Tuberculosis in 2017: Searching for new solutions in the face of new challenges

6th TB Symposium – Ministry of Health of the Republic of Belarus, Republican Scientific and Practical Center for Pulmonology and Tuberculosis, and Médecins Sans Frontières

1-2 March, 2017, MINSK, BELARUS

Bedaquiline and delamanid
Experience of use in children

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Deputy Director of the Republican Tuberculosis Control Centre
93 per cent of the country are mountainous areas which hinders access to medical services, especially in winter

High level of migration deteriorates TB situation

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**MDR TB in Tajikistan**

**First resistance surveillance study** conducted in 2008—2009
- New cases with MDR TB: **16.8%**
- Retreatment cases with MDR TB: **61%**

**Second resistance surveillance study** was conducted in 2010-2011.
- New cases with MDR TB: **13%**
- Retreatment cases with MDR TB: **53.6%**

- MDR TB treatment success rate – **65%**
- 9% of people diagnosed with XDR TB have MDR TB
Paediatric MDR TB cohort (Ministry of Health and MSF) 2016

- Total DR TB: 46
- Bacteriological confirmation: 34
- RR: 26
- HR resistant: 21.7
- XDR TB confirmed: 10
- Contact with XDR TB: 7
- Contact res.: 4.3
- Clinical res.: 8

<table>
<thead>
<tr>
<th>Category</th>
<th>Absolute number</th>
<th>Percentage</th>
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<td>Clinical res.</td>
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Bedaquiline cohort
Bedaquiline cohort

- 5 children: 15 y.o. (1) and 16 y.o. (4) in 2016
- 4 (80%) with confirmed resistance to OFX and KM; 1 (20%) with confirmed resistance to OFX
- All children were treated with LZD, CFZ, CS in addition to BDQ; other drugs: PZA (80%), CM (80%); AMK (20%); PTO (60%); LFX (80%); PAS (20%); Imipenem (20%); Amox-CLV (40%)
- All clinical decisions are taken based on consilium’s opinion
Paediatric bedaquiline cohort

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<tr>
<th>ID</th>
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## Treatment regimens – paediatric cohort

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<th>Lfx</th>
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Side effects and interim results

- Good tolerability, no side effects and interruptions
- No cases of QTc prolongation >500 m/s
- All patients have excellent treatment results, 3 (60%) completed BDQ with negative culture results, clinical and radiological improvement, other 2 (40%) continue treatment, their cultures converted and show clinical improvement, preliminary success rate in 100% of patients
- BDQ was continued for > 24 weeks for 1 patient due to the lack of companion drugs in the regimen
## Bedaquiline treatment results

### Paediatric cohort

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<tr>
<th>ID</th>
<th>Baseline smear</th>
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<th>Baseline culture</th>
<th>Culture negativation</th>
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Programme overview

• BDQ was first imported by MSF in co-operation with the Ministry of Health
• Centralised storage and distribution of the drug
• Development of clinical protocols and trainings is led by the Ministry of Health together with multiple partners
• Paediatric TB guidelines were updated to include BDQ (also include DLM and shorter regimens)
• Coverage of additional tests and other investigations (e.g. ECG)
Difficulties

• Concerns about starting children on BDQ with the lack of dosing and safety data and no registered indication for use in teenagers
• Concerns about QTc prolongation in children
• Concerns about the storage and distribution of this ‘expensive’ drug
• Hospitalisation from the very beginning and longer; patients and families are reluctant about hospitalisation
• Difficult to procure informed consent as family members have reservations about new drugs
• Continuous clinical preparation and problem solving are needed
Delamanid cohort
Delamanid cohort

• 5 children in 2016: 6 y.o. (2), 7, 11 and 17 y.o.
• Indications for DLM: XDR TB with confirmed resistance to OFX and KM (1=25%) or contact with a TB patient with the same resistance pattern (3=75%)
• All patients were treated with LZD, CFZ and PZA in addition to DLM; other drugs: MFX(25%); LFX (50%); CM (50%); AMK (50%); PAS(25%); PTO (75%); CS (25%)
• All clinical decisions were taken based on consilium’s opinion
• Good tolerability so far, no cases of QTc prolongation
• Same difficulties as for BDQ
• 1 patient started taking DLM in 2017, he has XDR TB with additional resistance to 2nd line drugs; also taking BDQ, imipenem, LZD, CFZ, CS, AMK
Conclusion

- In 2016 in Tajikistan 9 children (31%) out of the 29 admitted were started on new TB drugs
- Children with MDR TB should have access to new TB drugs, BDQ and DLM
- Early experience of Tajikistan shows good tolerability of these drugs and excellent initial results
- Access to new drugs is urgently needed not only to children with resistance to 2nd line drugs but others too to overcome the problem of toxicity.