

Table. MICs of antimicrobial drugs for *Shigella sonnei* clinical isolate WA7593 and its transconjugant WA7593TC1

Antimicrobial drug	MIC ( $\mu\text{g/mL}$ )	
	WA7593	WA7593TC1
Ampicillin	>256	>256
Cephalothin	>256	>256
Cefotaxime	>32	>32
Ceftazidime	4	4
Ceftriaxone	>32	>32
Cefaclor	>256	>256
Imipenem	0.19	0.25
Trimethoprim/sulfamethoxazole	>32	0.032

PCRs were performed with primers from the internal regions of *bla*<sub>CTX-M</sub> gene and primers for insertion sequences *ISEcp1* and *IS903* (4,5). Positive PCR products were obtained with primers *ISEcp1F* and *CTX2* (943 bp); no amplified product was produced with primers *CTX1* and *IS903R*. Sequencing of a 943-bp amplicon showed that *bla*<sub>CTX-M15</sub> was flanked upstream by an *ISEcp1*-like element.

The presence of an integron in *S. sonnei* WA7593 and WA7593TC1 was investigated by using integron-specific primers *hep35* and *hep36* (2). Only *S. sonnei* WA7593 produced a PCR product. This finding suggests that the transmission of *bla*<sub>CTX-M15</sub> is not by integron-mediated transfer. A further 162 *Shigella* spp. and 260 *Salmonella* spp. isolated from 2003 through 2005 were also screened for ESBL production; no further isolates were identified.

The presence of a CTX-M-type, ESBL-producing isolate is rarely reported in the United States. The only other reference was from a multistate study in 2001–2002 that identified CTX-M type from *E. coli* isolates from urine, sputum, and blood (6). No further reports about CTX-M-producing organisms have been disseminated. Our investigation suggests that CTX-M-type ESBLs may spread throughout the United States through infected travelers. This finding is notable because *S. sonnei* is a common enteric pathogen. Our results further emphasize that travelers from

others parts of the world can introduce highly mobile and clinically important resistance mechanisms into the community. The spread of CTX-M ESBLs may be faster and more widespread than previously thought; therefore, CTX-M type should be taken seriously as a surveillance target in the United States, especially in patients with a history of travel outside North America.

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## HIV and Hepatitis C Virus Coinfection, Cameroon

**To the Editor:** Coinfection with HIV and hepatitis C virus (HCV) is now a major public health concern worldwide, owing both to its high prevalence (4–5 million persons of 40 million infected by HIV) and to interactions between the 2 diseases in terms of their diagnosis, natural course, and treatment (1,2). Although Africa is the continent by far the most badly affected by both HIV and HCV infections, data on coinfection in the general population are lacking. In Cameroon, a central African country, the HCV seroprevalence is among the highest in the world (13.8%) (3). We have also reported a high seroprevalence of HIV in a general population of southern Cameroon (7.4%), and especially in young women (22.5%) (4). Here, we investigated the prevalence of HIV/HCV coinfection in this population.

A population-based, cross-sectional survey was conducted in September 2001 in 3 villages of the East Province of Cameroon (250 km from Yaoundé, the capital city). The study methods, the baseline characteristics of the participants, and the HIV

seroprevalence have been described in detail elsewhere (4). Briefly, all inhabitants >15 years of age were eligible for the survey. After giving their informed consent, the participants were interviewed by using a standard verbal questionnaire, in French or in a local language, during door-to-door visits. Blood samples were collected by peripheral venipuncture, and serum was screened for antibodies to HCV by using an enzyme immunoassay (INNOTEST HCV Ab IV, Innogenetics, Ghent, Belgium). Samples with indeterminate results were retested. All positive and twice-indeterminate samples were confirmed with a third-generation line immunoassay (INNO-LIA HCV Ab III update, Innogenetics). Serologic screening for HIV infection was based on an enzyme immunoassay (Murex HIV-1.2.O, Abbott, Rungis, France). All positive samples were confirmed by using a line immunoassay (INNO-LIA HIV-1+2, Innogenetics).

