Abstract P30 Figure 1 Correlation of EnChroma comparison to Ishihara test, (n=40). Axis numbers correspond to results with EnChroma result on the x-axis and the Ishihara test result on the y-axis. Normal=1, protan=2, deutan=3, tritan=4, unknown=5. Bubble size denotes number of participants.

Farnsworth D15 test (FD15) and phase two to the Ishihara plate test. Participant self-assessment and opinions on the usability of the m-health solution were recorded.

Results There was good correlation between the EnChroma and Ishihara tests ($r=0.81$, $p<2.3\times 10^{-10}$), correlation between EnChroma and the FD15 was poor ($r=0.49$, $p<2.3\times 10^{-10}$). The qualitative analysis showed high trust and ease of use when scored by patients and clinicians.

Discussion The low correlation between the EnChroma and FD15 tests could be due to oversensitivity of the EnChroma test, however previous studies comparing the FD15 to other colour vision tests showed a low sensitivity for the FD15, (0.59)¹ suggesting that EnChroma results may be true abnormalities rather than false positives.

Apps like EnChroma have the potential to revolutionise, modernise and personalise colour vision testing in medicine, however the study lacks power (shown by the large confidence intervals) and will have to be repeated on a larger scale. Patients are keen to engage with m-health and more, suitable solutions should be explored. M-health has the potential to enable rapid point of care testing and fully remote management of side effects in TB and MDR-TB with further potential in other conditions.

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P31

CHARACTERISTICS ASSOCIATED WITH TREATMENT DECISIONS AND OUTCOMES IN NON-TUBERCULOUS MYCOBACTERIAL PULMONARY DISEASE: A RETROSPECTIVE COHORT STUDY

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Introduction Despite comprehensive guidelines the decision to treat non-tuberculous mycobacterial pulmonary disease (NTM-PD) is often determined by individual patient characteristics. The factors driving such decisions are reported infrequently in UK cohorts, and often exclude the immunosuppressed. Here we evaluate the features associated with treatment initiation in NTM-PD, and subsequent clinical outcomes.

Methods Positive non-tuberculous mycobacteria (NTM) samples from our hospital sites between 2011–13 and 2017–21 were analysed. Patients with respiratory isolates meeting the ATS/IDSA microbiological diagnostic criteria were included, and their digital hospital records examined. Multivariable logistic regression analyses were performed to examine characteristics significantly associated with treatment initiation and favourable clinical outcomes.

Results 125 patients were identified (table 1); 116 (93%) had abnormal imaging. 43 (34%) of the total cohort received specific antimicrobial therapy for NTM - 36% in 2011–13, compared to 31% in 2017–21 ($p=0.6$). Cavitory change on imaging was the only variable significantly associated with commencing treatment (OR 9.57 [95% CI 2.30–39.70; $p<0.01$]). Patients who isolated *Mycobacterium avium* complex, *M. kansasii* or *M. xenopi* appeared more likely to receive treatment. Those aged ≥ 80 were significantly more likely to not improve with NTM treatment (OR 0.69 [95% CI 0.48–0.99; $p=0.04$]), though overall there was a positive trend toward clinical improvement in the treated cohort (OR 1.23 [95% CI 0.98–1.54; $p=0.08$]). Over a median follow-up of 16 months (IQR 5–36 months), 36 patients (29%) died: this was not associated with any independent variable.

Abstract P31 Table 1

Descriptive Statistics of Cohort (n=125)

Median age (IQR)	68 (56–75)	
Sex	Female	70 (56%)
NTM species isolated	<i>Mycobacterium avium</i> complex (MAC)	78 (62.4%)
	<i>M. kansasii</i>	7 (5.6%)
	<i>M. xenopi</i>	4 (3.2%)
	Rapid-growing species	18 (14.4%)
	Other slow-growing species	8 (6.4%)
Radiological changes at diagnosis	Species undefined/mix	10 (8%)
	Nodular/bronchiectatic	61 (48.8%)
	Cavitating	28 (22.4%)
	Other	27 (21.6%)
	Normal/Unavailable	9 (7.2%)
Comorbidities	Immunosuppressed ¹	36 (29%)
	Known lung disease (e.g. bronchiectasis, COPD, fibrosis)	81 (64.8)
	Malignancy (ongoing)	16 (12.8%)
	GORD	12 (9.6%)
	Received NTM antimicrobial therapy	43 (34.4%)
Death from any cause during follow-up	No	82 (65.6%)
	Yes	36 (28.8%)
	Of those who received NTM treatment	14 (32%)
	Of those who did not receive NTM treatment	22 (27%)

¹Includes patients with HIV (n=10, with non-disseminated NTM disease), immunoglobulin deficiencies, active haematological malignancies, and significant doses of immunosuppressant medication.

Conclusions Presence of cavitation on CT at diagnosis was strongly associated with use of anti-NTM antimicrobials, confirming findings of a previous South Korean study.¹ The proportion of patients receiving NTM treatment was no different between our two time periods. Interestingly, systemic immunosuppression (pathological or iatrogenic) was not associated with either need to commence treatment or negative outcomes, but treatment was less likely to improve symptoms in those ≥ 80 . A better understanding of who benefits from antimicrobial treatment for NTM-PD would aid patients and clinicians in making decisions about when to initiate therapy.

