TABLE
RELAPSE OF METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS*

Case No.	Initial Positive Sites*	Negative Cultures During Remission	Remission Duration (mo)	Band Difference
1	Urine	None	8	2
2	Urine, nose	5 urine, 1 nasal	8	2
3	Conjunctiva, nose	3 conjunctiva, 3 nasal	20	2
4	Urine	2 urine	20	3
5	Urine, wound	2 urine, 3 wound	9	3
6	Nose, sputum	3 nose, 3 sputum	9	4
7	Urine, nose	4 urine, 3 nose	11	5
8	Urine, nose	4 urine, 1 nasal	24	5

* Nasal cultures were performed in all cases.

onized" because extra secretion precautions were an impediment to their freedom in activities of daily living. Individuals were selected for a second PFGE determination when 8 to 24 months had passed without an MRSA isolate. We were interested in the genetic relationship between the 2 isolates and wondered whether the delayed isolate represented relapse or reinfection. The table presents the initial sites infected or colonized, the duration of apparent remission, the number and site of negative cultures obtained during "remission," and the genetic relationship between the initial and the delayed isolates. We recommend 3 negative cultures of previously colonized sites. The authors did not individually treat these residents. In 3 cases, the sets of isolates varied by 2 bands; in 2 cases, by 3 bands; in 1 case, by 4 bands; and in 2 cases, by 5 bands. In our database, a difference of 3 bands corresponds to a dice coefficient of 84.2% to 85.7%.

It is unclear what criteria should be used to differentiate probable relapse from reinfection. The relatively long durations between the sets of isolates could allow time for "genetic drift" with one or two mutations. None of these individuals had moved from their original nursing unit during the period of observation. We have previously reported statistically significant clustering of identical PFGE isolates on nursing units in time and space.[2] This makes reinfection with a genetically related strain a possibility. Our data, however, make us suspicious that residents of nursing homes may harbor a strain for prolonged periods despite apparent eradication.

REFERENCES

1. Herwaldt LA, Pottinger JM, Coffman S, Tjaden J. Molecular epidemiology of methicillin-resistant *Staphylococcus aureus* in a Veterans Administration Medical Center. *Infect Control Hosp Epidemiol* 2002;23:502-505.
2. Drinka PJ, Faulks JT, Gauerke C, Goodman B, Stemper M, Reed K. Adverse events associated with methicillin-resistant *Staphylococcus aureus* in a nursing home. *Arch Intern Med* 2001;161:2371-2377.

Paul J. Drinka, MD
Wisconsin Veterans Home
King, Wisconsin
Mary E. Stemper, MT (ASCP), MS
Marshfield Clinics Laboratory
Marshfield, Wisconsin
Cathy Gauerke, MT (ASCP)
Peggy Krause, RN, CCRC
Lori Nest, RNC
Wisconsin Veterans Home
King, Wisconsin
Kurt D. Reed, MD
Marshfield Clinics Laboratory
Marshfield, Wisconsin

The authors decline to reply.

A Gown Is a Gown Is a Gown: Or Is It?

To the Editor:

The results of the study by Srinivasan et al.[1] published in the August 2002 issue of *Infection Control and Hospital Epidemiology* on the effectiveness of cover gowns in reducing the nosocomial transmission of vancomycin-resistant enterococci (VRE) in an intensive care unit warrant comment.

In an earlier study listed in the references,[2] the researchers concluded that the use of cover gowns had no influence on the rate of transmission. This is particularly noteworthy because the two studies were comparable in length (4 to 5 months), and the same cover gown was used in both. The results of the two studies should have been similar, despite the behavioral component of healthcare worker compliance with gown use and hand hygiene. However, the results were contradictory.

In another study on the influence of cover gowns on VRE,[3] the researchers found that gown use proved to be "protective in reducing VRE acquisition in an MICU with high VRE colonization pressure." However, during the 18-month period of this study, personnel wore reusable gowns that were made of a fluid-resistant material (L. Mundy, MD, personal communication, October 3, 2002).

Although the specifics of that fluid-resistant capability are not known, that is not the case with the disposable polyethylene gowns used in the other two studies. The material was described as water resistant after it displayed its level of resistance when subjected to the challenge presented by the American Association of Textile Colorists and Chemists Hydrostatic Head Test 127. Expressed in terms of the height of a column of water, the material was found to resist penetration until the water reached 11.5 cm.[2] (The maximum height that the test can accommodate is 55 cm, which is the equivalent of 0.8 pound of pressure per square inch.)

