

closely related to a genotypic group of viruses isolated from the eastern United States and two Caribbean countries from 1999 to 2001 (6). Results from our phylogenetic analysis showed that Thess1/GRE99, as well as strains G432/GER99 and 6423/PV/ITA97 (and the United Kingdom 1999 strains), were clustering with strains FRI/BAH97 (accession no. AY326359), isolated in 1997 from the Bahamas, and DES/MB-CAN97 (AY326358), isolated in 1997 from Manitoba, Canada (which also belong to the international 1997–2000 RGI genotype). These findings indicated that this rubella strain was circulating in both Europe and North America at least as early as 1997.

Recent data indicate that internationally circulating rubella viruses exist, even when vaccination programs are conducted. Comprehensive specimen collection and genotypic analysis are necessary to identify and track the emergence and spread of such genotypes.

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## CTX-M β-Lactamase- producing *Escherichia coli* in Long-term Care Facilities, France

**To the Editor:** In long-term care facilities, most endemic infections affect respiratory and urinary tracts, as well as skin and soft tissues (1–3). Infection and colonization by antimicrobial-resistant organisms, in particular those producing plasmid-mediated extended-spectrum β-lactamases (ESBL), are common in long-term care facilities (4). Since 1984, ESBL-producing *Enterobacteriaceae* have spread among French hospitals; within Parisian public hospitals (Assistance Publique, Hôpitaux de Paris), ESBL-producing *Escherichia coli* is the most frequent species found, representing 49.5% of 220 *Enterobacteriaceae* isolated in 2002, mostly in urinary tract infections (5). Among ESBL-producing *Enterobacteriaceae*, CTX-M-type β-lactamases confer a higher level of resistance to cefotaxime and ceftriaxone than to ceftazidime. CTX-M-producing strains are endemic in Latin America, Japan, and certain parts of Eastern Europe; in contrast, these strains are emerging in France,

Western Europe, and the United States (6). We report the first documented outbreak of CTX-M-producing *E. coli* infection in a long-term care facility in France. Our hospital is an 800-bed institution with 300 beds for long-term patients distributed among three units located in two buildings. The outbreak occurred in a 35-bed unit and involved 26 of 47 hospitalized patients from October 2001 to March 2003. This facility hosts patients for extended periods of time or permanently. The index case was identified in October 2001; the patient had a urinary tract infection attributable to an ESBL-producing *E. coli*, which showed resistance patterns not previously found in our hospital. Three new cases were detected within the following 2 months, and all patients had urinary tract infection with the same pattern of resistance. In January 2002, patients were screened for ESBL-producing strains by rectal swabbing and urine culture. The results showed *E. coli* with a high level of resistance to amoxicillin and ticarcillin (MIC > 128 μg/mL), partial restoration of susceptibility to these agents by addition of clavulanic acid (MIC = 16–32 μg/mL), and higher resistance to cefotaxime (MIC > 128 μg/mL) than to ceftazidime (MIC = 32–64 μg/mL.) A cephalosporin/co-amoxiclav synergy test was positive, which suggests a CTX-M ESBL. Strains were also resistant to ciprofloxacin (MIC 64 μg/mL) and gentamicin (MIC > 64 μg/mL) but remained susceptible to trimethoprim-sulfamethoxazole.

Attempts to transfer resistance to β-lactams by conjugation to *E. coli* J53-2 with the 26 strains tested were unsuccessful. In contrast, transformants were obtained with plasmid DNA of the 19 strains tested by electroporation. The transformants' susceptibility pattern was similar to that of the donor strains, except for ciprofloxacin resistance. Analytical isoelectric focusing showed that all

clinical strains and transformants had bands of  $\beta$ -lactamase activity with an alkaline pI of 7.6 and 5.4. Polymerase chain reaction (PCR) amplification of the 26 clinical isolates was positive for bla<sub>CTX-M</sub> and bla<sub>TEM</sub> (7). The 26 strains of *E. coli* had the same profile by repetitive-element PCR and pulsed-field gel electrophoresis, while unrelated control strains had very different profiles. Sequencing in strains isolated from four of the patients identified a CTX-M-15  $\beta$ -lactamase and a TEM-1  $\beta$ -lactamase. The four strains were related to the phylogenetic group B2 and produced the iutA (ferric aerobactin receptor), YuA (*Yersinia* siderophore receptor), and fimH (type I fimbriae) virulence factors (8). Incidence of colonization or infection by the culprit strain was 34.3% (12 of 35 patients) within the initial 4-month period and 55.3% (26 of 47 patients) over a 1-year period.

Intensified hygienic procedures implemented in January 2002 contributed to a decrease in the number of cases in February only; since then, a regular increase of new cases extended the outbreak and caused problems with controlling it. All urinary tract infections were successfully treated with a 15-day course of trimethoprim-sulfamethoxazole; however, reinfection occurred in some. Neither incontinence ( $p = 0.35$ ), dementia ( $p = 0.22$ ), nor previous antibiotic treatment (amoxicillin, amoxicillin-clavulanic acid, extended-spectrum cephalosporins, and fluoroquinolones [ $p = 1.00, 0.30, 0.12, 0.52$ , respectively]) appeared to be risk factors for infection or colonization in our study, but the number of patients is too small to reach a conclusion. However, patients that were infected or colonized had greater functional impairment, especially incontinence and dementia. Nonambulatory status, decubitus ulcers, and feeding tubes were not risk factors for acquiring ESBL-producing *E. coli* in our study.

The outbreak has not been controlled: 13 patients have persistent digestive-tract colonization. Difficulties encountered in controlling such outbreaks may be explained by several factors. Patients cannot be easily isolated in long-term care facilities. Strict isolation and limitation of activity and mobility cannot always be applied because of their impact on social activities.

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## Do Antiborrelial Antibodies Suggest Lyme Disease in Cuba?

**To the Editor:** Lyme disease is the most common vector-borne disease in the United States and parts of Eurasia (1). It represents a considerable emerging infectious disease threat because of its consequences to human health and the difficulties in preventing and controlling it (2,3).

In Cuba, Lyme borreliosis has never been reported. However, in the last 20 years ixodid ticks, mainly *Amblyomma cajennense*, have been found in the human population in the Cuban village of Las Terrazas, Pinar del R o. These ixodid bites were frequent and widespread, especially in children, many of whom were hospitalized without a confirmatory laboratory diagnosis. Affected persons had symptoms associated with Lyme disease such as erythematous macules or papules, fever, fatigue, malaise, headache, arthralgias, myalgias, meningitis, peripheral radiculoneuropathies, and myocarditis (4).

A Cuban researcher, a specialist in