Tuberculosis at the Mater Hospital: 14 Months of Cases

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BACKGROUND

The clinical presentations and service utilisation of patients with tuberculosis (TB) disease varies by location. Understanding such characteristics is essential to try optimise outcomes for individuals with TB, in keeping with Ireland's TB elimination goals 2024-2030[1]. We sought to describe the population of individuals with TB treated in the Mater Misericordiae University Hospital (MMUH) over a period of 14 months.

METHODS

We undertook a retrospective review of the medical records of all cases of TB disease who were managed in MMUH from September 1st 2023 until October 31st 2024. Descriptive statistics were performed on demographics, co-morbidities and clinical characteristics including outcomes. This Audit was approved by MMUH's Clinical Audit & Effectiveness Committee (CA24-141).

RESULTS

Demographics and risk factors

Of the 37 cases of TB identified, 27 (73%) were male and their median age was 35 years (IQR 15-86). Most cases (30, 81%) were foreign-born (*Figure 1*), 13 (35%) had no fixed abode and eight (21.6%) were seeking asylum.

Comorbidities

Six cases (16.2%) cases were living with HIV and a HIV test was not done in three cases (8.1%). The most commonly identified co-morbidities included current smoking status (11, 29.7%), low vitamin D (6, 16.2%), ex-smoking status (3, 8.1%), additional immunosuppression history (2, 5.4%), HbA1c > 48 mmol/mol (2, 5.4%) and chronic kidney disease (1, 2.7%), (*Figure 2*).

Clinical Characteristics

Microbiological diagnosis was established by culture in 28 (75.7%) and by GeneXpert only in two cases (*Figure 3*). The most common site of infection was pulmonary (27, 73%) (*Figure 4*), of whom 11 (40.7%) had cavitatory disease. Only three cases of cavitatory disease had sputum cultures sent at two months of treatment. Of the nine (24%) cases with extrapulmonary TB disease, six (16.2%) had at least three sites of disease. Twenty cases (54%) were pansensitive and six (16.2%) had monoresistance (*Figure 5*). Two cases had resistance to multiple drugs, but only one met MDR-TB criteria.

Service utilisation

Overall, TB cases accrued 651 bed days (median 17.5, IQR 25.2) of hospitalisation. Social work was involved in 23 (62.2%) and inclusion health in eight cases (21.6%). Respiratory medicine were involved in the care of 15 cases (40.5%) and four cases (10.8%) had 26 outpatient visits to the respiratory clinic (mean 6.5 visits per patient). Thirty cases (81.1%) had 216 outpatient appointments with the Infectious Diseases (ID) service (mean 7.2 per patient) and 24 of them received their TB medicines from the ID pharmacy. The main reasons for ID pharmacy dispensing included drug resistance (6, 25%), HIV-coinfection (5, 20.8%), drug allergy/intolerance (2, 8.3%), complex drug interactions (1, 4.2%) and facilitating an inpatient discharge or drug shortage (11, 45.8%) (*Figure 6*).

