
SHORT REPORT

Tuberculosis drug resistance in England and Wales. How much is ‘home-grown’?

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(Accepted 8 May 2000)

SUMMARY

The fact that a substantial proportion of tuberculosis drug resistance (especially multidrug resistance) is due to transmission of resistant strains or treatment failure in the UK underlines the need to strengthen control in this country. Early identification and effective treatment of cases (including measures to support adherence and appropriate use of initial treatment regimes involving at least four drugs in those at risk of isoniazid resistance) would help to control the problem [1].

Tuberculosis drug resistance may be due to inadequate treatment or transmission of resistant strains. Resistance can be regarded as a failure of control because it is potentially preventable through reducing transmission or improving treatment. We sought to answer the question – ‘What proportion of tuberculosis drug resistance in England and Wales can be attributed to failure of control in this country?’

All cases of isoniazid resistant tuberculosis and multidrug resistant tuberculosis (MDRTB – defined as resistance to isoniazid and rifampicin with or without resistance to other drugs) in England and Wales in 1993 and 1994 were identified from the Public Health Laboratory Service MYCOBNET surveillance system. Data, including information on previous treatment for tuberculosis, documented changes in drug sensitivity patterns, and foreign birth were obtained from the MYCOBNET database and by sending questionnaires to clinicians and Consultants in Communicable Disease Control.

Patients with isolated isoniazid resistance or with multidrug resistance were classified into categories as described below.

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Resistance was classified as being due to failure of control in the UK if: the patient was born in the UK and had no previous history of treatment for tuberculosis (probable transmission of a resistant strain in the UK); the patient was born in the UK but had a previous history of tuberculosis treatment or a documented change in sensitivity patterns (probable failure of treatment in the UK born); the patient was born abroad but had a documented change in sensitivity while undergoing treatment in the UK (probable UK treatment failure in the foreign born).

Resistance was classified as being due to failure of control abroad if: the patient was born abroad and had no previous history of treatment for tuberculosis (probable transmission of a resistant strain abroad); the patient was born abroad and had a previous history of treatment for tuberculosis (probable failure of treatment abroad).

Results can be seen in Table 1.

At least 32% of isolated isoniazid resistance and 46% of MDRTB is ‘home-grown’ ($P = 0.048$) including 14% of isolated isoniazid resistance and 27% of MDRTB which is due to treatment failure in the UK ($P = 0.02$). At least 53% of isolated isoniazid resistance and 40% of MDRTB is due to treatment failure or transmission abroad. In 15% of isolated

Table 1. *Likely reason for resistance in patients with resistant tuberculosis in England and Wales, 1993–1994*

Likely reason for resistance	Isolated isoniazid resistance (<i>n</i> ; (%))	Multidrug resistance (<i>n</i> ; (%))
Transmission of a resistant strain in the UK	45 (18)	11 (19)
UK treatment failure in the UK-born	24 (10)	9 (16)
UK treatment failure in the foreign-born	10 (4)	6 (11)
Transmission of a resistant strain abroad	115 (46)	8 (14)
Failure of treatment abroad	17 (7)	15 (26)
Transmission of resistant strain – unknown if born in UK or abroad	34 (14)	4 (7)
Failure of treatment – unknown if born in UK or abroad.	3 (1)	4 (7)
Totals	248 (100)	57 (100)

isoniazid resistance and 14% of MDRTB it was not known whether the patients were born in the UK or not.

It is possible that some of the resistance in the UK-born could be due to transmission on trips abroad or through inadequate treatment abroad. However, it is more likely that the figures for “home-grown” drug resistance are underestimates since some of the 14–15% of patients with unknown country of origin

and some of the foreign-born patients will also have resistance due to transmission or treatment failure in the UK.

REFERENCES

1. Joint Tuberculosis Committee of the British Thoracic Society. Chemotherapy and management of tuberculosis in the United Kingdom: recommendations 1998. *Thorax* 1998; **53**: 536–48.