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Antimicrobials: Epidemiology of MRSA, VRE and other Gram-positives

Molecular characterisation of *Staphylococcus aureus* isolated from patients with hospital readmissions

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**Objectives:** Patients with hospital readmissions are prone to nosocomial infections and to colonization with MRSA. It's unclear whether persistent MRSA carriers will continue to harbour the same MRSA genotype during readmissions.

**Methods:** We carried out molecular characterization of *Staphylococcus aureus* strains (methicillin sensitive and methicillin-resistant) isolated from patients who were found to be MRSA carriers at index admission and continued to be carriers of *S. aureus* during hospital readmissions.

**Results:** Thirty three patients were included in the study from which 140 strains of *S. aureus* were isolated. Nearly half of the patients who were colonized with MRSA continued to harbour the same genotype during their readmissions, while a third acquired MRSA with a different genotype, and ~18% became MRSA free and methicillin-sensitive *S. aureus* carriers. The vast majority of strains belonged to MLST clonal complex 5 (CC5) and *spa* clonal complex 002. All the patients that received eradication treatment during their admissions eventually acquired MRSA strains exhibiting various genotypes or methicillin-sensitive *S. aureus*, while most of those who did not receive any eradication treatment continued to harbour the same MRSA genotype.

**Conclusion:** Patients with hospital readmissions are prone to MRSA colonization exhibiting various genotypic profiles despite eradication treatment