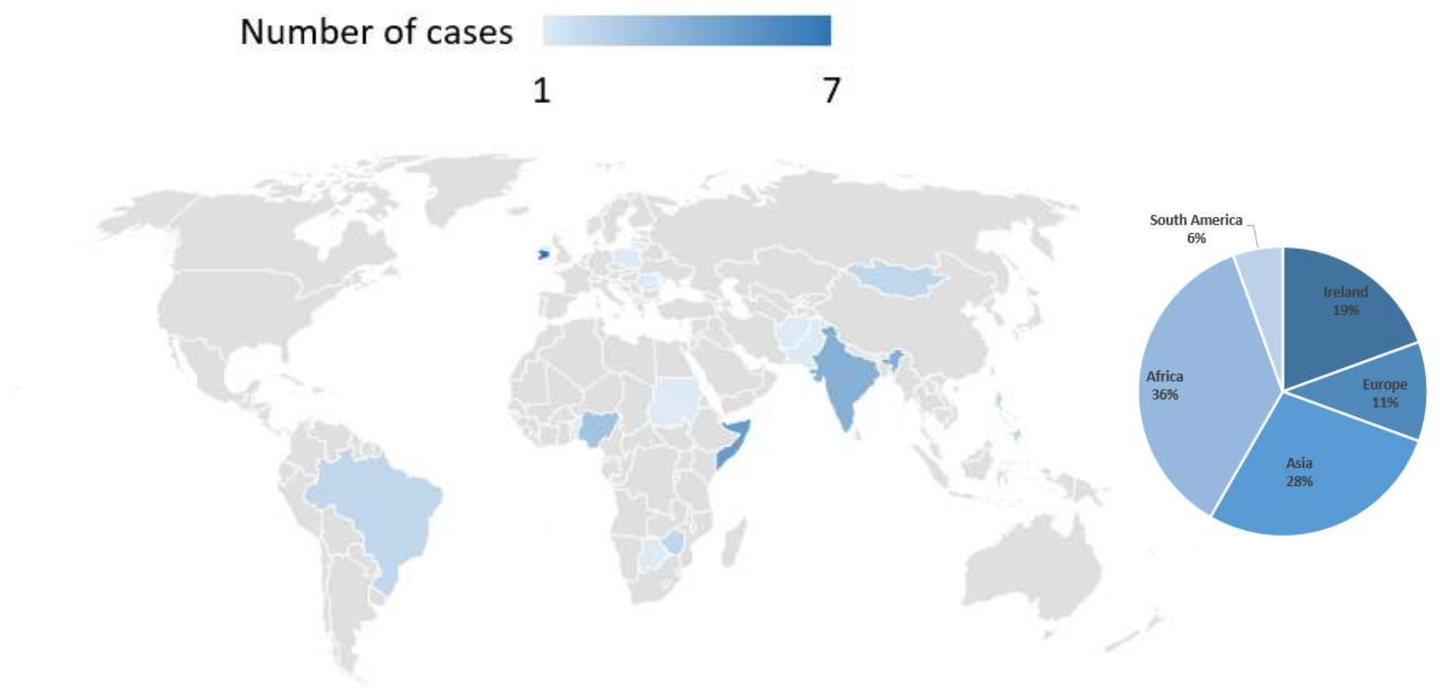


Figure 1. Country of Birth of MMUH TB cases.

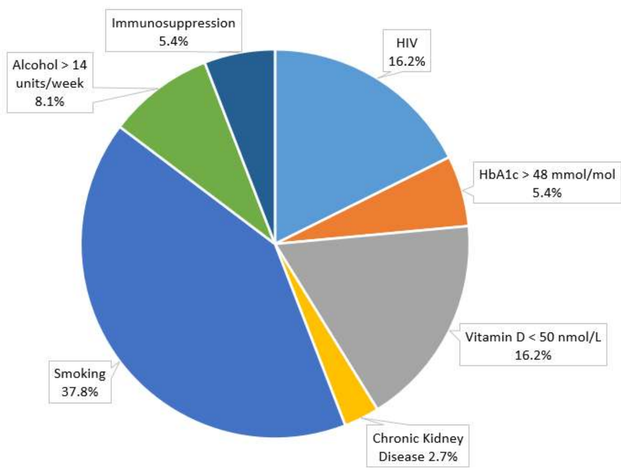
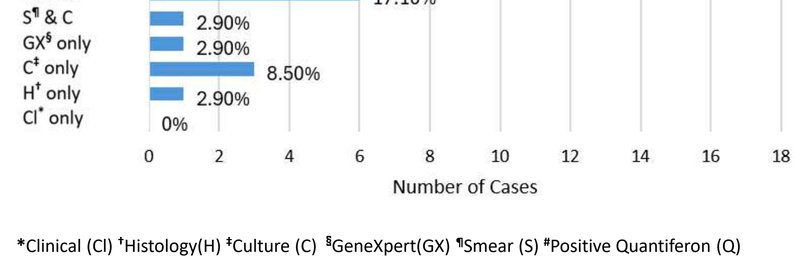


Figure 2. Co-morbidities in TB cases



*Clinical (Cl) †Histology(H) ‡Culture (C) §GeneXpert(GX) ¶Smear (S) #Positive Quantiferon (Q)

