

Medical News

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Antibiotic-Resistant Bacteria Among Residents of Long-Term-Care Facilities

There is limited information about antibiotic-resistant bacteria in community long-term-care facilities (LTCFs). Mylotte and co-investigators have reported on a study whose objective was to obtain data on resistant organisms in residents from community LTCFs admitted to an inpatient acute geriatrics service. Two studies were performed. In the first study, the bacteriology records of all admissions to the acute geriatrics service for the period from November 1, 1998, through June 30, 2000, were reviewed for resistant organisms (methicillin-resistant *Staphylococcus aureus* [MRSA], vancomycin-resistant enterococci [VRE], and resistant gram-negative bacilli). In the second study, residents admitted to the acute geriatrics service during a 2-month period (N = 92 admissions) had surveillance cultures (nares, gastrostomy site, wounds, and urine) for resistant organisms done within 72 hours of admission.

In the retrospective study, there were 727 admissions, of which 437 (60%) had 928 cultures within 72 hours of admission; 590 (64%) of the cultures grew one or more pathogens. Urine (65%) and blood (26%) cultures accounted for 91% of all cultures done. Rates of resistance by culture site were as follows: urine (resistant organism in 16.6% of 373 cultures), blood (6.7% of 60 cultures), wound (52% of 23 cultures), and sputum (40% of 20 cultures). MRSA and enterococci with high-level gentamicin resistance were the most common resistant organisms identified. No VRE were isolated; only 3% of 421 gram-negative isolates were considered resistant strains compared with 19% ($P < .001$) of gram-positive isolates. In the prospective study, 17% of 92 residents were found to have a resistant organism in one or more surveillance cultures; the most common resistant organisms were MRSA and high-level gentamicin-resistant enterococci. Only one resident was found to have VRE in a rectal swab culture; resistant gram-negative bacilli also were uncommon.

The authors concluded that among residents of community LTCFs admitted to an acute geriatrics service, resistant organisms were identified infrequently (< 20% of admissions). MRSA was the most common resistant organism; VRE and resistant gram-negative bacilli were rare. These findings vary from those of other studies, suggesting that there may be geographic variation in the epidemi-

ology of resistant organisms among residents of community LTCFs.

FROM: Mylotte JM, Goodnough S, Tayara A. Antibiotic-resistant organisms among long-term care facility residents on admission to an inpatient geriatrics unit: retrospective and prospective surveillance *Am J Infect Control* 2001;29:139-144.

Persistence of a Clone of Methicillin-Resistant *Staphylococcus aureus* in a Burns Unit

Al-Haddad and co-investigators from Curtin University of Technology, Perth, Western Australia, studied 128 methicillin-resistant *Staphylococcus aureus* (MRSA) isolates from a burns unit in 1992 and 1997. Isolates were studied by resistotyping, plasmid analysis, and pulsed-field gel electrophoresis (PFGE) of *Sma*I-digested chromosomal DNA to ascertain whether a clone of MRSA had persisted in the unit or whether different clones had been introduced at different times. All of the MRSA isolates produced beta-lactamase and had high minimum inhibitory concentrations to methicillin (> 256 mg/L). All were resistant to tetracycline, kanamycin, cadmium acetate, and mercuric chloride. Most were resistant to gentamicin, neomycin, erythromycin, chloramphenicol, trimethoprim, ciprofloxacin, propamidine isethionate, and ethidium bromide, and were susceptible to minocycline, vancomycin, and teicoplanin.

None of the 1992 isolates was resistant to mupirocin, but 56% and 19% of the 1997 isolates expressed high- and low-level mupirocin resistance, respectively. Many of the 1997 isolates had acquired a 38-kb plasmid encoding high-level mupirocin resistance. The 1992 isolates had two main PFGE patterns; 82% of them belonged to PFGE pattern 1. The 1997 isolates had PFGE pattern 1, the same as most of the 1992 isolates. All MRSA isolates from both years carried the *mecA* gene in the same *Sma*I fragment.

These findings demonstrated that a clone of MRSA that was prevalent in the burns unit in 1992 had persisted and had become the predominant clone in 1997.

FROM: Al-Haddad AM, Udo EE, Mokadas EM, Sanyal SC, Grubb WB. Persistence of a clone of methicillin-resistant *Staphylococcus aureus* in a burns unit. *J Med Microbiol* 2001;50:558-564.