10.05 The role of Therapeutic Drug Monitoring (TDM) in the management of M. tuberculosis infections

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Background: Therapeutic Drug Monitoring (TDM) is an often underutilised tool in the treatment of TB. TDM can identify underdosing which is an easily correctible cause of treatment failure. The ATS/CDC advise considering its use whenever there is a poor response to treatment[1]

Methods: We examined patient records who had received TB treatment in St James's Hospital in the past two years. Eight patients demonstrating the utility of TDM were selected. All had low levels of one or more drugs in their regimens and all had their doses increased. A detailed chart review of these patients was performed, evaluating disease site, drug resistance, patient weight, initial dosing, serum drug levels and subsequent adjustments.

Results: The most common drug requiring increase after TDM was rifampicin (5 cases) followed by Isoniazid (3 cases) and Moxifloxacin (2 cases). Prior to TDM, all patients had been appropriately dosed by WHO guidelines.[2]

Conclusion: TDM is a valuable tool in maximising treatment outcomes in of TB. It should be considered in any case that a poor response to treatment exists, even if dosing has been in accordance with WHO guidelines.

Keywords: Therapeutic Drug Monitoring; TB

Disclosures: Nil to declare

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[1] Nahid P et al. Official American Thoracic Society/Centers for Disease Control and Prevention/Infectious Diseases Society of America Clinical Practice Guidelines: Treatment of Drug-Susceptible Tuberculosis [Internet]. Clinical Infectious Diseases Oxford University Press (OUP); 2016. p. e147–e195

[2] WHO operational handbook on tuberculosis Module 4: Treatment – drug-susceptible tuberculosis treatment. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.

	Site of disease	Resistance	Wt	Initial rx	Levels checked when	Results (Mg/L)	New Rx	Dosing in accordance with guidelines
A	Pulmonary + Pleural	Mono (Low level isoniazid)	53.35	EMB 800mg RIF 600mg INH 450mg PZA 1800 MXF 400	Week 4	RIF peak 2.7 (8-24)	Added 300mg RIF (900 total)	Yes
B	Pulmonary	-	67.5	RIF 600 INH 300	Week 8	RIF 6.0 (8-24)	Added 300mg RIF (900 total)	Yes
C	Pulmonary	MDR (isoniazid, ethambutol streptomycin)	73	RIF 600 PZA 2000 MXF 400	Week 8	RIF 6.9 (8-24) MXF 2.4 (3-5)	Increase RIF to 900, Increase MXF to 600	Yes
D	Ocular	-	79.1	RIF 720 INH 300 PZA 1800 EMB 1300	Week 12	INH 1.4 (3-5)	Increased INH to 450	Yes
E	Pulmonary	-	72.75	RIF 1020 INH 300 PZA 1800 EMB 1300	Week 5	INH 1.9 (3-5)	Increased INH to 450	Yes
F	Pulmonary	-	60.5	RIF 600 INH 300	Week 10	INH 2.7 (3-5)	Increased INH to 450	Yes
G	Mediastinal LN	Mono - Pyrazinamide	60.6	RIF 600 INH 300	Week 24	RIF 4.0 (8-24)	Increased RIF to 900	Yes
H	Pulmonary + Pleural	Mono - INH (high levels of resitance)	64	RIF 600 PZA 2g MXF 400mg	Week 7	RIF 7.8 MXF 2.0 (3-5)	Increased RIF to 900 Increased MXF to 600	Yes