Figure 3. Diagnostic methods utilised

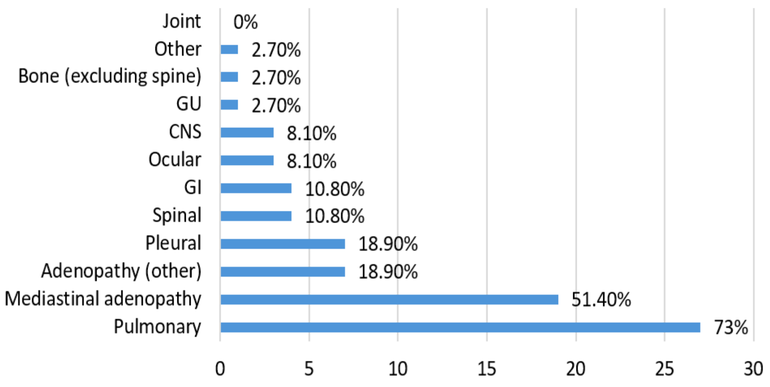


Figure 4. Site of TB disease

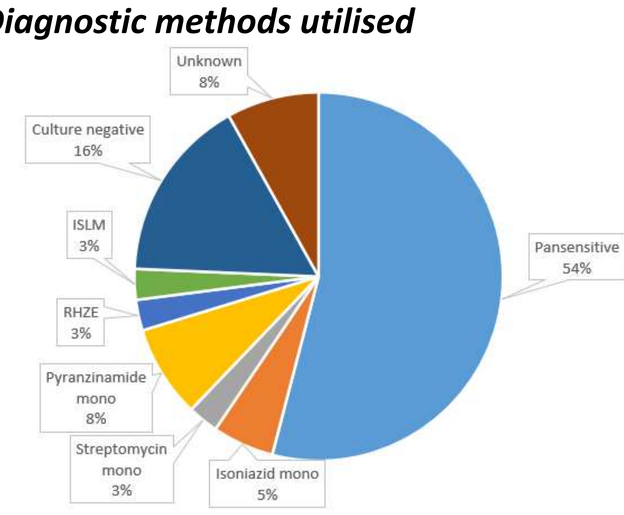


Figure 5. TB resistance profiles

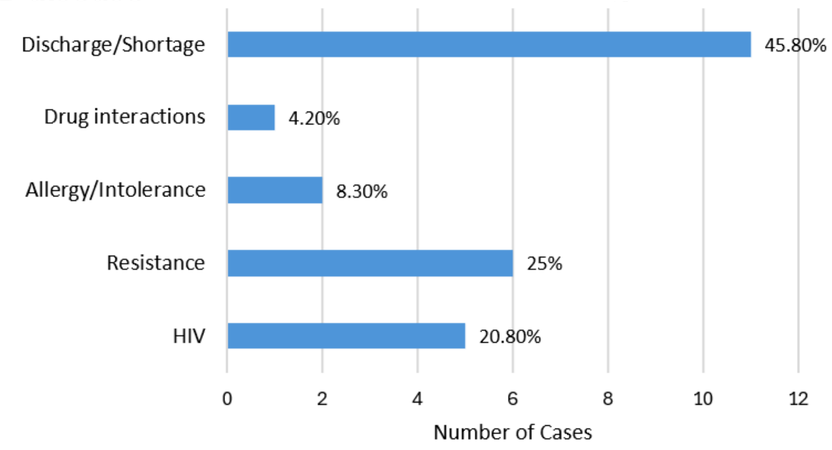


Figure 6. Reasons for ID pharmacy dispensing

Treatment

Only 10 cases (27.3%) had directly observed therapy. Seven cases had treatment interruptions with drug-induced liver injuries (2, 28.5%), poor adherence (2, 28.5%), and drug reactions (1, 14.3%) being the most common causes. Duration of treatment interruptions were unknown. One patient died before treatment completion.

CONCLUSION

Most TB disease cases in MMUH are managed by the ID service. Over one fifth of TB cases had drug resistance and 81% were not originally from Ireland. Adequately caring for patients with TB is complex and requires input from multiple disciplines.

References

1. Health Service Executive (2024) Striving to End Tuberculosis – A Strategy for Ireland 2024 - 2030. HSE Dublin Ireland. Available at: https://www.hpsc.ie/az/vaccinepreventable/tuberculosistb/