Western Cape local authority compliance with tuberculosis policy, 1984

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Summary

Local authority compliance with the national tuberculosis regimen in 1984 was examined in 29 of the 32 largest local authorities in the western Cape. The variability in management practices was especially evident with respect to children. The effects of the relative lack of uniformity and deviations from recommended policy need to be determined.

Tuberculosis is South Africa's major notifiable disease. It accounts for considerable mortality and morbidity. Several studies have focused recently on the problems of tuberculosis compliance in South Africa and in the western Cape in particular, but they document only one aspect of compliance, i.e. that of the patient. The Department of National Health and Population Development has worked out a series of accounts for considerable mortality and morbidity. Several compliance studies of tuberculosis chemoprophylaxis, diagnosis and treatment practices in the USA have shown that variability in management practices was especially evident with respect to children. In this report children were defined as being up to 16 years old as children. In this report children were defined as being ≤ 14 years of age.

LAs were asked to complete the questionnaire as accurately as possible, and were told that they would not be identified in the final report and that the study was aimed at not only assessing compliance, but also determining problems identified by LAs. The protocol was approved by the Ethical Committee of the University of Cape Town.

To improve the initially poor response rate, questionnaires were remailed to non-respondents 8 weeks after the initial mailing. After another 8 weeks, non-respondents were contacted telephonically and encouraged to complete the forms.

Methods

The aims of this study are to determine local authority compliance (as opposed to patient compliance) with the national tuberculosis regimen (NTR) in terms of recommended diagnostic, treatment and follow-up procedures and to determine the degree of uniformity that exists between local authorities (LAs). The methods used are similar to those used in three studies of tuberculosis chemoprophylaxis, diagnosis and treatment practices in the USA. The aims of this study are to determine local authority compliance (as opposed to patient compliance) with the national tuberculosis regimen (NTR) in terms of recommended diagnostic, treatment and follow-up procedures and to determine the degree of uniformity that exists between local authorities (LAs). The methods used are similar to those used in three studies of tuberculosis chemoprophylaxis, diagnosis and treatment practices in the USA.

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Results
Response rate and notification rate
Twenty-nine of the 32 LAs sampled responded after a 5-month period of follow-up. Respondents represented 95.9% of the 2,791,795 people estimated to live in the 32 LAs selected and 95.6% of the total coloured population of 1,698,796 in these areas. The median notification rate (/100,000 population) is shown in Table I. These rates need to be interpreted with caution since they have not been adjusted to take into account an underlying difference in the age distribution of the groups and the denominator with respect to the rate for blacks is unreliable.

Definitions
Thirteen LAs answered the question about their operational definition for compliance and 17 LAs the question about their operational definition for a defaulter. Seven defined compliance as 'full completion of therapy', 3 as 'having obtained ≥75% attendance', 2 as 'regular attendance' and 1 as '≥80% attendance'. Compliance is not defined in the NTR.

Fourteen LAs defined a defaulter as a patient who had not attended for 2 months, and 1 each as having not attended for 1 month, 13 days and 7 days. The definition and management of defaulters is not clearly described in the NTR. After 2 weeks of no treatment, the NTR recommends (in Annexure C) that health authorities should trace the defaulter and ascertain reasons for the default. This should be repeated after a further 2 weeks; finally after a total of 3 months of no treatment, the patient should be 'discharged'. However, the annexure elsewhere recommends that patients who have not received treatment for more than 3 months should be followed up for a further 2 months (a total of 5 months) before discharge.

Notification criteria and diagnostic practices
Table II lists the varying criteria used by western Cape LAs for notification. The NTR lays down criteria only for notification of cases of relapse. No clear criteria exist with respect to the notification of other cases, including children with positive tuberculin reactions.

All 29 LAs usually use a Heaf test (9 also use Mantoux) in children. The Heaf test is considered strongly positive by 25 of the 29 (86.2%) if the results are grade III or IV, as recommended, and by 4 of the 29 if the results are grade IV.

Of the 29 LAs, 28 send sputum samples after the initial visit, as recommended. The second specimen is collected after 90 doses by 15 LAs, after 60 by 1, after 55 by 1, and after 20 by 1. According to the recommendations (second sputum test after 3 months' treatment) we considered 55–60 doses as inadequate for analysis, but it was ascertained that 28 LAs (96.6%) usually use one or more of the recommended regimens for adults with uncomplicated pulmonary tuberculosis while 1 LA uses a three-dose schedule. For children with uncomplicated primary tuberculosis 12 LAs use a regimen according to the recommended two-agent treatment (isoniazid (INH) and ethambutol or INH and ethionamide), while 15 LAs use the four-drug regimens as for adult-type pulmonary tuberculosis; 1 LA uses other combinations and 1 uses only INH.

Treatment regimens
The information received about dosage and duration of therapy was inadequate for analysis, but it was ascertained that 28 LAs (96.6%) usually use one or more of the recommended regimens for adults with uncomplicated pulmonary tuberculosis while 1 LA uses a three-dose schedule. For children with uncomplicated primary tuberculosis 12 LAs use a regimen according to the recommended two-agent treatment (isoniazid (INH) and ethambutol or INH and ethionamide), while 15 LAs use the four-drug regimens as for adult-type pulmonary tuberculosis; 1 LA uses other combinations and 1 uses only INH.

Management of children
Table III shows that the usual management of children under 5 with a normal chest radiograph, a strongly positive tuberculin test and uncomplicated primary tuberculosis varies considerably across the LAs. Less variation exists with respect to the usual management of scholars with a normal chest radiograph and a strongly positive tuberculin test.

