

## References

1. Dornbusch K, Miller GH, Hare RS, Shaw KJ, and the ESGAR Study Group. Resistance to aminoglycoside antibiotics in gram-negative bacilli and staphylococci isolated from blood. Report from a European collaborative study. *J Antimicrob Chemother* 1990; **26**, 131–144.
2. Dornbusch K, and the European Study Group on Antibiotic Resistance. Resistance to  $\beta$ -lactam antibiotics and ciprofloxacin in gram-negative bacilli and staphylococci isolated from blood: a European collaborative study. *J Antimicrob Chemother* 1990; **26**, 269–278.
3. The Greek Society for Microbiology. Antibiotic resistance among gram-negative bacilli in 19 Greek hospitals. *J Hosp Infect* 1989; **14**, 177–181.
4. Sanford JP. Lower respiratory tract infections. In *Hospital Infections*. Bennet JV Brachman PS, Eds. Boston: Little Brown, 1986.
5. National Committee for Clinical Laboratory Standards. Performance standards for antimicrobial disc susceptibility tests. Publication NoM2A2. Villanova, Pa: NCCLS, 1982.
6. McGowan JE. Antimicrobial resistance in hospital organisms and its relation to antibiotic use. *Rev Infect Dis* 1983; **5**, 1033–1048.
7. McGowan JE. Is antimicrobial resistance in hospital microorganisms related to antibiotic use? *Bull NY Acad Med* 1987; **63**, 253–268.
8. Brown EH, Spencer RC, Brown JMC. The emergence of bacterial resistance in hospitals—a need for continuous surveillance. *J Hosp Infect* 1990; **15** suppl. A, 35–39.
9. Tzelepi E, Tzouveleakis LS, Vatopoulos AC, Mentis AF, Tsakris A, Legakis NJ. High prevalence of stably derepressed class-I  $\beta$ -lactamase expression in multiresistant clinical isolates of *Enterobacter cloacae* from Greek hospitals. *J Med Microb* 1992; **37**, 91–95.
10. Vatopoulos AC, Philipon A, Tzouveleakis LS, Komninou Z, Legakis NJ. Prevalence of a transferable SHV-5 type  $\beta$ -lactamase in clinical isolates of *Klebsiella pneumoniae* and *Escherichia coli* in Greece. *J Antimicrob Chemother* 1990; **26**, 635–648.
11. Vatopoulos AC, Tsakris A, Tzouveleakis LS, *et al.* Diversity of aminoglycoside resistance in *Enterobacter cloacae* in Greece. *Eur J Clin Microb Infect Dis* 1992; **11**, 131–138.

Sir,

**Mupirocin susceptibility *in vitro* and nasal eradication of epidemic methicillin-resistant *Staphylococcus aureus***

In order to investigate the therapeutic efficacy of mupirocin we studied its activity in an outbreak of nosocomial infection due to methicillin-resistant *Staphylococcus aureus* (MRSA) in our hospital.

Nasal carriers of MRSA were treated with calcium mupirocin nasal ointment 2% 8-hourly for seven days. From April 1990 until June 1992, MRSA isolates (nasal and/or cutaneous and/or pharyngeal) were obtained from 694 patients. Sixty-eight patients were colonized by MRSA with a MIC  $> 4 \text{ mg l}^{-1}$  of mupirocin. Of these, 75% had been colonized previously by susceptible strains. The MICs of these low-level mupirocin resistant strains ranged from 8 to  $16 \text{ mg l}^{-1}$ , and those of susceptible strains from 0.06 to  $0.25 \text{ mg l}^{-1}$ .

The mupirocin-resistant isolates were found in the intensive care unit and in three of the four hospital wards where MRSA carriers were isolated.

We assessed the efficacy of mupirocin nasal treatment in bacterial eradication from this site, in patients colonized at multiple sites. Eradication was defined as negative nasal swabs taken at weekly intervals for three weeks after treatment. Table I compares nasal eradication in patients colonized in the nose alone with those colonized at multiple sites by strains with low-level mupirocin resistance.

Although the difference in failure rates was not statistically significant, probably due to the small sample size, these data seem to indicate that colonization at multiple sites is clinically more important in failure of topical nasal treatment than low-level mupirocin resistance.

**M. C. Gaspar**  
**P. Sánchez**  
**P. Uribe**  
**R. Coello**  
**P. Arroyo**  
**F. Cruzet**

*Preventative Medicine Dept.,  
 University Hospital San Carlos,  
 Martín Lagos s/n,  
 Madrid 28040, Spain.*

Table I. *Response to mupirocin by resistant MRSA strains: comparison of response between patients colonized in nose alone with those colonized at multiple sites.*

	Nose alone	Multiple sites
Eradication	12 (92%)	14 (61%)
Persistence	1	9
Total	13	23

Fisher's exact test  $P=0.059$ .

## References

1. Sutherland RN, Boon RJ, Griffin KE, Masters PJ, Slocombe BC, White AR. Antibacterial activity of mupirocin (pseudomonic acid), a new antibiotic for topical use. *Antimicrob Agents Chemother* 1985; **27**: 495-498.