journal *EBioMedicine* is an important one with global implications, and opens the way for further research into this new area. Within the South African context, improvements have been achieved in the management of drug resistant TB and the findings of the study provide evidence to aid in securing the successes achieved thus far.

Read the article: <https://www.sciencedirect.com/science/article/pii/S2352396418300057>

Ismail, N.A., et al., Defining Bedaquiline Susceptibility, Resistance, Cross-Resistance and Associated Genetic Determinants: A Retrospective Cohort Stud..., *EBioMedicine* (2018), <https://doi.org/10.1016/j.ebiom.2018.01.005>END

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