

Abstracts of current literature on epidemiology, diagnosis, and treatment

Series Editor: Jihad Slim, MD

ILLNESS DUE TO RELEASE OF A BIOLOGIC AGENT

The Centers for Disease Control and Prevention (CDC) issued a report to help health care personnel recognize illnesses or patterns of illness that might be associated with intentional release of biologic agents. According to the report, epidemiologic clues include (1) an unusual temporal or geographic clustering of illness or patients presenting with clinical signs and symptoms that suggest an infectious disease outbreak, (2) an unusual age distribution for common diseases (eg, an increase in what appears to be chickenpox-like illness in adult patients but which could be smallpox), and (3) a large number of cases of acute flaccid paralysis with prominent bulbar palsies, suggestive of a release of *Clostridium botulinum* toxin. Agents of highest concern are *Bacillus anthracis* (anthrax), *Yersinia pestis* (plague), variola major (smallpox), *C. botulinum* toxin (botulism), *Francisella tularensis* (tularemia), filoviruses (Ebola hemorrhagic fever, Marburg hemorrhagic fever), and arenaviruses (Lassa fever, Argentine hemorrhagic fever). The CDC recommends that unidentified gram-positive bacilli growing on agar be treated as a finding rather than a contaminant when they occur in a suspicious clinical setting. The article provides recommendations for infection-control professionals and state health departments in dealing with intentional release of biologic agents and offers resources for additional information on responding to bioterrorism.

Recognition of illness associated with the intentional release of a biologic agent. MMWR Morb Mortal Wkly Rep 2001;50:893-7.

ASSESSING ANTIRETROVIRAL DRUG EFFICACY DURING THE FIRST WEEK OF THERAPY

A study was conducted to determine whether antiretroviral drug efficacy can be assessed during the first week of therapy through measurements of plasma HIV-1 RNA concentrations. Included in the study were adults and children naïve to protease inhibitors who were receiving zidovudine (n = 38), didanosine (n = 52), or highly active antiretroviral therapy (HAART, n = 34) comprising zidovudine, lamivudine, nevirapine, and didanosine. HIV-1 RNA concentrations in plasma were measured by polymerase chain reaction. The combined group of patients on monotherapy had approximately the same baseline HIV-1 RNA concentration as those on the 4-drug therapy. Good responders were defined as patients whose viremia measurements after day 2 decreased continuously without a subsequent increase during the first 3 months of therapy and those who had HIV-1 RNA concentration changes greater than 1.5 log or undetectable HIV-1 RNA at week 12. The rest of the patients were designated as poor responders. The individual virus decay rate constants (κ) at day 6 correlated significantly with changes in

HIV-1 RNA concentrations at 4, 8, and 12 weeks and correctly predicted 84% of the responses with a cutoff value of $\kappa = 0.21$ per day (in log scale). Reduction in plasma HIV-1 RNA of less than 0.72 log by day 6 after initiation of therapy predicted poor long-term responses in more than 99% of patients. The researchers concluded that changes in HIV-1 RNA concentration at day 6 after treatment initiation are major correlates of longer-term virologic responses.

Polis MA, Sidorov IA, Yoder C, et al. Correlation between reduction in plasma HIV-1 RNA concentration 1 week after start of antiretroviral treatment and longer-term efficacy. Lancet 2001;358:1760-5.

ISONIAZID THERAPY FOR TUBERCULOSIS AMONG PERSONS INFECTED WITH HEPATITIS C VIRUS

A prospective study was conducted to assess the risk for hepatotoxicity and associated isoniazid withdrawal in a cohort of injection drug users (n = 146; age \geq 18 years) who had normal baseline hepatic transaminase levels and who were treated with isoniazid for latent *Mycobacterium tuberculosis* infection. Of the participants, 138 (95%) were seropositive for hepatitis C virus (HCV); 37 participants (25%) were seropositive for HIV. Isoniazid therapy was initiated between March 1990 and January 1996; after initiation of therapy, monthly follow-up occurred through July 1996. Participants had to have completed at least 1 week of isoniazid therapy for inclusion in the study. Isoniazid was administered daily (5 mg/kg body weight; 300 mg maximum) or twice weekly (15 mg/kg; 900 mg maximum). Thirty-two (22%) of the participants developed elevated hepatic transaminase levels greater than 3 times the upper limit of normal at least once during follow-up. Elevations in transaminase levels were associated with concurrent alcohol use but not with race, age, presence of hepatitis B surface antigen, HIV-1 infection, or current injection drug use. Eight percent of the study population discontinued isoniazid therapy because of hepatotoxicity. The researchers concluded that the risk for hepatic transaminase level elevation and drug discontinuation for HCV-infected persons receiving isoniazid was within the range reported for populations with lower HCV prevalence.

Sadaphal P, Astemborski J, Graham NM, et al. Isoniazid preventive therapy, hepatitis C virus infection, and hepatotoxicity among injection drug users infected with Mycobacterium tuberculosis. Clin Infect Dis 2001;33:1687-91.

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