Medical News

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Needlestick Transmission of Both HIV and HCV

Researchers at the Massachusetts Department of Public Health and the CDC recently reported infection of a healthcare worker (HCW) with both human immunodeficiency virus (HIV) and hepatitis C virus (HCV) following an accidental needlestick injury from a patient with AIDS. In July 1990, a 48-year-old HCW sustained a deep injury with a blood-contaminated needle while performing phlebotomy on a patient with AIDS. Blood also spilled from the collection tube into the spaces between the cuffs of the HCW's gloves and her wrists, onto her hands, which were chapped with open cracks. Immediately after the incident, the HCW removed her gloves and washed her hands.

At the time of the exposure, the patient with AIDS was being treated with zidovudine therapy and was not recognized as having HCV infection. The HCW reported no related risk factors for HIV and declined zidovudine prophylaxis. Baseline HIV antibody testing was negative. No baseline testing was done for HCV, because the source patient was not identified initially as being HCV-infected. Serum obtained 11 months after the exposure was positive for HIV antibody, and the results were confirmed by Western blot. Seroconversion to HCV occurred between 9 and 13 months after exposure. Eighteen months after documented seroconversion to HIV, and 28 months after the needlestick injury, the patient developed hepatic coma and progressive renal failure and died.

The strains of HIV and HCV infecting the source patient and the HCW were compared after amplification by the polymerase chain reaction and genetic sequencing. The HIV and HCV strains from the HCW and the source patient were found to have a high degree of relatedness (the HCV strain being almost identical), providing evidence of transmission from the source patient and the infected HCW.

Several features of this occupationally acquired infection are unusual. Signs and symptoms of acute HCV infection appeared 8 months after exposure, suggesting an unusually long incubation period. The time from exposure to anti-HCV seroconversion also was unusually long. In previous reports of HCV transmission from percutaneous injury, the time to seroconversion ranged from 3 to 8 months. The rapid progression to hepatic failure and death is also remarkable. The time to HIV seroconversion in this HCW also was unusually long, one of the longest reported to the CDC. It is not known whether current, more sensitive versions of tests for HIV and HCV antibodies might have been able to detect seroconversion earlier.

The reasons for the unusual clinical and laboratory features of this HCW's illness are unclear. There was no preexisting immunodeficiency in this HCW. It may have been related to the simultaneous acquisition of the two infections; there is evidence of pathogenic interactions between the two viruses.

The risk of maternal-fetal transmission of HCV may be increased in women who also are HIV-infected. In HCV-infected patients with hemophilia, progressive liver disease was seen only in those also infected with HIV. One report has suggested that HCV transmission may be more likely if the source patient has dual infection.

The Public Health Service interagency working group on the management of exposure to HIV considered this case as part of a review of available data on the length of HIV seroconversion window. This group did not recommend routine HIV serologic follow-up beyond 6 months after exposure, because prolonged follow-up would detect a new infection only rarely and would prolong the anxiety of the exposed HCW unnecessarily. However, in the case of simultaneous occupational exposure to HIV and HCV, or in the event of clinical symptoms, or signs of infection more than 6 months after exposure, evaluation for late seroconversion may be needed. The authors recommend further study for possible pathogenetic interactions between HIV and HCV.

FROM: Ridzon R, Gallagher K, Ciesielski C, et al. Simultaneous transmission of HIV and HCV from a needlestick injury. *N Engl J Med* 1997;336:919-922.

Legionnaires' Disease From Whirlpool Spa Display

An outbreak involving 23 cases of legionellosis (with *Legionella pneumophila* serogroup 1 [Lp1]) in southwestern Virginia was reported recently by the CDC. A case-control study revealed that a history of having visited a large home-improvement center during the 2 weeks before the onset of illness was associated significantly with the cases defined as Lp1, identified by culture of sputum, antigen assays of urine, or fourfold rise in serum antibody titers.

For the 13 cases and 12 controls for whom there was a detailed in-store exposure history, cumulative duration of store visits averaged 79 minutes for cases compared to 29 minutes for controls. In addition, 10 case patients (77%) reported spending time in the area surrounding the whirlpool spa display compared to only three (25%) of the controls. Four case patients reported only walking by the spa display. No other activity, including drinking water from the store fountain, was associated with illness.

Sample cultures were taken from all water sources in the home-improvement center, including the whirlpool spa

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