The Hospital Infection Control Practices Advisory Committee qualifies its recommendation about the use of a "clean, non-sterile gown"[4] in the manner that the Occupational Safety and Health Administration has described as the "task and degree of exposure anticipated."[5] Thus, the selection of a cover gown is not a matter of whether it is reusable or disposable, but rather one that should be predicated on its protective capability for the anticipated level of exposure.[6]

https://doi.org/10.1086/503476 Published online by Cambridge University Press

REFERENCES

1. Srinivasan A, Song X, Ross T, et al. A prospective study to determine whether cover gowns in addition to gloves decrease nosocomial transmission of vancomycin-resistant enterococci in an intensive care unit. *Infect Control Hosp Epidemiol* 2002;23:424-428.
2. Slaughter S, Hayden MK, Nathan C, et al. A comparison of the effect of universal use of gloves and gowns with that of glove use alone on acquisition of vancomycin-resistant enterococci in a medical intensive care unit. *Ann Intern Med* 1996;125:448-456.
3. Puzniak LA, Leet T, Mayfield J, et al. To gown or not to gown: the effect on acquisition of vancomycin-resistant enterococci. *Clin Infect Dis* 2002;35:18-25.
4. Hospital Infection Control Practices Advisory Committee (HICPAC). Recommendations for preventing the spread of vancomycin resistance. *MMWR* 1995;44(RR12):1-13.
5. U.S. Department of Labor, Occupational Safety and Health Administration. Occupational exposure to bloodborne pathogens: final rule. *Federal Register* 1991;56:64004-64182.
6. Belkin NL. Gowns: selection on a procedure-driven basis. *Infect Control Hosp Epidemiol* 1994;15:713-716.

Nathan L. Belkin, PhD
Clearwater, Florida

The authors decline to reply.

Nosocomial Infections in a Turkish University Hospital: A 2-Year Survey

To the Editor:

Nosocomial infections represent an important problem worldwide as a major cause of morbidity, mortality, and economic consequences.[1,2] Epidemiologic and etiologic characteristics of nosocomial infections have varied among countries and even among different hospitals in the same country. In this study, we determined the epidemiologic and etiologic characteristics of nosocomial infections in a Turkish university hospital for 2 years.

The study was conducted in Pamukkale University Hospital from January 2000 to December 2001. Criteria for defining nosocomial infections were those published by the Centers for Disease Control and Prevention.[3] All data, including admission date, services, risk factors, infection sites, isolated microorganisms and their susceptibility patterns, and treatment, were recorded using SPSS software (SPSS, Inc., Chicago, IL).

TABLE 1
NOSOCOMIAL INFECTION RATES BY CLINICS

Clinic	No. of Patients	No. of Nosocomial Infections	%
Anesthesiology Intensive Care Unit	434	113	26
Neonatal Intensive Care Unit	240	46	19.2
Neurosurgery	466	58	12.4
Pediatrics	671	63	9.4
Dermatology	48	4	8.3
Internal medicine	940	50	5.3
General surgery	793	38	4.8
Orthopedic surgery	657	31	4.7
Cardiovascular surgery	134	4	3
Neurology	137	4	2.9
Urology	816	19	2.3
Plastic surgery	305	7	2.3
Chest diseases	152	2	1.3
Pediatric surgery	270	3	1.1
Obstetrics and gynecology	2920	29	1
Otorhinolaryngology	869	6	0.7
Others	1,173	3	0.3

A total of 666 nosocomial infections were detected in 480 (4.35%) of 11,025 patients hospitalized during 2000 and 2001 (6.04 infections per 100 patients). The relative frequency of nosocomial infection was highest in the Anesthesiology Intensive Care Unit (26%), followed by the Neonatal Intensive Care Unit and the Neurosurgery Unit (Table 1).

The most frequent types of nosocomial infections were urinary tract infections (n = 167 [25.1%]), pneumonia (n = 155 [23.3%]), bacteremia (n = 117 [17.6%]), and surgical-site infections (n = 95 [14.3%]). One hundred thirty-two other infections accounted for an additional 19.8%.

A total of 801 microorganisms were isolated from 480 patients. The most frequently isolated microorganisms were *Staphylococcus aureus* (18.7% [with 65% of these being methicillin-resistant *S. aureus*]), *Pseudomonas aeruginosa* (16%), coagulase-negative staphylococci (13.1%), and *Acinetobacter baumannii* (10.1%) (Table 2).

The observed attack rate of 6 infections per 100 patients in this study was consistent with the rates of 3.5% and 11.6% reported from multiple other countries.[4-9]

In this study, the highest infection rates involved intensive care unit patients for whom the most common nosocomial infection was pneumonia, followed by urinary tract infections. In other services, urinary tract and surgical-site infections were

TABLE 2
DISTRIBUTION OF ISOLATED MICROORGANISMS

Microorganism	No.	%
Staphylococcus aureus	150 (98 MR)	18.7
Pseudomonas aeruginosa	128	16
Coagulase-negative staphylococci	105 (69 MR)	13.1
Acinetobacter baumannii	81	10.1
Klebsiella pneumoniae	77	9.6
Enterobacter cloacae	73	9.1
Escherichia coli	68	8.5
Candida species	63	7.9
Others	56	7
Total	801	100

MR = methicillin resistant.

https://doi.org/10.1086/503476 Published online by Cambridge University Press