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ePoster Viewing
Diagnostic bacteriology – non-culture based, including molecular and MALDI-TOF

Panton-Valentine leukocidin (PVL) in Staphylococcus aureus isolates: prevalence in healthy carriers and in clinical samples in Switzerland

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Background: Panton-Valentine leukocidin (PVL) is a toxin responsible for increased severity in *Staphylococcus aureus* infections. Nevertheless, clinical isolates of *S. aureus* are rarely tested for the PVL-encoding genes. Such PVL positive *S. aureus* isolates are distributed among the patients as well as the healthy population, but their frequencies are not known in Switzerland. The aim was to compare the frequency of PVL positive *S. aureus* isolates in healthy Swiss carriers and in clinical specimens.

Material/methods: *S. aureus* isolates from diverse clinical samples were selected retrospectively. Nasal swaps from healthy individuals were collected, and *S. aureus* isolates were analysed for PVL. Detection of the lukS-PV/ lukF-PV genes was done with real time PCR (RIDA PVL kit, rBiopharm on a LighCycler 2.0, Roche).

Results: Sixty *S. aureus* were isolated from a total of 197 healthy individuals by nasal swabs. No PVL-positive *S. aureus* was found among these healthy carries. Eighteen (30%) of the 60 clinical isolates were tested positive for PVL. Eleven isolates derived from wound swabs, six from biopsies and sterile fluids and one was isolated from a blood culture. Interestingly, one third (six) of the PVL-positive isolates were Methicillin susceptible *S. aureus* (MSSA) and the remaining (12) were MRSA.

Conclusions: The prevalence of PVL-positive *S. aureus* among the healthy Swiss population (0 out of 60) seems to be very low in comparison to the clinical isolates ($p < 0.001$). This suggests that former healthy carriers of PVL have a high risk for severe *S. aureus* infections. Of interest is that not only MRSA but also MSSA do contain the PVL. Such isolates may worsen the clinical outcome and may require an adjusted treatment. Nevertheless, the detection of the lukS-PV/ lukF-PV genes is seldom asked in clinical microbiology laboratories suggesting underestimation of PVL-positive MSSA's.