

# Mycobacterium abscessus

## Stand alone hospital admission for aggressive physiotherapy and nutritional review can extend periods between toxic IV antibiotic treatments

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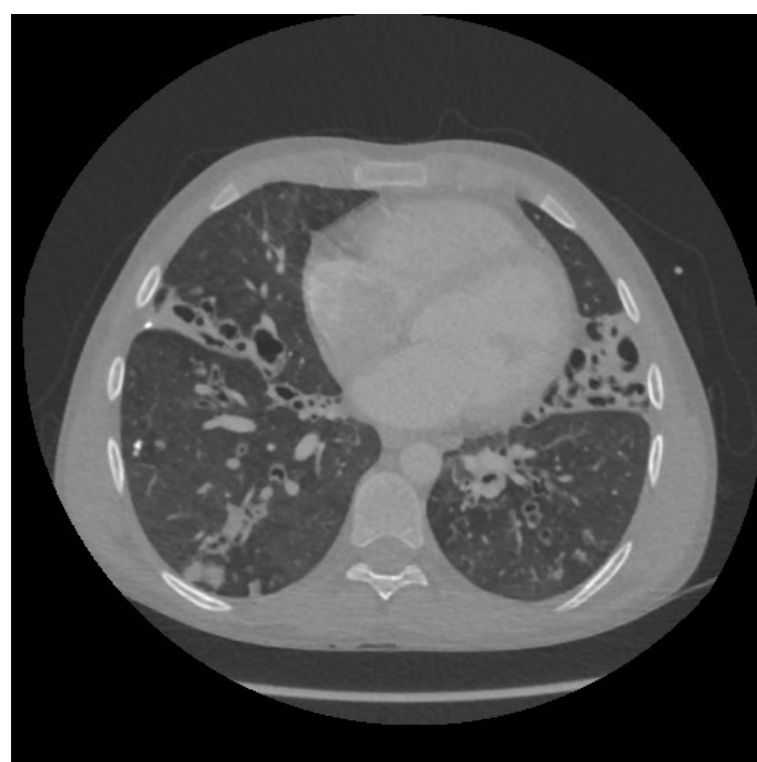
### Introduction

Treatment for chronic M. abscessus infection comprises maintenance therapy with oral and nebulised antibiotics, coupled with periodic exacerbation therapy with IV antibiotics.

Typically, lung function and weight gain improves with treatment of exacerbations, and there is interval loss in lung function and weight while on maintenance therapy. We report a case of an adolescent with chronic symptomatic M. abscessus infection, who needs hospital admission 2-3 monthly to sustain lung function.

Severe nausea, vomiting and anorexia has complicated IV treatment and so some admissions are limited to aggressive airway clearance and nutritional review without IV antibiotics.

We sought to compare outcomes between those admissions with and without IV antibiotic therapy.



### Methods

Weight and lung function profiles were retrospectively assessed over 15-months and across 6 hospital admissions.

### Case

This 15 years old boy has been culture-positive for M.abscessus for 6 years, with clinical deterioration and radiological features of NTM pulmonary disease despite maximal therapy.

Exacerbation therapy has included amikacin, meropenem, ceftazidime, tigecycline, and co-trimoxazole. Maintenance therapy has included oral moxifloxacin, minocycline, clarithromycin, and nebulised amikacin.

He receives overnight nutritional supplementation via PEG

Physiotherapy airway clearance comprises of a combination of intermittent positive pressure breathing (IPPB), positive expiratory pressure (PEP) and autogenic drainage (AD). Nebulised DNase and hypertonic saline 7% are used as adjuncts to airway clearance.

Adverse effects of treatment include sensorineural hearing impairment which has limited further use of IV aminoglycosides.

Severe nausea, vomiting and anorexia have further complicated IV antibiotic courses.

