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ePoster Viewing

Resistance surveillance & epidemiology: MRSA, VRE & other Gram-positives

Low occurrence of the new species *Staphylococcus argenteus* in a large *Staphylococcus aureus* collection of human isolates from Belgium 2007-2015

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Background: *Staphylococcus argenteus* is a novel *Staphylococcus* species closely related to *Staphylococcus aureus* that has recently been described. This species presents a non-pigmented phenotype on chocolate agar plates due to the lack of the genes encoding staphyloxanthin. Routine phenotypic and genotypic methods used for identification misclassify this novel species as *S. aureus*. Therefore, its prevalence and geographical distribution remain unknown. In this work, we have determined the human *S. argenteus* prevalence in Belgium by a retrospectively analysis of a *S. aureus* human collection.

Material/methods: A total of 1903 human *S. aureus* isolates collected between 2007 and 2015 were retrospectively analysed for the identification of *S. argenteus*. Most isolates (n=1650) were collected from clinical laboratories (n=120), and the remaining (n=253) were isolated from nasal samples of healthy children attending kindergartens (n=11). All isolates were analyzed by triplex 16S-*mecA-nuc* PCR, *spa* typing and tested phenotypically for growing on chocolate agar. Isolates with non-pigmented phenotype on chocolate agar were further analysed by *rpoB* sequencing. Isolates classified as *S. argenteus* were further investigated for antimicrobial susceptibility, presence of toxin, resistance and immune evasion cluster (IEC) genes, MLST and SCC*mec* typing.

Results: Seventy-three (3.8%) isolates were non-pigmented on chocolate agar plates, but most (n=70) were grouped with *S. aureus* control isolates by the *rpoB* typing. Only three isolates (0.16%) belonged to *S. argenteus* isolates by *rpoB* sequence typing. These three isolates were collected from two hospitals and one kindergarten. The hospital isolates were methicillin resistant and were typed as ST2250/t6675-SCC*mec* IV and ST3240/t6675-SCC*mec* IV. The remaining isolate was methicillin susceptible and belonged to ST2250/t5787. The three isolates were full susceptible to non-β-lactam antimicrobials, but carried IEC genes (*sak*, *scn*). One hospital isolate was also positive for the enterotoxins genes *selk* and *selq*.

Conclusions: This study represents the first prevalence study of this new species in a European country. Although its prevalence in Belgium seems low, it is to note that the first isolate was recovered in 2007. Further studies are needed to determine the geographical distribution of this new species.