Among the 484 participants, 256 were women (52.9%), and the median age was 34 years (interquartile range 23–52 years). Most participants (93.6%) were Bantus; the remainder were pygmies. Seven persons refused venipuncture after the interview, and 1

sample could not be analyzed. These 8 persons did not differ from the rest of the study population in term of sex (50.0% women vs. 47.1% women), but they were slightly younger (median, 26.8 years vs. 34.9 years). Of the 476 available samples, respectively 19 (4.0%) had indeterminate HCV serologic results, and 5 (1.1%) had indeterminate HIV serologic results. The overall seroprevalence rates were 21.0% (95% confidence interval [CI] 17.4%–24.9%) for HCV and 7.4% (95% CI 5.2%–10.1%) for HIV. Only 3 patients (0.6%) had positive results for both infections: a man 29 years of age and 2 women ages 36 and 52 years.

The Figure shows the seroprevalence rates of HCV and HIV according to sex and age. Multivariate random-effects logistic regression analyses showed different risk factors for the 2 infections. The HCV seroprevalence was associated with age (<45 vs.  $\geq$ 45 years, odds ratio [OR] 13.04; 95% CI 6.73–25.30;  $p < 0.001$ ), sex (men vs. women, OR 2.02; 95% CI 1.17–3.47;  $p = 0.01$ ) and the ethnic group (Bantus vs. pygmies, OR 10.98; 95% CI 1.31–92.42;  $p = 0.03$ ). In contrast, the HIV seroprevalence was higher in women than in men (OR

10.22; 95% CI 3.19–32.80;  $p < 0.001$ ). No specific risk factors were found in men, whereas women who were unmarried (OR 6.49; CI 2.45–17.17;  $p < 0.001$ ) or school-educated (OR 7.12; 95% CI 1.59–31.78;  $p = 0.01$ ), or those with a history of sexually transmitted infections (OR 2.92; 95% CI 1.08–7.89;  $p = 0.03$ ) had higher rates than other women.

HIV/HCV coinfection is therefore rare in this general population, which lives in an area where both HCV and HIV are endemic. This finding could be related to the dissimilar epidemiologic patterns of the 2 infections. Indeed, HIV infection mainly affects young persons, especially young women, while HCV infection is more frequent in older persons of both sexes. We have previously postulated that HIV is likely to be transmitted by the sexual route, in a context of commercial logging and the extensive and complex sexual networks it induces (4). In contrast, the route of HCV transmission is unclear. HCV seropositivity was not associated with a history of blood transfusion, injections, surgery, scarification, or tattooing. Intravenous drug use was not investigated in our study but was likely to be infrequent. Although sexual transmission could not be ruled out, especially between regular partners, the shape of the seroprevalence curves and the lack of association with HIV infection, syphilis, or other sexually transmitted infections suggests that this mode of transmission is inefficient, in keeping with other reports (5,6). Our seroprevalence curves and the study location are consistent with the hypothesis that frequent iatrogenic transmission occurred during mass medical campaigns conducted before 1960 (7). The rate of HCV coinfection among the HIV-infected subjects in our study (8.6%) is much lower than the overall rate (25%–30%) in North America and Europe (1,2), where intravenous drug use is a major risk factor for both