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TABLE II. CRITERIA FOR NOTIFICATION USED BY 29 WESTERN CAPE LAs

| Children 0-5 years with normal radiograph and strongly positive tuberculin test |
|---------------------------------|-------------------------|
| **Do not notify**               | 26/29 (89.7%)          |
| **Notify in certain cases**     | 2/29                    |
| **Did not answer the question** | 1/29                    |
| **Renotify a case**             | 15/29 (51.7%)          |
| **Renotify in certain cases**   | 12/29                   |
| **Did not answer the question** | 2/29                    |

*Among the stated criteria for renotifying, 7 were related to positive sputum tests and/or positive radiographs.

TABLE III. MANAGEMENT OF CHILDREN WITH TUBERCULOSIS IN 29 WESTERN CAPE LAs

| Usual management of children 0-5 years, with normal radiographs and strongly positive test |
|------------------------------------------|--------------------------------------------|
| **INH and ethambutol (or ethionamide)**   |
| for 6 months as recommended             | 6/29 (20.7%)                              |
| **INH only for 6 months**                | 13/29                                     |
| **INH and other, either for only 3 months or for up to 1 year** |
| **No treatment**                         | 1/29                                      |

Usual management of scholars with normal radiographs and strongly positive tuberculin tests

<table>
<thead>
<tr>
<th>Give INH for 6 months, according to recommendations</th>
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<tbody>
<tr>
<td>19/29 (65.5%)</td>
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**INH for 3 months, re-radiograph or perform Heaf test again and eventually continue treatment**

<table>
<thead>
<tr>
<th>Use other INH schedules</th>
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<tbody>
<tr>
<td>6/29</td>
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<table>
<thead>
<tr>
<th>No treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/29</td>
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Management of contacts

With regard to adults 26 LAs act according to the recommendations at the initial visit, i.e. a chest radiograph is taken and/or bacteriological investigation is done. Twenty-three of those LAs take radiographs immediately or, if this is impossible, obtain sputum samples; the other 3 obtain sputum samples and only take radiographs if the patient is symptomatic. Only 3 LAs mention that they re-radiograph after 3 months, although re-evaluation after 3 months is recommended (either by radiograph or by sputum test).

In children, 20 LAs give INH for 3 months to all contacts, then do a Heaf test; 5 of these state that if the test is negative, they vaccinate the child, and if positive they continue with INH for a further 3 months (as recommended). Four LAs do a Heaf test and/or radiograph before starting treatment with INH; 5 LAs follow other policies.

Problems encountered by LAs in implementing the recommendations

The most frequently cited problem is patient non-compliance attributable to several factors: lack of beds (5 LAs); unemployment (4); lack of legislation making treatment compulsory (4); transport for patients (3); lack of co-operation by employers (5); and alcohol abuse (5). In 10 cases overcrowding and the low socio-economic status of the patients were mentioned as factors that hinder the work of the LAs. Other problems mentioned by at least 1 LA were lack of state support for feeding schemes, lack of staff, poor-quality radiographs in children, the need for health education, and the problem of tailoring one regimen to many different local authorities, each with different needs.

Conclusions

Fox12,13 stated that national surveillance of actual tuberculosis practices was the most important measure in improving national standards for the management of tuberculosis. He further felt that ‘an essential aspect of such surveillance, if it is to influence practice, is the publication of clearly presented results, the pertinent discussion of the findings and their implications’. It was in this spirit that we conducted this study of tuberculosis compliance of local authorities in the western Cape. We felt that while it is important to improve patient compliance, insufficient attention has been given to the management practices of LAs in South Africa. A recently published study examined regional variations in tuberculosis policy in 4 LAs in the western Cape and 3 health districts in Ciskei.14 Their findings were similar to ours in that for many practices reasonable uniformity exists, while for others there is considerable variation.

Before interpreting the results of our study its potential limitations need to be mentioned. Usual practices in 1984 were the subject of the study, so the results may not represent current practice. We were able to assess compliance only for those practices for which clear recommendations were outlined in the NTR. LAs may have reported what is NTR policy and may not have the necessary financial and manpower resources.

The criteria for notification between LAs could distort the interpretation of trends over time and comparisons between LAs. Clear unambiguous definitions are also required (for similar reasons) for patient compliance and defaulting.

The variability in management practices between LAs was especially evident in the management of children. Considerable variability in reasons for the use of tuberculin tests was found between LAs. Particularly striking was the finding that 12 LAs use a four-drug schedule for children with uncomplicated primary TB. The Regional Health Department needs to determine reasons for the use of such regimes. Similarly, the management of children under 5 who have a normal radiograph and a positive Heaf test with INH alone by 13 LAs needs attention, as does the variability in the follow-up of contacts.

Some of the lack of uniformity and deviations from recommended policy may be attributed to lack of resources or misunderstanding about the need to follow the NTR as well as to the problems cited by LAs in implementing the recommendations. Patient non-compliance, socio-economic factors and poor communication (between services and patients) are, however, likely to be more important reasons for the high incidence than LA compliance in most western Cape LAs.

The purpose of this paper was to highlight an aspect of compliance which is usually neglected and to obtain useful information that could be used to improve local authority management of tuberculosis. We recommend that the NTR be revised to include criteria not covered and further, that similar studies be carried out regularly in other areas of the country.

We would like to thank the 29 LAs in the western Cape for providing the information required, the Department of National Health and Population Development for its support of this study, Dr S. Fisher (Deputy Medical Officer of Health, Cape Divisional Council) for useful suggestions during the development of the protocol and questionnaire and for critically reviewing the manuscript, and Hester Rossouw for typing the questionnaire and preparing the manuscript.

REFERENCES