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P32 CUTANEOUS ADVERSE DRUG REACTIONS TO ANTI-TUBERCULOSIS THERAPY – AN ISSUE FOR FIXED-DOSE COMBINATION TREATMENTS?

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Introduction Fixed dose combination (FDC) tablets for first-line anti-TB treatment (ATT) enable simple prescribing of multiple drugs with reduced pill burden. Cutaneous adverse drug reactions (CADR), can occur to both the individual components and the excipient ingredients. We noted rapid-onset severe rash appearing with Voractiv (Rifampicin, Isoniazid, Pyrazinamide, Ethambutol FDC) in some patients - prompting an assessment of CADR with different ATT drug combinations.

Methods We conducted a retrospective review of TB disease cases commencing standard 4-drug therapy January 2016 to February 2021. Patients were categorised by regimen: Voractiv only; Rifater (Rifampicin, Isoniazid, Pyrazinamide FDC) plus Ethambutol (E); and Rifinah (Rifampicin, Isoniazid FDC) plus Pyrazinamide (Z) and Ethambutol. Records were examined for history of clinically-significant rash in the first month of treatment (that prompted either treatment interruption or use of adjunct medications). Data were analysed with Chi-square & Fisher's exact tests.

Results 378 patients were assessed. Median age was 39 years, 44.2% were female. Main ethnic groups were Black-African (24.6%), White (20.1%), and Indian (18.5%). Moderate or severe rash within 1 month occurred in 5.3% (table 1). There was no clear relationship between this and age, sex, ethnicity, past medical history, or HIV/TB coinfection. Although frequency of rash requiring intervention was similar across the three cohorts, more rapid-onset rashes (less than an hour after first dose) were seen with Voractiv ($p = 0.03$).

There was no standard approach to investigation of rash including eosinophil counts and liver function testing, impairing our ability to detect systemic events. 5 of 6 Voractiv, 6/8 Rifater+E, and 4/6 Rifinah+Z+E cases had treatment reintroduction, though in only 2 was this with the original FDC. In 11 of 15, a culprit drug was omitted: Pyrazinamide (in 5), Isoniazid (3), Rifampicin (2), Ethambutol (1). Four continued without interruption receiving oral antihistamines and occasionally topical steroids; one had no intervention documented. **Conclusion** Despite convenience, our review suggests some FDCs may be associated with rapid-onset rash. Investigation

Abstract P32 Table 1 Frequency of clinically significant rash within first month of treatment by ATT regimen, January 2016 to February 2021

ATT regimen	Patients n	Rash requiring intervention n (%)	Rapid onset (≤ 1 hour) n (% of rash)
Voractiv	110	6 (5.5)	4 (67)
Rifater+E	143	8 (5.6)	1 (12.5)
Rifinah+Z+E	125	6 (4.8)	0
Total	378	20 (5.3)	5 (25)

of CADR was hampered by a lack of standardised management. If implemented, this would ensure consistency, plus early detection of systemic reactions and issues with specific drug batches.

P33 A RETROSPECTIVE REVIEW OF THE INVESTIGATION INTO PATIENTS WITH POSITIVE CULTURES FOR NON-TUBERCULOUS MYCOBACTERIA (NTM). JUST HOW MUCH WORK IS IT?

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Introduction NTM patients are an increasing part of the workload of the mycobacterium service. Diagnosis can be challenging and often requires repeated samples, radiology and clinic attendances, all of which produces a significant workload on the multi-disciplinary team. In our hospital serving a population of ~270,000, this is done by the mycobacterium service, primarily set up to manage mycobacterium tuberculosis (MTB). We conducted a workload analysis for NTM in our service, with a view to assess and improve our performance.

Methods Data were collected retrospectively for all patients with a positive culture result for NTM between Nov 2017 and Dec 2020. For each patient, total number of samples sent, number of positive samples, radiology results, presence of symptoms, and whether they were assessed by the mycobacterium service were collected. Patients were then assessed against the British Thoracic Society (BTS) criteria for NTM disease.

Results Our centre received 358 positive cultures for NTM from 154 patients (81 (53%) male, 73 female; ages 3months to 91years with 3 under 18, median 55years). There were 1–14 positive cultures/patient (median 1) and 89 (58%) patients had only one positive culture. 15 different NTM were identified. 11 patients had 2 or more different NTM. 6 patients had NTM/MTB coinfectd. M.avium complex accounted for 63 (38%) of the 168 patient unique isolates (M.avium 45, M. chimera 16, M.intracellulare 2), followed by M.abcessus/M. chelonae 24 (14%), M.fortuitum 19 (11%), M.kansasii 15 (8.9%), M.gordonae 10 (6%), 10 were not identified by whole genome sequencing. Almost all positive cultures were sputum, 7 bronchoalveolar lavage, 3 pus, 3 early morning urine, 1 blood culture. Patients with more than one culture had CT imaging. Most patients had comorbidities: 8 cystic fibrosis, 10 HIV. 31 patients were treated for NTM disease.