

O180

Oral Session

New transmission routes and genotypic diversity: are we looking at a new MRSA?

GENOTYPIC DIVERSITY OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) STRAINS COLONISING AND INFECTING PATIENTS IN A LARGE MULTINATIONAL PROSPECTIVE COHORT STUDY.

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Objectives: Assessment of the genotypic diversity of methicillin-resistant *Staphylococcus aureus* (MRSA) according to the site of acquisition is necessary to control and measure the extent of the mixing between community-onset (CO) and healthcare-associated strains (HCA) in European countries.

Methods: The study was part of a multicenter, prospective, longitudinal 2-year cohort study funded by the European Community's Seventh Framework Programme [SATURN FP7/2007-2013]. Nasal screening for MRSA was performed at hospital admission (HA), hospital discharge (HD) and during hospitalisation into 6 surgical and medical wards of 3 teaching hospitals in Italy, Serbia and Romania. CO-strains were defined as those selected at HA in patients without any of the following: admission from long-term care facilities; central venous/urinary catheter, dialysis, ambulatory, and hospitalization within 30 days. Chromogenic medium (MRSAid, bioMérieux, Marcy l'Étoile, France) was used for MRSA identification. Multilocus Variable Number of tandem repeat assay and multilocus sequence typing (MLST) analysis was used for molecular characterization of colonizing and infecting strains.

Results: In a 2-year study 10,232 patients were enrolled. Average rate of colonization was 29 by 1,000 hospital admissions and 30 by 1,000 hospital discharges. Rate of infection was 43 per 10,000 hospitalizations. Overall, at HA CC5 was more frequently identified than CC1 (45% versus 35%), while at HD CC1 was the most frequently isolated (43% versus 24%). Clinical MRSA strains belonged mostly to CC5 and CC8 in equal abundance (41% each). Distribution of strains was extremely heterogeneous among countries: Italy isolated more CC5, while Serbia and Romania isolated more CC1 and ST239 (73% and 80.2%, respectively), with no significant difference between CO- and HCA-strains and clinical isolates.

Conclusions: In some European countries there is ongoing mixing between CO- and HCA-strains. Community-based infection control strategies should be more carefully organised in order to reduce the influx of CO-strains into the healthcare setting.