

#### UNRECOGNIZED MYCOBACTERIUM TUBERCULOSIS BACTEREMIA

A blood-culture survey measured the prevalence of *Mycobacterium tuberculosis* bacteremia among febrile adult patients admitted to an infectious disease hospital in Thailand and a general hospital in Malawi in order to determine whether active tuberculosis is underrecognized in febrile patients with *M. tuberculosis* bacteremia and to assess factors associated with this underrecognition. Patients ( $n = 344$ ) gave a full history and underwent physical examination. A 10 mL sample of blood was taken from each patient and sent for analysis; blood culture results for *M. tuberculosis* required several weeks. HIV testing was done on all patients. Additional diagnostic tests for active tuberculosis (ie, sputum smears, chest radiography) were available at both hospitals. Two hundred fifty-five patients (74%) were infected with HIV and 34 patients (10%) had *M. tuberculosis* bacteremia. Clinical predictors of *M. tuberculosis* bacteremia included the presence of HIV infection; oral thrush; lymphadenopathy; or chronic cough, fever, or weight loss. The diagnosis of active tuberculosis was missed in 30% of patients in the infectious disease hospital and 71% of patients in the general hospital because patients did not receive previous antituberculosis therapy, chest radiography, or sputum smear results on admission to the hospital. The study concluded that HIV-infected patients who present with oral thrush, chronic fever, cough, or weight loss have a high risk of mycobacteremia and would benefit from blood cultures for *M. tuberculosis*, which may result in more rapid recognition and earlier treatment of *M. tuberculosis* bacteremia.

*McDonald LC, Archibald LK, Rheapumkankit S, et al: Unrecognised Mycobacterium tuberculosis bacteraemia among hospital inpatients in less developed countries. Lancet 1999;354:1159-1163.*

#### HIV-1 SEROCONVERSION ANALYSIS IN MILITARY PERSONNEL

A cohort study examined the prevalence, epidemiologic correlates, and risk factors associated with the acquisition of non-subtype B HIV-1 and drug-resistant genotypes in a group of military personnel with recently acquired HIV-1 infection. Patients ( $n = 95$ ) were included if they had documented seroconversion within 3 years of the study's initiation. Serologic and genetic analysis revealed that seven patients (six men and one woman) were infected with HIV-1 genetic subtype E; the remaining patients were infected with HIV-1 subtype B. Of the seven patients with HIV-1 subtype E, all six men reported sexual contact during short deployments in Thailand; the woman reported a heterosexual

encounter while in the United States. Comparisons demonstrated that subtype E-infected patients were more likely than subtype B-infected patients to be heterosexual (100% versus 38%), to have had overseas exposure (86% versus 27%), and to report sex with commercial sex workers (86% versus 15%). Eight of 31 treatment-naive patients had one or more primary mutations that have been associated with phenotypic drug resistance. Patients infected with drug-resistant virus were more likely to be homosexual; these patients were also more likely to have acquired HIV in the United States and to report sexual contact with a person known to be infected with HIV. The study concluded that improved access to laboratory technologies for identification of HIV-1 subtypes is needed. Also, larger prospective studies are necessary to form recommendations for initial treatment regimens.

*Brodine SK, Shaffer RA, Starkey MJ, et al: Drug resistance patterns, genetic subtypes, clinical features, and risk factors in military personnel with HIV-1 seroconversion. Ann Intern Med 1999;131:502-506.*

#### EFFECT OF GENE MUTATION ON PNEUMOCYSTIS CARINII PNEUMONIA

A cohort study investigated the impact of dihydropteroate synthase (DHPS) mutations on chemoprophylaxis failure and mortality in HIV-1-infected patients with *Pneumocystis carinii* pneumonia (PCP). The DHPS gene was sequenced in 168 bronchoalveolar lavage DNA samples from 144 HIV-1-infected patients who experienced 152 episodes of PCP. DHPS mutation patterns with nonsynonymous nucleotide changes were identified in 31 of the 152 episodes of PCP. DHPS mutations were significantly more common in patients exposed to sulpha drugs: 18 of 29 patients exposed to sulpha drugs had DHPS mutations compared with 13 of 123 patients not exposed. Patients with *P. carinii* and DHPS mutations had a three times higher risk of death from pneumonia. The study concluded that DHPS mutations seem to have significant impact on the mortality of HIV-1-infected patients with PCP. However, DHPS mutations were not unequivocally associated with treatment and failure of sulpha-drug prophylaxis, therefore other factors may exist that affect sulpha susceptibility in patients with *P. carinii*.

*Helweg-Larsen J, Benfield TL, Olsen JE, et al: Effects of mutations in Pneumocystis carinii dihydropteroate synthase gene on outcome of AIDS-associated P. carinii pneumonia. Lancet 1999;354:1347-1351.*

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