



Comorbid TB and HIV in a Chronically Homeless Male: Social Isolation Compounds Stress of Medical Confinement

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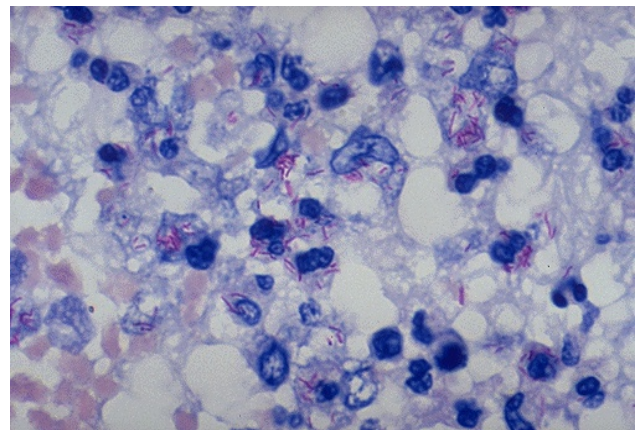
Of all tuberculosis (TB) cases reported in the United States between 1994 and 2003, over 6 percent were among persons classified as homeless during the 12 months prior to diagnosis; 34 percent of TB-infected homeless persons tested nationwide had coinfection with the human immunodeficiency virus (HIV) (Haddad, 2005). In Maryland, the reported number of homeless persons with TB increased more than threefold between 2003 and 2004—from 4 cases (1.5 percent of all reported cases) to 15 cases (4.8 percent). During the same period, the overall incidence of TB in Baltimore increased from 4.9 cases to 5.6 cases per 100,000 population, while the national case rate decreased from 5.1 to 4.9. (CDC, September 2005)

Homelessness, long recognized as a risk factor for tuberculosis, can also complicate treatment (Haddad, 2005, CDC, September 2005; Conanan, 2003; Lathan, 2002; NHCHC, 1994), as the following case report demonstrates. HIV coinfection increases the risk of progression from latent TB infection to active tuberculosis (Moss, 2000, as cited in Conanan, 2003). Clinicians experienced in the care of homeless persons stress the importance of maintaining communication with these patients, even during medical confinement, and recommend close collaboration among public health, hospital, and primary care providers throughout the course of treatment.

Case Description

In May 2004, Mr. F., a single, 47-year-old, African American male, presented at Health Care for the Homeless, Inc., in Baltimore following hospitalization for treatment of pneumonia. Although some of his respiratory symptoms had resolved, he reported persistent chest congestion and a cough producing yellow sputum. A chest X-ray revealed left upper lobe cavitation and diffuse pattern, patchy nodular infiltrate with some right paratracheal and hilar adenopathy.

The client was subsequently referred to a local emergency room for assessment of possible active tuberculosis. Two sputum specimens, collected on May 26 and May 27, 2004, were cultured and found positive for acid-fast bacilli (AFB) and pan-sensitive, pulmonary *Mycobacterium tuberculosis*.



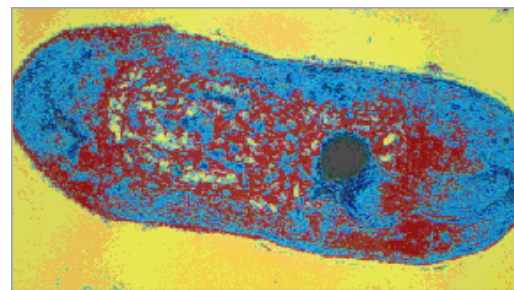
Ziehl-Neelsen acid fast stain, Internet Pathology Laboratory for Medical Education. Florida State University College of Medicine

Medical history Mr. F. first sought care at the Health Care for the Homeless (HCH) clinic in May 2003. Since then, he has established relationships with one medical provider and a therapist case manager. His medical diagnoses include acquired immunodeficiency syndrome (AIDS), anemia, hepatitis C, chronic obstructive pulmonary disease (COPD), and degenerative disc disorder. First diagnosed with human immunodeficiency virus (HIV) infection in 1999, he received inconsistent treatment for this and other medical conditions before coming to HCH. Shortly after his medical evaluation at HCH, the patient began antiretroviral therapy and treatment for comorbid conditions unrelated to HIV.

