RES-333

Epidemiology and antimicrobial profiling of extrapulmonary NTM at Srinagarind Hospital, Khon Kaen University (2020–2023)

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Abstract

Nontuberculous mycobacteria (NTM) cause infections, especially in immunocompromised hosts. Accurate species identification and susceptibility testing (AST) are essential to guide therapy. We retrospectively analyzed laboratory data (Jan-2020–Dec-2023) from Srinagarind Hospital to describe the prevalence and AST patterns of NTM from pulmonary and extrapulmonary samples.

M. intracellulare (29.0%) and *M. abscessus* complex (28.0%) were most frequent in pulmonary isolates; extrapulmonary samples were dominated by *M. abscessus* complex (40.3%) followed by *M. intracellulare* (26.0%). Age-related increases were seen in NTM-positive pulmonary samples. AST showed high susceptibility of *M. abscessus* complex to amikacin and clarithromycin (80–100%). These data support informed antimicrobial selection for NTM infections.

Objectives

1. Determine the species distribution of NTM from pulmonary vs. extrapulmonary specimens (2020–2023).
2. Describe antimicrobial susceptibility patterns by species and specimen type.
3. Explore age-related trends among NTM-positive pulmonary samples.

Methods

- Design: Retrospective analysis of Clinical Microbiology Laboratory records (Jan-2020–Dec-2023).
- Setting: Srinagarind Hospital, Khon Kaen University.
- Specimens: Pulmonary and extrapulmonary NTM isolates.
- Outcomes: Species frequency and AST results (key agents including amikacin and macrolides).
- Analysis: Descriptive comparison by species and specimen type; age trend for pulmonary positives.

Implications for practice

- Use local species/AST profiles to guide empirical and targeted treatment of suspected NTM disease.
- Prioritize amikacin for severe disease while confirming macrolide susceptibility, especially in M. intracellulare.
- Consider specimen type and patient age profile when interpreting positives and planning management.

เอกสารอ้างอิง

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Acknowledgements

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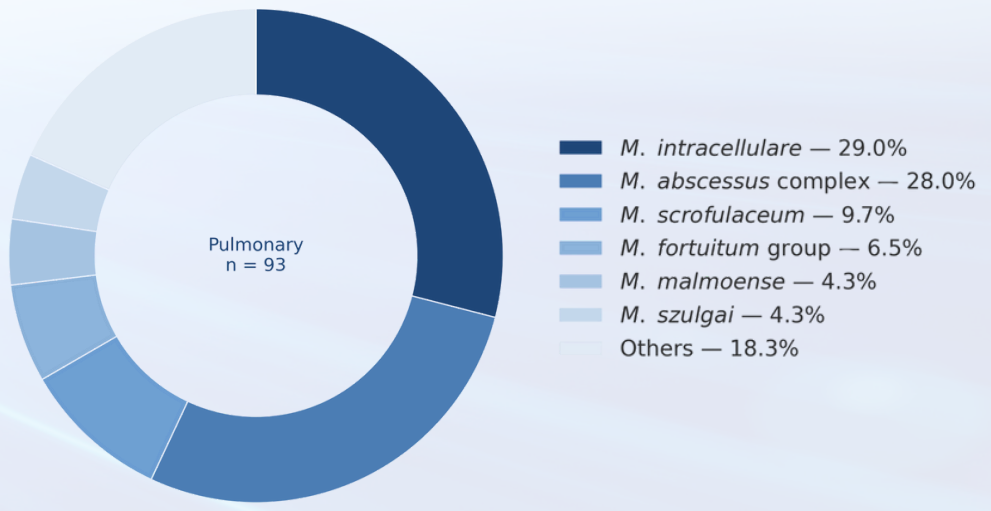
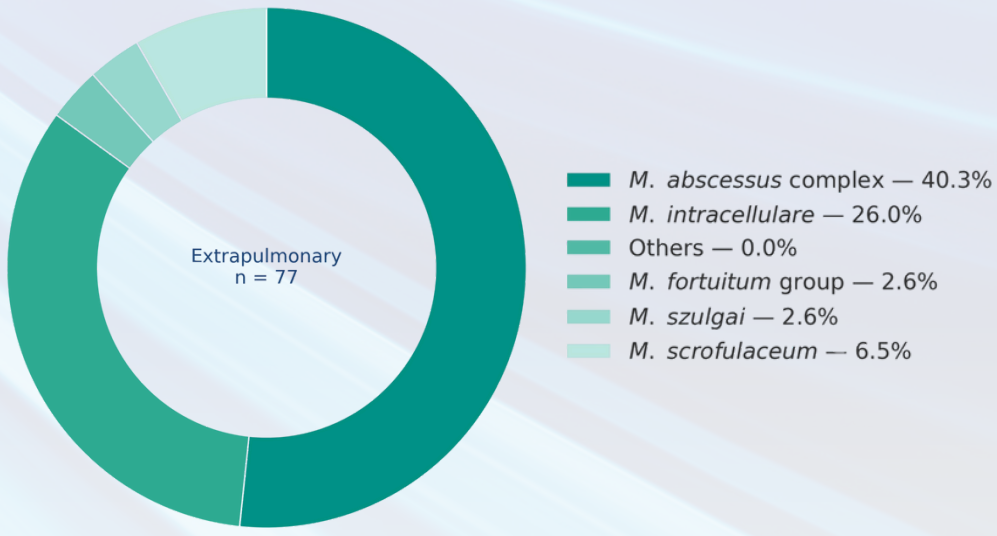
Results

