Non-Drug Issues Related to the Treatment of Tuberculosis

Hospitalization of Patients with Tuberculosis

Patients with tuberculosis should receive most of their treatment as outpatients. When, if ever, is hospitalization preferable? What can be done in a hospital that cannot be done in a clinic or physician's office? What can be done more effectively (more quickly, less expensively) in a hospital? Although coexistent diseases may require hospitalization, when does a patient suffering solely from tuberculosis need to be hospitalized?

Recommendations and Rationale

It is not uncommon for a patient to be diagnosed as having tuberculosis while in the hospital. Symptoms of his tuberculosis may have led to his admission, or he may have another disease and be found incidentally to have tuberculosis. In the latter case the stay in the hospital would be determined by the primary disease. The indications for admission or continued stay in the hospital related to tuberculosis itself are like those for any other disease. They include potentially life-threatening conditions such as miliary/meningeal disease, adult respiratory distress syndrome, intravascular coagulation, hemoptysis, or severe reactions to drugs.

Tuberculous patients were once confined to the hospital to avoid the spread of infection in the community. The advent of effective chemotherapy and the subsequent conversion of tuberculosis hospitals to use as general hospitals altered the situation. Infectiousness is not now, in itself, an indication for confinement in the hospital, except in those rare cases where social circumstances or drug-resistant organisms pose special risks to the community. For those patients who are in a hospital, measures including effective chemotherapy, covering the mouth when coughing, and placement in private rooms with appropriate ventilation are all that is necessary to reduce the potential for transmission of infection. Available information shows that with these precautions, the risk of infection to the hospital's staff or other patients is very low. Elaborate additional procedures for isolation frequently inhibit appropriate contact with the hospital's personnel and others and should be avoided.

Finally, when a diagnosis is not readily accomplished on an outpatient basis or when a patient's life is disorganized to the extent that his needs cannot otherwise be met, hospitalization will be necessary.

Societal Control of Drug-Resistant Tuberculosis

Acquired drug resistance continues to occur in some persons with tuberculosis because of poor compliance or the prescription of inappropriate regimens of therapy. Primary drug resistance occurs in individuals who have not received any previous treatment for tuberculosis. The occurrence of primary drug resistance is usually considered an indication of transmission of drug-resistant organisms from patients with acquired drug resistance who have received inadequate or inappropriate therapy. In the United States, about 7 percent of the previously untreated cases have organisms resistant to one or more antituberculosis drugs. Rates of primary drug resistance have been decreasing in recent years, but drug resistance remains a problem in some geographic areas and in certain population groups such as Asians and Hispanics. Early studies in animals and the absence of community outbreaks of drug-resistant tuberculosis initially lead many observers to conclude that drug-resistant tuberculous organisms might not be as pathogenic as drug-sensitive strains; however, recent community outbreaks in Mississippi, New York, and Montana have demonstrated that some strains of drug-resistant tuberculosis may be very transmissible.

Recommendations and Rationale

There are insufficient data on the pathogenicity of acquired drug-resistant and primary drug-resistant tubercle bacilli compared to drug-sensitive organisms. Operationally, health personnel must assume and act as if all drug-resistant patients are contagious.

The Center for Disease Control's surveillance studies of primary drug resistance and acquired drug resistance should be continued. Health departments of states and large cities should maintain registers of tuberculosis and should record information on drug resistance in the registers. At least annually, health departments should review the register of tuberculosis and report to the community an assessment of rates of primary and acquired drug resistance in the community and the state. As part of complete community surveillance, laboratories should be required to report drug-resistant isolates of tuberculosis to the health
Many program directors that a single, inner-city, unemployed alcoholic patient is more likely to be poorly compliant. Since many studies document that the patient's compliance is frequently overestimated, it is recommended that those patients who are expected to show themselves to be noncompliant with ingestion of medication should be treated such that this ingestion is directly observed. Others can be treated in an unsupervised fashion.

Increasing the number of patients in programs providing direct observation of ingestion of medication will temporarily raise the costs of the program; however, ultimately, the costs of programs to control tuberculosis will be markedly reduced as the frequency of failure of treatment, with its attendant problems of drug resistance and rehospitalization, is reduced. In addition, programs employing directly supervised regimens of intermittent drugs may result in financial savings by using fewer doses of drugs and by obviating the need for monitoring the response to therapy (routine chest x-ray films and samples of sputum). Personnel who are not physicians or nurses should be used under a variety of circumstances to supervise and observe administration of medication.

**National Registry for Tuberculosis**

**Recommendations and Rationale**

A national registry of tuberculosis patients should be established. This registry could identify drug resistance, along with location, health provider, and most recent bacteriologic, radiologic, and therapeutic status. Such a registry would be invaluable in the management of itinerant patients and in the evaluation of various programs to control tuberculosis. It is recognized that prior to implementation, certain legal, logistical, and financial problems would have to be solved.

**Future Availability of Tuberculosis Specialists**

**Recommendations and Rationale**

There is concern that there will be insufficient numbers of adequately trained physicians to provide care for tuberculosis in the future. Enlightened and highly motivated graduates of specialized programs for training in tuberculosis and federally-funded service designees are growing fewer and older. It is suggested that this issue must be addressed in order to continue the progress that has been achieved in the control of tuberculosis in the United States and Canada.

**Committee on Non-Drug Issues in Chemotherapy**

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National Consensus: Non-Drug Issues in Chemotherapy

1. Except in cases of potentially life-threatening disease, severe drug reactions, coexisting illnesses requiring hospitalization, and the rare social circumstance in which there is a special threat to the community, tuberculosis should be treated on an ambulatory basis. Infectiousness alone is not an indication for hospitalization.

2. Patients who are proven or expected to be non-compliant with programs to treat tuberculosis should receive their medication only under directly administered supervised conditions.

3. Personnel who are not physicians or nurses can and should be permitted to supervise and observe administration of medication.

4. Public health officials should be provided with the legal means to confine at public expense non-cooperative patients with sputum-positive tuberculosis who pose an infectious threat to the general community and to maintain confinement until treatment is complete.

5. Tuberculosis control personnel should consider each case of drug-resistant pulmonary tuberculosis as infectious, with appropriate identification and evaluation of the patient’s contacts.

6. Individuals with extremely drug-resistant sputum-positive tuberculosis which is refractory to chemotherapy are potentially infectious to the general community. If cooperative, these individuals may be confined at home with close supervision by health department personnel. If uncooperative, permanent confinement should be imposed at public expense.