NCT
Neumología y Cirugía de Tórax
Vol. 81 - No. 4 / October-December 2022
Editorial
doi: 10.35366/112949

New treatments for rifampin resistant tuberculosis. Safe and effective?

Nuevos tratamientos para la tuberculosis resistente a rifampicina. ¿Seguros y eficaces?

Miguel Ángel Salazar-Lezama*

*Instituto Nacional de Enfermedades Respiratorias Ismael Cosío Villegas. Mexico City, Mexico.

Due to the impact of the COVID-19 pandemic, the World Health Organization (WHO) predicts a global increase, in 2022-2023, of half a million cases annually of rifampicin-resistant tuberculosis (RRTB/MDR).[1] Added to the above, even before the pandemic, only one in three patients has received treatment,[2] in addition, with a very low cure rate. The regimens used to treat RRTB/MDR, traditionally consisted of many oral drugs, expensive, toxic and of little activity, which motivated the implementation of a multi-drug regimen; to these was added an injectable agent, at least for six months, which produced very serious side effects, such as irreversible hearing loss or renal failure, causing many dropouts.

With the meta-analysis published by the MDR-TB analysis collaborative group, headed by Dr. Menzies, where they reported that the injectable agents proved not to have the efficacy that was believed. In contrast, in the study, both third-generation quinolones, linezolid, clofazimine and carbapenems were shown to have greater effectiveness in treatments;[3] this had already been reported also by Palomino and Martín.[4] There are three new oral drugs with high effectiveness for the treatment of RRTB/MDR: bedaquiline,[5] delamanid[6] and pretomanid.[7] With the advent of these new drugs, different trials of short, safe and effective treatments have been implemented. These regimens include a new six-month treatment based on the combination of bedaquiline, pretomanid and linezolid, in combination with moxifloxacin (BPaLM), or without the latter (BPaL), which were highly recommended by the WHO[8] and which appeared in important publications.[9-11]

Laniado-Laborín *et al.*[12] publish in this issue the results of the treatment for RRRT/MDR with a shortened schedule in 26 consecutive patients with drugs suggested by the WHO[13] of groups A and B to demonstrate their efficacy and safety; the conversion to culture was 1.42 ± 0.82 months (six weeks) and the conversion time of bacilloscopy was 1.75 ± 0.95 months (seven weeks), much higher than the previously used schemes where an injectable and drugs of poor activity were integrated, and which lasted up to more than 18 months. The activity of the new drugs, with significant bactericidal and sterilizing activity, has given hope of curing the greatest number of patients with RRTB/MDR. A major drawback is adverse reactions, but they can be managed without the scheme losing its effectiveness. However, the follow-up must be very punctual to be able to identify them; and the doctor must have experience to identify them. Unfortunately, there are not many specialists who are interested in treating this situation, so I twill be very important to train first contact doctors so that these safe and effective schemes offer a cure for this disease and prevent cases from continuing to increase.

Correspondence:
Miguel Ángel Salazar-Lezama, MD
Instituto Nacional de Enfermedades Respiratorias
Ismael Cosío Villegas. Mexico City, Mexico.
E-mail: miguelsalazar02@gmail.com

How to cite: Salazar-Lezama MÁ. New treatments for rifampin resistant tuberculosis. Safe and effective? Neumol Cir Torax. 2022; 81 (4):219-220. https://dx.doi.org/10.35366/112949

REFERENCES

1. World Health Organization. Global tuberculosis report, 2021. Geneva, Switzerland: WHO; 2021. Available in: https://www.who.int/publications/i/item/9789240037021
2. World Health Organization. Global tuberculosis report, 2022. Geneva, Switzerland: WHO; 2022. Licence: CC BY-NC-SA 3.0 IGO.
3. The Collaborative Group for the Meta-Analysis of Individual Patient data in MDR-TB treatment–2017; Ahmad N, Ahuja SD, Akkerman

OW, AIffenaar JC, Anderson LF, Baghaei P, *et al*. Treatment correlates of successful outcomes in pulmonary multidrug-resistant tuberculosis: an individual patient data meta-analysis. Lancet. 2018;392(10150):821-834. doi: 10.1016/S0140-6736(18)31644-1.

4. Palomino JC, Martín A. Is repositioning of drugs a viable alternative in the treatment of tuberculosis? J Antimicrob Chemother. 2013;68(2):275-283. doi: 10.1093/jac/dks405.
5. Diacon AH, Pym A, Grobusch M, Patientia R, Rustomjee R, Page-Shipp L, *et al*. The diarylquinoline TMC207 for multidrug-resistant tuberculosis. N Engl J Med. 2009;360(23):2397-2405. doi: 10.1056/nejmoa0808427.
6. Gler MT, Skripconoka V, Sanchez-Garavito E, Xiao H, Cabrera-Rivero JL, Vargas-Vasquez DE, *et al*. Delamanid for multidrug-resistant pulmonary tuberculosis. N Engl J Med. 2012;366(23):2151-2160. doi: 10.1056/nejmoa1112433.
7. Dawson R, Diacon AH, Everitt D, van Niekerk C, Donald PR, Burger DA, *et al*. Efficiency and safety of the combination of moxifloxacin, pretomanid (PA-824), and pyrazinamide during the first 8 weeks of antituberculosis treatment: a phase 2b, open-label, partly randomised trial in patients with drug-susceptible or drug-resistant pulmonary tuberculosis. Lancet. 2015;385(9979):1738-1747. doi: 10.1016/s0140-6736(14)62002-x.
8. WHO. Rapid communication: key changes to the treatment of drug-resistant tuberculosis. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.
9. Berry C, du Cros P, Fielding K, Gajewski S, Kazounis E, McHugh TD, *et al*. TB PRACTECAL: study protocol for a randomised, controlled, open label, phase II–III trial to evaluate the safety and efficacy of regimens containing bedaquiline and pretomanid for the treatment of adult patients with pulmonary multidrug resistant tuberculosis. Trials. 2022;23(1):484. doi: 10.1186/s13063-022-06331-8.
10. Conradie F, Diacon AH, Ngubane N, Howell P, Everitt D, Crook AM, *et al*. Treatment of highly drug-resistant pulmonary tuberculosis. N Engl J Med. 2020;382(10):893-902. doi: 10.1056/nejmoa1901814.
11. Conradie F, Bagdasaryan TR, Borisov S, Howell P, Mikiashvili L, Ngubane N, *et al*. Bedaquiline–pretomanid–linezolid regimens for drug-resistant tuberculosis. N Engl J Med. 2022;387(9):810-823. doi: 10.1056/nejmoa2119430.
12. Laniado-Laborín R, Castro-Mazon G, Salcido-Gastelum J. Efficacy and safety of a new short regimen for treatment of tuberculosis resistant to rifampicin. A pilot study. Neumol Cir Torax. 2022;81(4):221-223.
13. WHO consolidated guidelines on tuberculosis. Module 4: treatment - drug-resistant tuberculosis treatment. Geneva: World Health Organization; 2020. Licence: CC BY-NC-SA 3.0 IGO.