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High rifampicin-resistant TB cure rates and prevention of severe ototoxicity after replacing the injectable by linezolid in early stage of hearing loss

Mahamadou Bassirou Souleymane [1], Alberto Piubello [1,2], Ibrahim Mamane Lawan[1], Souleymane Hassane-Harouna [3], Mourtala Mohamed Assao-Neino[4], Alphazazi Soumana[5], Zelika Hamidou-Harouna[6], Assiatou Gagara-Issoufou[7], Nimer Ortuño-Gutiérrez[2], Alberto Roggi[2], Valerie Schwoebel[8], Saïdou Mamadou[9], Lutgarde Lynen [10], Bouke De Jong [10], Armand Van Deun[11] and Tom Decroo [10,12]

Affiliations: [1]Damien Foundation, Niamey, Niger. [2]Damien Foundation, Brussels, Belgium. [3]Damien Foundation, Conakry, Guinea. [4]National Tuberculosis Programme, Niamey, Niger. [5]National Reference Center against Tuberculosis and respiratory disease, Niamey, Niger. [6]National Reference Laboratory of Tuberculosis, Niamey, Niger. [7]National Hospital Amirou Boubacar Diallo, Niamey, Niger. [8]Independent Consultant, Toulouse, France. [9]Abdou Moumouni University, Niamey, Niger. [10]Institute of Tropical Medicine, Antwerp, Belgium. [11]Independent Consultant, Leuven, Belgium. [12]Research Foundation Flanders, Brussels, Belgium.

Correspondence: Mahamadou Bassirou Souleymane, Damien Foundation Niger, B.P. 1065, Niamey, Niger. Email: bachirsoul@gmail.com

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In patients with rifampicin-resistant tuberculosis and hearing loss a short treatment regimen with linezolid replacing the injectable was highly effective, adverse events were manageable, and switching early to linezolid prevented severe hearing loss. https://bit.ly/2Oz0KMc

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ABSTRACT The short treatment regimen (STR) achieves a >80% cure in rifampicin-resistant tuberculosis (RR-TB) patients. However, ototoxicity induced by the injectable is a concern. This is the first study to evaluate the replacement of injectables by linezolid in patients with audiometry abnormalities at baseline or during the treatment.

We conducted a retrospective cohort study of all RR-TB patients started on the STR between 2016 and June, 2019, in Niger. Patients underwent audiometry every 2 months in 2016 and every month since 2017.

Of 195 patients, 16.9% (33 out of 195) received linezolid from the start (n=17), or switched from injectables to linezolid during treatment (n=16), based on audiometry abnormalities. In 2016, two patients developed severe ototoxicity despite switching to linezolid. Since 2017, no patient developed severe hearing loss or complete deafness. Severe haematological toxicity was observed in 18.1% (six out of 33) of patients on linezolid, none of which was life threatening. The use of linezolid was associated with severe but manageable adverse events (hazard ratio 8.9, 95% CI 2.5–31.5; p=0.001). A total of 90.9% (30 out of 33) of patients on a linezolid-containing STR were cured, and none experienced treatment failure. Three died, but not due to adverse events.

Baseline and monthly audiometry monitoring and using linezolid after detection of hearing abnormalities appears effective to prevent severe ototoxicity, while keeping high treatment success and manageable adverse events.