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Abstract (poster session)

**Evaluation of the new HyBeacon-based polymerase chain reaction (PCR) assay, FluoroType MRSA, for the direct detection of methicillin-resistant Staphylococcus aureus (MRSA) in clinical specimens**

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**Objectives:** We performed the first evaluation of the new FluoroType (FT) MRSA assay (Hain Lifescience, Nehren, Germany) for the direct detection of MRSA in clinical swab specimens. The new FT MRSA test is based on HyBeacon fluorescence-technology and is performed on the FluoroCycler (Hain Lifescience). **Material and Methods:** The study consisted of two parts: Part A: Random collection of swab specimens of MRSA-unknown patients in two hospitals in Heidelberg. Part B: Collection of MRSA-culture positive and -negative specimens in the routine department of Laboratory Limbach Heidelberg. For DNA isolation the Spherolyse® Extraction Kit (Hain Lifescience) was used. Two swab specimens from patients with suspect for MRSA were selected from each body site. One swab was inoculated in Spherolyse buffer, and then inoculated on CHROMagar MRSA, CNA agar and into a thioglycollate broth (all Becton Dickinson, Heidelberg, Germany). The thioglycollate broth was incubated for 24 h and inoculated on CNA agar and CHROMagar. The lysis buffer was vortexed for 10 min, and afterwards inoculated at 95°C for 15 min. 6 µl of the DNA lysate was used for FluoroType MRSA-PCR. *S. aureus*-colonies were identified by MALDI Biotyper (Bruker Daltonics, Bremen). MRSA detection from cultured MRSA colonies was realized by a PCR-based assay (GenoType MRSA, Hain Lifescience). **Results:** Study Part A: Of 402 specimens, 15 specimens were MRSA-culture positive. All of the 15 MRSA-culture positive were positive by the FT MRSA assay. For 3 specimens the FT MRSA assay showed a positive result, while culture was negative. Sensitivity, specificity, negative predictive value and positive predictive value were 100%, 99.7%, 93.8% and 100%. Study Part B: Of 212 specimens, 82 were MRSA-culture positive. All of the 82 MRSA-culture positive specimens were positive by the FT MRSA assay. For 5 specimens the FT MRSA assay showed a positive result, while culture was negative. Sensitivity and specificity of the FT MTB were 100% and 96.1%. **Conclusions:** The new FluoroType MRSA method (Hain Lifescience) showed an excellent sensitivity and specificity for the detection of MRSA in clinical swab specimens. The turnaround time of the FT MRSA assay is approximately 20 min for sample set up and DNA isolation and 2.15 hours for amplification and detection.