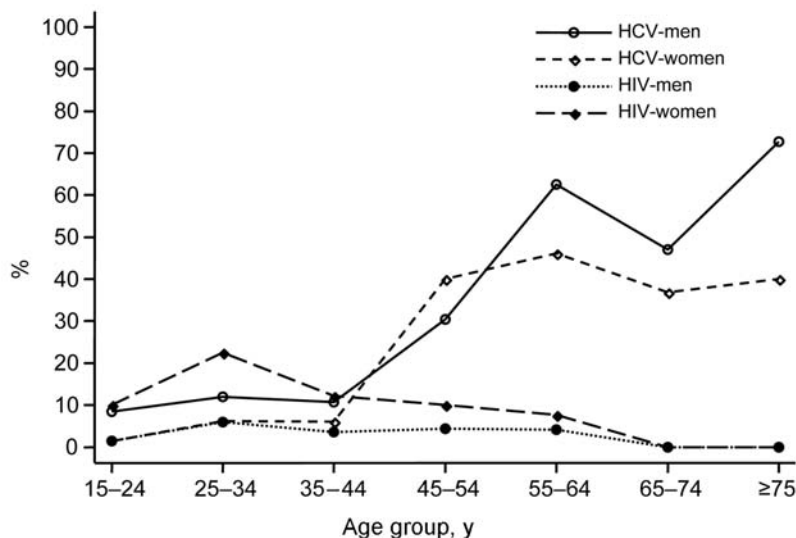


Figure. Seroprevalence rates of hepatitis C virus (HCV) and HIV infection by sex and age in the general population of southern Cameroon, 2001.

infections (8,9). This rate was even in the lower range of values found among HIV-infected heterosexual persons in industrialized countries (9%–27%) (2). Our results therefore suggest that the high seroprevalence rates of HIV and HCV in Africa will not necessarily result in a high prevalence of HIV/HCV coinfection.

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## Amebic Liver Abscess in HIV-infected Patients, Republic of Korea

**To the Editor:** Amebic liver abscess (ALA) is the most common extraintestinal complication of amebic infection. Although loss of cellular immunity is thought to play a role in infection by the pathogen, whether HIV infection is also a risk factor for invasive amebiasis is controversial (1–3). ALA in HIV-infected patients has not been well characterized, although several case series have been reported (2,4). We report the role of HIV infection status in ALA in an area where ALA is not endemic and the clinical features of ALA in HIV-infected patients.

All patients with ALA at Seoul National University Hospital (SNUH) from January 1990 through December 2005 were identified; some have been previously reported (5). SNUH is a 1,600-bed, university-affiliated teaching hospital and the largest referral center for HIV/AIDS in the Republic of Korea. The diagnostic criteria for ALA were radiologic evidence of intrahepatic abscess, trophozoites of *Entamoeba histolytica* in fluid aspirated from an abscess, or absence of bacteria and fungi in aspirated fluid and a titer  $\geq 128$  in an indirect

hemagglutination assay (IHA) for *E. histolytica*.

Of 31 patients with ALA at SNUH from 1990 through 2005, 10 (32%) were HIV positive. The proportion of HIV-infected patients among patients with ALA increased significantly with time (linear-by-linear association,  $p < 0.001$ ) (Figure). Of 10 patients from 1998 through 2005, 8 (80%) were HIV positive. Except for 2 patients with a history of travel to an ALA-endemic area, 88% of the patients were HIV positive.

Median age of the 10 HIV-positive patients with ALA was 34.5 years (range 29–54 years); all patients were male. Four had a homosexual orientation, 4 had a heterosexual orientation, and 2 had an unknown sexual orientation. Fever (100%) was the most common symptom, and abdominal tenderness (90%) and diarrhea (50%) were frequently observed. Median leukocyte count was 9,000/mm<sup>3</sup> (range 3,410–16,700/mm<sup>3</sup>), and median CD4 cell count was 279/mm<sup>3</sup> (range 40–370/mm<sup>3</sup>). Eight patients had abscesses in the right lobe of the liver and 2 had abscesses in both lobes; 8 patients had 1 abscess and 2 had multiple abscesses. Median size of abscesses was 7.25 cm (range 3–12 cm). In 5 patients, pleural effusion was observed in chest radiographs. IHA titer was  $\geq 128$  in 10 patients and  $\geq 512$  in 8 patients. Median days to defervescence was 2 (range 1–5 days). In 2 patients, perforation of the abscess into the abdominal cavity was a complication. No patients died or had relapses.

Early in the AIDS pandemic, some studies reported that the prevalence of invasive amebiasis was not increased in patients with HIV infection (1,6). However, recent reports of ALA associated with HIV infection have increased. Studies in Taiwan demonstrated that invasive amebiasis, including ALA, is on the increase in HIV-infected patients in disease-endemic areas (2,7).