MMWR in Review, Infectious Diseases

MMWR in Review: Tuberculosis contact investigations increasingly important
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Editor's note: This article summarizes key points from a Centers for Disease Control and Prevention (CDC) report published in Morbidity and Mortality Weekly Report (MMWR). The Introduction and Comment sections may include information that did not appear in the original publication. To subscribe to MMWR, visit www.cdc.gov/MMWR.


Introduction

Tuberculosis (TB) disease is caused by spread of Mycobacterium tuberculosis complex via airborne person-to-person transmission. Exposure to M. tuberculosis can result in tuberculosis (TB) disease or latent TB infection (LTBI), which has no clinical symptoms or radiologic evidence of disease. The cycle of transmission can be ended by isolating and treating patients with TB disease, examining contacts and treating LTBI to prevent progression to TB disease. Infected adults are the source of infection in children.

The CDC systematically collects aggregate data on contact investigations from the 50 states, the District of Columbia and Puerto Rico. Data from 2003-'12 have been analyzed for trends in yields from contact investigations.

Study results

In 2012, there were 9,945 cases of TB disease (5% were 14 years of age or younger) and 105,100 contacts in the U.S. of whom 84,998 were examined (see figure). Of these examined contacts, 532 (0.6%) were diagnosed with TB, and 15,411 (18%) contacts were diagnosed with LTBI and offered treatment.

Sixty-six percent of those diagnosed with LTBI started treatment, and 43% of those with LTBI completed treatment. Reasons for incomplete therapy included loss to follow-up and patient decision to stop treatment.

An estimated 128 TB cases over the initial five years were averted (34% of all potential 376 cases) as a result of this investigation, but an additional 248 cases might have been prevented if all TB contacts had been identified and treated. The rates of drug resistance have remained stable over the past decade at approximately 1%.

Tuberculosis contacts in U.S., 2012
Public health and clinical implications

Although the number of patients in the U.S. with TB has decreased over the years, the number of contacts per patient has increased, highlighting the public health burden that results from the complex follow-up process. Enhancing contact investigation activities, particularly by ensuring completion of treatment by contacts recently infected with *M. tuberculosis*, is essential to achieve the goal of TB elimination.

Comment

Investigators noted that the nine-month isoniazid regimen for treatment of patients with LTBI has been a major barrier to completion of treatment. Combination treatment with isoniazid-rifapentine given once weekly as directly observed therapy over 12 weeks (three months) may result in improved treatment completion rates and can be used in previously healthy patients 12 years of age and older.

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Resource

- [The 2015 AAP Red Book provides information on diagnostic strategies, risk assessment and treatment regimens, as well as guidance on conducting an epidemiologic investigation of TB contacts.](#)