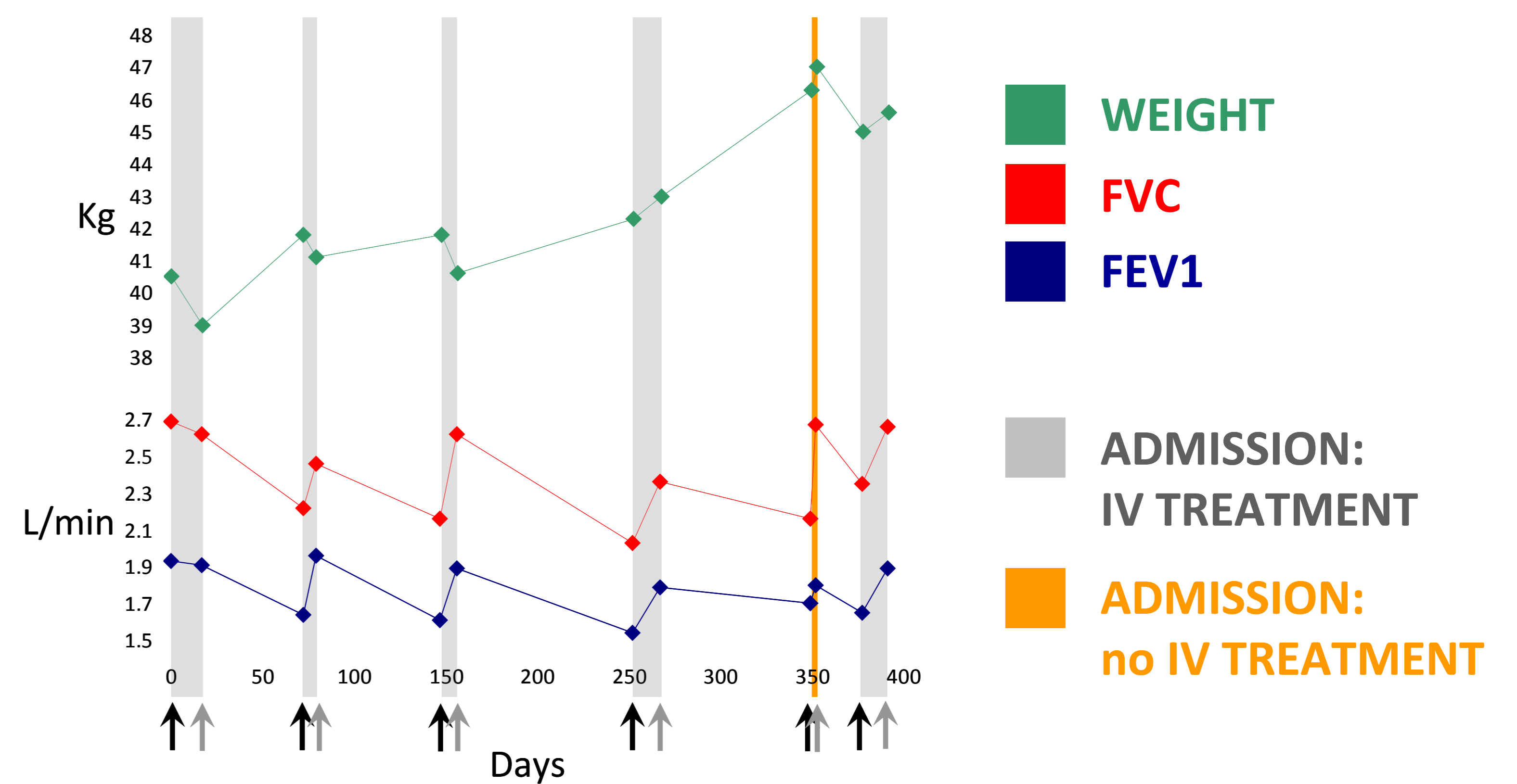
#### Microbiology results

Date	Sample type	AFB Smear	Culture
May-08	BAL	Negative	Member of Mycobacterium chelonae group
Dec-08	BAL	Negative	Member of Mycobacterium chelonae group
Nov-09	BAL	Positive	Mycobacterium abscessus
Mar-10	Cough swab	n/a	Negative
Oct-10	Cough swab	n/a	Negative
Nov-10	BAL	Negative	Mycobacterium abscessus
Mar-11	Sputum	Negative	Mycobacterium abscessus
Apr-11	Cough swab	n/a	Negative
Oct-11	Sputum	Negative	Mycobacterium abscessus
Jan-12	Cough swab	n/a	Negative
Apr-12	Cough swab	n/a	Negative
Apr-12	Induced sputum	Negative	Mycobacterium abscessus
Mar-13	Cough swab	n/a	Negative
Apr-13	Cough swab	na	Negative
Jun-13	Cough swab	n/a	Negative
Oct-13	Cough swab	n/a	Negative
Nov-13	Cough swab	n/a	Negative
Nov-12	Induced sputum	Negative	Mycobacterium abscessus
Feb-14	Induced sputum	Negative	Mycobacterium abscessus

### Results

During admissions involving IV antibiotic therapy, we identified a paradoxical pattern of improvement in lung function coupled with loss of weight, most likely as a consequence of nausea and vomiting during treatment. Lung function decreased between hospital admissions but was associated with catch up in weight.

Admission for MDT support without IV antibiotics showed equivalent improvements in lung function and enabled the patient to sustain his weight during the intensive treatment programme.



### Conclusions

In patients who require frequent admissions for chest exacerbations, antibiotic tolerance and drug toxicity represent barriers to treatment which need careful consideration.

Introducing short admissions for MDT support without IV antibiotic therapy can produce equivalent improvements in lung function, help preserve weight gain, and can be used to extend periods between toxic IV antibiotic treatments.