Psychosocial history Chronically unemployed, Mr. F. has lived on the streets of Baltimore since his early 40s. Despite the solitude and dangers of street dwelling, he avoids shelters, which he finds unhygienic and overly restrictive. In initial encounters with his HCH medical provider, he confided that he was having difficulty accepting his HIV diagnosis and was referred to a therapist case manager at HCH for help coping with his illness and an adherence counselor for assistance in managing his HIV medication regimen. During this period, Mr. F. reported symptoms of depression, including psychomotor retardation (feeling “heavy”), low energy, and social isolation. He also reported difficulty adjusting to the rigorous medical treatment regimen and felt the HIV diagnosis had resulted in a significant loss of personal freedom. He was initially diagnosed with Depressive Disorder Not Otherwise Specified and Adjustment Disorder related to his HIV diagnosis. As his symptoms improved, these Axis I disorders resolved. Subsequent sessions with the therapist case manager focused on securing housing and income.

Three months after beginning antiretroviral treatment, the patient reported feeling more comfortable with the medical regimen but continued to be distressed about his HIV diagnosis, and was especially concerned about the social stigma that might follow any disclosure of his illness to others. Six months into treatment, he reported that while no longer experiencing fear, he remained anxious to conceal his condition from others. Although his depression and adjustment problems subsided, Mr. F. continued to exhibit a range of coping mechanisms commonly used by homeless clients—wariness about sharing personal information, projecting an attitude of strength to mask signs of weakness, and a strong commitment to independence, frequently turning down offers of assistance from providers. Nevertheless, he engaged well in interactions with caregivers, expressed appreciation for their support, and generally kept in close contact with them.

Treatment of tuberculosis On May 26, 2004, Mr. F. began the recommended four-drug regimen for initial treatment of tuberculosis—isoniazid (INH), rifampin (RIF), pyrazinamide (PZA), and ethambutol (EMB)—as well as Avelox (moxifloxacin hydrochloride). Because Mr. F. was found to be infectious at the time of his TB diagnosis, he received directly observed therapy in an isolation unit of the local hospital. His contact with hospital



Electron micrograph of *M. tuberculosis*
courtesy of the Institut Pasteur image library

personnel was otherwise minimal. His HCH medical provider and social workers maintained contact with him through telephone calls and hospital visits. During these encounters, the patient repeatedly expressed feelings of shock, bewilderment, and stigmatization associated with his medical confinement. He expressed anger that he had had no time to prepare for this significant loss of freedom, and stated that he felt he was being “treated like a pariah.” His statements about the TB diagnosis and ensuing confinement closely resembled those he had made to describe his initial feelings about the HIV diagnosis. Without family members or friends to provide social support, Mr. F. grew increasingly agitated.

After several days of hospitalization, the patient informed his HCH medical provider that he wanted to leave the hospital and would contact her when he was ready to be found. The medical provider told him that she would have to disclose his comments to the health department and hospital staff, which she did. On June 9, the patient left the hospital against medical advice and a health department order. A couple of weeks later, he contacted his HCH medical provider from a pay phone. The medical provider reported the telephone number Mr. F. had used to health department officials, who located the patient in a public park nearby on June 23. Mr. F. was then admitted to a specialty ward of a hospital in a different part of the state, where he received treatment for the succeeding nine months and made no further attempt to leave against medical advice. HCH practitioners maintained telephone contact with the patient throughout his hospitalization and following discharge.

Discussion

All public health jurisdictions in the United States have the authority to hold patients with active tuberculosis against their will for treatment until they are no longer a danger to others. In Maryland, the health department is authorized to require medical quarantine for patients with infectious or currently non-infectious TB who have demonstrated nonadherence to treatment and whose failure to take medication poses a potential threat. The goal of the Maryland Tuberculosis Control Program is “to treat tuberculosis patients in the least restrictive manner possible” (MDHMH, 2003).

Mr. F. first demonstrated nonadherence by leaving the hospital. The health department looked for the client each day until finding him. It was then that the quarantine order was issued and the client was told that he had to comply with treatment or face the possibility of incarceration. The client accepted the quarantine order at that point and remained in quarantine until he was discharged appropriately. Incarceration would not have been warranted unless he had either refused the quarantine order or left the facility where he was quarantined before discharge.

Two factors enabled Mr. F. to tolerate his confinement in the second medical facility: better relationships with hospital staff and ongoing telephone communications with HCH caregivers, his only contacts outside the hospital. Staff at this facility had more experience working with people in quarantine and more skillfully addressed the psychological impact of confinement than did staff

at the hospital to which Mr. F. was initially admitted. As a result, the patient no longer felt ostracized. In addition, he was given more freedom of movement and allowed to walk on the hospital grounds under a physician's supervision. HCH clinicians arranged for temporary housing following discharge and facilitated completion of the client's application for SSI by sending information about his hospitalization to Social Security and providing a narrative description of his impairments during the previous year. These efforts promoted continuity of care, stability, and reintegration into the community.