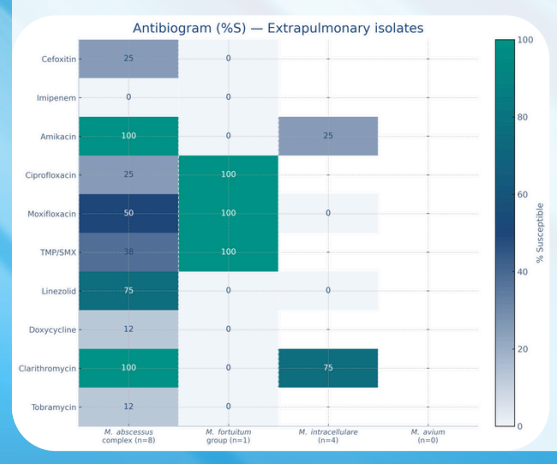
1. **Pulmonary**: *M. intracellulare* 29.0% and *M. abscessus* complex 28.0% were most common; age-related increase observed in NTM-positive pulmonary samples.
2. **Extrapulmonary**: *M. abscessus* complex 40.3% > *M. intracellulare* 26.0%.
3. **AST highlights**:
   - *M. abscessus* complex: high susceptibility to amikacin and clarithromycin (≈80–100%).
   - *M. fortuitum* group (pulmonary): 100% susceptible to amikacin, ciprofloxacin, moxifloxacin, linezolid.
   - *M. intracellulare* (pulmonary): clarithromycin 87.5% susceptible.
   - *M. avium* (pulmonary): 100% susceptible to amikacin, moxifloxacin, clarithromycin.
   - *M. intracellulare* (extrapulmonary): clarithromycin susceptibility 75%.

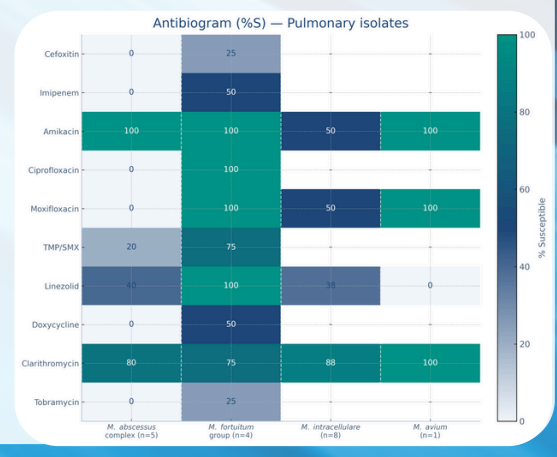
Pulmonary NTM — Top species (+ Others)



Extrapulmonary NTM — Top species (+ Others)







Conclusion & Discussion

- NTM species distribution differs by specimen type, led by M. abscessus complex and M. intracellulare.
- Consistently high activity of amikacin (and clarithromycin for many isolates) supports its role in regimens.
- Lower clarithromycin susceptibility in extrapulmonary M. intracellulare suggests site-/species-specific tailoring of therapy.