

O347

Abstract (oral session)

Mupirocin-resistance in staphylococci after three years of universal methicillin-resistant *Staphylococcus aureus* (MRSA) admission screening

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Objectives: The Department of Health mandated MRSA screening for all elective hospital admissions in England from April 2009, and all emergency admissions as soon as possible afterwards, with 'effective decolonisation' for carriers. Increased selection pressure was expected, favouring increased mupirocin resistance. The BSAC Resistance Surveillance Project has measured mupirocin (MUP) MICs and tested for *mupA* genes in staphylococci from bacteraemia since January 2007, and in *S. aureus* from hospital-onset (>48 hours) lower respiratory tract infections (LRTI) since October 2008 in the UK and Ireland. **Methods:** In total, 48 centres collected 2874 *S. aureus* and 1020 coagulase-negative staphylococci (CoNS) isolates from 2007 to 2011. MICs were determined centrally by BSAC agar dilution and interpreted by BSAC/EUCAST breakpoints. *mupA* genes, encoding high-level MUP resistance, were sought by PCR. Isolates were considered non-susceptible (NS) to MUP if MIC>1 mg/L or *mupA*-positive. **Results:** There was no evidence of increasing prevalence of MUP-NS isolates, averaging 2.6% in blood *S. aureus*, 4.7% in LRTI *S. aureus* and 27.9% in blood CoNS. Compared to blood, LRTI *S. aureus* were more likely to be MUP-NS because a higher proportion of them were MRSA (36 vs 22% over this period) or from intensive care (42 vs 7%). Most MUP-NS *S. aureus* (63%) had only low-level resistance (MIC<256mg/L and *mupA*-negative), but most MUP-NS CoNS (80%) had high-level resistance (MIC≥256 mg/L or *mupA*-positive) **Conclusion:** Susceptibility to mupirocin did not decline significantly in *S. aureus* or CoNS in the first three years after the introduction of universal admission screening early in 2009. However, non-susceptibility is common in blood CoNS (28%), blood MRSA (10%) and hospital-onset respiratory MRSA (13%) suggesting the potential for it to emerge more widely under continued selective pressure.

| % MUP-NS | LRTI <i>S. aureus</i> | | Blood <i>S. aureus</i> | | Blood CoNS | |
|----------|-----------------------|---------------|------------------------|---------------|-----------------|-----------------|
| | MSSA n=439 | MRSA n=246 | MSSA n=1704 | MRSA n=485 | MSCoNS n=268 | MRCoNS n=752 |
| 2007 | - | - | 0.0 | 4.4 | 10.3 | 36.6 |
| 2008 | - | - | 1.2 | 12.6 | 4.1 | 36.9 |
| 2009 | 0.8 | 11.5 | 0.0 | 8.4 | 10.4 | 37.6 |
| 2010 | 0.0 | 12.0 | 0.2 | 12.2 | 11.5 | 33.3 |
| 2011 | 0.0 | 15.3 | 1.1 | 11.3 | 2.8 | 32.2 |
| Total | 0.2 | 12.6 | 0.6 | 9.9 | 7.5 | 35.2 |