Baseline and Emergent Resistance to BPaL(M) in RR/MDR-TB in PLHIV: Findings from ADAP-TIV Trial

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BACKGROUND

The use of bedaquiline- and pretomanid-based regimens (BPaL/BPalM) for RR/MDR-TB among PLHIV has revolutionized care. However, baseline and emergent resistance threaten the long-term durability of these regimens. Data on phenotypic drug susceptibility testing for this agents is poorly defined.

STUDY AIMS

To assess baseline and treatment-emergent resistance to BPaL/BPaLM among PLHIV and RR/MDR-TB enrolled in the ADAP-TIV trial in KwaZulu-Natal, South Africa.

METHODS

ADAP-TIV trial (ongoing): prospective, adaptive, RCT assessing effectiveness of support strategies on clinical outcomes in PLHIV and RR/MDR-TB.

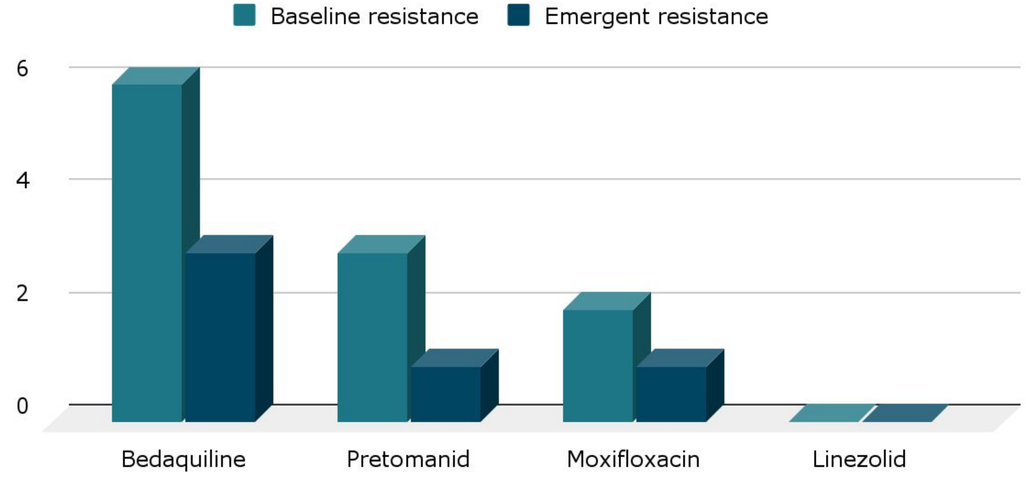
pDST was obtained for bedaquiline (S <0.25 µg/mL), pretomanid (S <0.25 µg/mL), linezolid (S <1 µg/mL) and moxifloxacin (S <2 µg/mL) via solid/liquid media.

Resistance was categorized as ***baseline*** (present on or before month 2 visit) or ***emergent*** (present only in subsequent visits).

Among PLHIV treated for RR/MDR-TB with BPaL(M), **baseline bedaquiline and pretomanid resistance was as high as 5.5%, and emergent resistance was as high as 2.7%** in a high-burden setting.

Baseline and emergent phenotypic resistance to BPaL(M) in PLHIV

n=129 culture (+) sputum samples



RESULTS

	Baseline resistance, n(%)	Emergent resistance, n(%)
Bedaquiline resistance	6 (5.5%)	3 (2.7%)
Pretomanid resistance	3 (2.7%)	1 (0.9%)
Dual Bedaquiline-Pretomanid resistance	1 (0.9%)	0 (0.0%)
Moxifloxacin resistance	2 (1.8%)	1 (0.9%)

CONCLUSIONS

Phenotypic resistance to bedaquiline and pretomanid is not uncommon among patients with RR-TB/HIV co-infection in this high burden setting. The emergence of resistance during treatment underscores the importance to preserve the durability of these regimens.

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