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# Revised Definitions of Tuberculosis Resistance and Treatment Outcomes, France, 2006–2019

## Appendix

**Appendix Table 1.** Antituberculosis drugs, by treatment period, in 298 patients affected by multidrug-resistant tuberculosis France, 2006–2019*

| Drug | Treatment period† | | | p value |
|---|---|---|---|---|
| | Total, N = 298 | 2006–2010, N = 66 | 2011–2019, N = 232 | |
| Ethambutol | 133 (44.6) | 37 (62.1) | 96 (41.4) | 0.03 |
| Pyrazinamide | 163 (54.7) | 35 (53.0) | 128 (55.2) | NS |
| Fluoroquinolones | 218 (73.2) | 49 (74.2) | 169 (72.8) | NS |
| Levofloxacin | 56 (18.8) | 4 (6.1) | 52 (22.4) | 0.003 |
| Moxifloxacin 400 mg/day | 187 (62.8) | 46 (69.7) | 141 (60.8) | NS |
| Moxifloxacin 800 mg/day | 14 (4.7) | 0 | 14 (6) | 0.04 |
| Second-line injectable | 254 (85.2) | 64 (97.0) | 190 (81.9) | 0.001 |
| Amikacin | 244 (81.9) | 62 (93.9) | 182 (78.5) | 0.003 |
| Capreomycin | 12 (4.0) | 3 (4.6) | 9 (3.9) | NS |
| Ethionamide or prothionamide | 87 (29.2) | 29 (43.9) | 58 (25.0) | 0.003 |
| Cycloserine | 197 (66.1) | 28 (42.4) | 169 (72.8) | <0.001 |
| P-aminosalicylic acid | 163 (54.7) | 49 (74.2) | 114 (49.1) | <0.001 |
| Linezolid | 226 (75.8) | 28 (42.4) | 198 (85.3) | <0.001 |
| Meropenem or imipenem and amoxicillin/clavulanate | 43 (14.4) | 1 (1.5) | 42 (18.1) | <0.001 |
| Clofazimine | 126 (42.3) | 1 (1.5) | 125 (53.9) | <0.001 |
| Delamanid | 18 (6.0) | 0 | 18 (7.8) | 0.02 |
| Bedaquiline | 127 (42.6) | 0 | 127 (54.3) | <0.001 |

*Categorical variables are presented as no. (%). NS, not statistically significant.
†At treatment start.

**Appendix Table 2**. Multivariable Cox proportional hazard model for non-successful outcome in 298 patients affected by multidrug-resistant tuberculosis, France, 2006–2019*

| Characteristic | aHR (95% CI) | p value |
|---|---|---|
| TB resistance status | | |
| MDR | 1 (ref) | NA |
| Pre-XDR/XDR | 1.18 (0.64-2.19) | 0.59 |
| History of previous anti-TB treatment | | |
| No | 1 (ref) | NA |
| Yes | 2.03 (1.03-3.99) | 0.04 |
| Treatment adherence† | | |
| Good | 1 (ref) | NA |
| Poor | 3.57 (1.78-6.74) | <0.0001 |
| HIV co-infection | | |
| No | 1 (ref) | NA |
| Yes | 0.73 (0.28-1.89) | 0.51 |

*We conducted multivariable Cox regression analyses (multiple imputation for missing data, final model).
aHR, adjusted hazard ratio; MDR, multidrug resistant (susceptible to all fluoroquinolones); NS, not statistically significant; pre-XDR/XDR = pre–extensively drug resistant/extensively drug resistant, (resistant to ≥1 fluoroquinolone); ref, referent; NA, not applicable; TB, tuberculosis.
†Assessed by treating physician.

**Appendix Table 3.** Risk factors for nonsuccessful outcomes in 232 patients affected by multidrug-resistant tuberculosis, France, 2006–2019*

| Characteristic | aOR (95% CI) | p value |
|---|---|---|
| TB resistance status | | |
| MDR | 1 (ref) | NA |
| Pre-XDR/XDR | 0.68 (0.36-1.30) | 0.24 |
| History of previous anti-TB treatment | | |
| No | 1 (ref) | NA |
| Yes | 2.40 (1.32-4.34) | 0.004 |
| Treatment adherence§ | | |
| Good | 1 (ref) | NA |
| Poor | 1.18 (1.05-1.34) | 0.005 |
| HCV co-infection | | |
| No | 1 (ref) | NA |
| Yes | 0.46 (0.23-0.92) | 0.03 |
| HIV co-infection | | |
| No | 1 (ref) | NA |
| Yes | 1.38 (0.87-2.20) | 0.17 |
| Pulmonary tuberculosis | | |
| No | 1 (ref) | NA |
| Yes | 3.60 (0.92-13.99) | 0.07 |

*We conducted multivariable logistic regression with multiple imputation for missing data. Results are from the final model. aOR, adjusted odds ratio; MDR, multidrug resistant (susceptible to all fluoroquinolones); NS, not statistically significant; pre-XDR/XDR = pre–extensively drug resistant/extensively drug resistant, (resistant to ≥1 fluoroquinolone); ref, referent; NA, not applicable; TB, tuberculosis.
†Assessed by treating physician.

**Appendix Table 4.** Details of drugs causing serious adverse events in 298 patients affected by multidrug-resistant tuberculosis, France, 2006–2019*

| | | TB resistance status | | |
|---|---|---|---|---|
| Drug | Total, N = 298 | MDR, N = 205 | Pre-XDR/XDR, N = 93 | p value |
| Ethambutol | 7 (2.4) | 2 (1.0) | 5 (5.4) | 0.03 |
| Pyrazinamide | 17 (5.7) | 15 (7.3) | 2 (2.2) | NS |
| Fluoroquinolones | 34 (11.4) | 28 (13.7) | 6 (6.5) | 0.049 |
| Amikacin | 26 (8.7) | 16 (7.8) | 10 (10.8) | NS |
| Ethionamide or prothionamide | 9 (3.0) | 5 (2.4) | 4 (4.3) | NS |
| Cycloserine | 9 (3.0) | 7 (3.4) | 2 (2.2) | NS |
| P-aminosalicylic acid | 27 (9.1) | 12 (5.9) | 15 (16.1) | 0.005 |
| Linezolid | 98 (32.9) | 59 (28.8) | 39 (41.9) | 0.02 |
| Clofazimine | 8 (2.7) | 2 (1.0) | 6 (6.5) | 0.01 |
| Delamanid | 1 (0.3) | 0 | 1 (1.1) | NS |
| Bedaquiline | 6 (2.0) | 3 (1.5) | 3 (3.2) | NS |
| Others | 6 (2.0) | 2 (1.0) | 4 (4.3) | NS |

*Values are no.(%) unless otherwise stated. MDR, multidrug resistant (susceptible to all fluoroquinolones); NS, not statistically significant; pre-XDR/XDR, pre–extensively drug resistant/extensively drug resistant, (resistant to ≥1 fluoroquinolone); TB, tuberculosis.