

New Patterns of Methicillin-resistant *Staphylococcus aureus* (MRSA) clones in the community and hospital setting, Argentina 2009

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MRSA is an increasing problem worldwide, both in hospitals (healthcare-associated-HA) and in the community (community-associated-CA). In Argentina, the spread of the ST5-IV and ST5-I clones among CA- and HA-MRSA strains respectively has been reported.

Methods Consecutive *S. aureus* clinical isolates were collected during Nov-2009 from 66 hosp in 20 Argentina provinces and BA city and subjected to antimicrobial susceptibility testing. Healthcare-onset (HO) infection was defined when MRSA was obtained after 48 hours of hospitalization. A MRSA was considered to be an HA strain if it was resistant to at least 2 of non-beta-lactam antibiotics. MRSA were studied by SCCmec and spa-typing, PVL, PFGE and MLST.

Results A total of 591 *S. aureus* were collected; 375 (63%) were from community-onset (CO) infections and 322 (54%) were MRSA (37% CA- and 17% HA-). MRSA proportion differed significantly between CO (58%) and HO (49%) infections. Among HO/CO infections, distributions (%) were: 12/53 CA-MRSA, 37/5 HA-MRSA and 51/42 MSSA. The molecular typing determined that CO-infections were associated mainly to PFGE type N-ST30-SCCmecIVc-t019-PVL⁺ (46%) and I-ST5-SCCmecIVa-t311-PVL⁺ (37%) clones. The proportion of ST30-IV and ST5-IV differed significantly between North and South of Argentina (65% and 30% vs 20% and 50% respectively). ST8-SCCmecIVc-t008-PVL⁺-ACME⁻ (South American-USA300) and R-ST72-SCCmecIV-t148-PVL⁻ clones accounted for 2% (each) of CO-MRSA. In contrast, HO-infections were associated with PFGE type A-ST5-SCCmecI-t149 (46%), I-ST5-SCCmecIVa-t311-PVL⁺ (20%), C-ST100-SCCmecIVNv-t002-PVL⁻ (12%), R-ST72-SCCmecIV-t148-PVL⁻ (7%) and B-ST239-SCCmecIIIA-t037-PVL⁻ (6%) clones.

The epidemiology of MRSA is changing in Argentina, with higher rates in the CO- than in the HO-infections, mainly associated with the spread of two CA-MRSA clones.

Importantly, the second more frequent clone causing HO-MRSA infections was the epidemic ST5-IV CA-MRSA clone.