Health Care for the Homeless practitioners often provide the "glue" that permits relatively seamless care for homeless patients within fragmented health care delivery systems. Yet even experienced HCH providers find cases like this one especially challenging. Although the risk of tuberculosis in homeless populations is well known, clinicians may not be alert to periodic increases in the incidence of TB in their area due to progress made during the last decade in reducing this risk. This case is a reminder that relationship building, coordination of care by multiple providers, and maintaining contact with homeless clients during and after medical confinement are key in assuring treatment adherence and progress toward resolving homelessness. It also points to the special vulnerabilities of homeless persons with infectious diseases, whose coping mechanisms may exacerbate their social isolation and interfere with efforts to provide appropriate medical care.

Despite efforts of HCH staff in this case to maintain contact with the client throughout the course of treatment, the lack of consistent communications from hospital and public health personnel contributed to the patient's anxiety about loss of autonomy and stigmatization related to his HIV and TB diagnoses. His strong relationships with HCH providers eventually enabled public health officials to locate him when he left the hospital before treatment was completed. It is clear from this account that despite strict protocols for medical confinement of patients with active tuberculosis, hospital and public health personnel need assistance from primary care providers who have established therapeutic relationships with infected individuals, to assure continuity of care and to protect the community from communicable diseases.

The special vulnerability of HIV-infected homeless persons to active tuberculosis should trigger routine testing (TST or QFT) for TB infection. Medical providers experienced in the care of individuals who are homeless recommend that homeless patients who have tested positive for HIV receive TB testing every six months (Conanan et al., 2003) instead of annually, as recommended in standard clinical guidelines for HIV-infected persons who are TST-negative on initial evaluation and who belong to populations in which a substantial risk for exposure to *M. tuberculosis* exists (CDC, 2005). Although assuring regular testing of transient persons is not always possible, it is more feasible for clients with whom therapeutic relationships are well established, as was the case with Mr. F. Care coordination among clinician volunteers and regular staff is important to build therapeutic relationships and assure regular monitoring and treatment of latent infection.

Take Home Message

TB-infected individuals who are homeless need continued outreach and care coordination.

- *Have a high index of suspicion for TB in a homeless patient who has tested positive for HIV.*
 - Ask if the patient has ever had active tuberculosis, when and where the last tuberculin test (TST) and chest X-ray were performed, whether s/he ever received treatment and/or prophylaxis for TB, and if so, what medications were prescribed and how long s/he took them.
 - Consider targeted testing of homeless patients with HIV/AIDS every six months because of their higher risk for contact with active TB cases and unpredictable follow-up (Conanan et al., 2003).
 - For HIV-infected homeless patients with a negative TST, re-check every six months; for those with a positive TST, do a baseline chest X-ray and symptom screen every six months.
 - TB specialists recommend regular tuberculin skin testing even for HIV-positive patients with CD4 counts < 200, who may not be as reactive to the TST due to immunosuppression.
 - For persons with TB symptoms or a history of exposure to tuberculosis, a chest X-ray is recommended, regardless of the skin test reaction. Realize that a negative chest X-ray does not rule out active tuberculosis, including non-pulmonary TB, in an HIV-positive patient.
 - A blood test to detect latent tuberculosis (the QuantiFERON or QFT test) may be helpful with homeless clients. However, in persons with impaired immune function (including those with HIV/AIDS) a negative QFT test alone might not be sufficient to rule out *M. tuberculosis* infection (CDC, December 15, 2005; Bernardo and Roncarati, 2004).

- *Maintain contact with the patient who has been medically confined, and attend to the emotional stress of confinement as well as to his or her medical needs.*
 - HCH providers should continue relationships with homeless patients during medical confinement, listen to their concerns, and work with hospital personnel to help relieve their anxiety.
 - Consider assigning medically complex patients to staff providers rather than volunteers and interns to support the development of an ongoing relationship.

- *Foster collaboration and care coordination among hospital, health department, and primary care providers, throughout the course of treatment.*
 - Collaborate with your local health department for TB surveillance, screening and referrals, to help decrease barriers to care for homeless patients (Bernardo and Roncarati, 2004).
 - Work with hospital personnel to assure continuity of care during and after medical confinement.
 - Various agencies—including shelters—require proof of TB testing. It is not unusual for a homeless person to have been tested multiple times for TB by different providers. Help

homeless patients maintain a “medical home” where documentation of TB testing and treatment is maintained. Provide a written record of TB testing results on a wallet-sized card that patients can carry with them. (Conanan et al., 2003)

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