P2300 Comparison of non-invasive Staphylococcus aureus sampling methods on lesional skin in patients with atopic dermatitis

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Background: Atopic dermatitis (AD) is a frequent disease of the skin and there is a growing body of evidence between the link of Staphylococcus aureus (SA) colonization and degree of severity of disease. No gold-standard for the detection method of SA on skin lesions from AD-patients exists. To establish the optimal non-invasive SA sampling method the three most commonly used methods were compared. Thereby we set out to determine the most sensitive method for qualitative detection and quantification of SA on the skin lesions from AD-patients for clinical future studies as well as in clinical routine. In addition effectiveness of skin disinfection to remove SA colonisation was investigated.

Materials/methods: At 30 patients suffering from AD three different non-invasive SA sampling methods at skin lesions, detergent scrubbing, moist swabbing and tape stripping, were performed before and after skin disinfection at defined skin areas. A standard mixture of Octenindihydrochlorid and 2-Phenoxyethanol was applied locally at least 1 minute for skin disinfection. Two different SA selection agars, mannitol-salt-agar (MSA) and SA-chromID (SAID) were used for bacterial growing.

Results: The disinfection of the skin lesions leads to a significant reduction on the bacterial load of SA independent of the used sampling method or the selected agars, however up to 47% stayed colonized. We detected a significant difference in quantifying the bacterial load of SA between the three different sampling methods on naïve skin lesions. The qualitative detection of SA on naïve skin was most effective with the detergent scrub or moistened swab technique where the detected colonization rate was 86% compared to the less effective tape stripping technique with 67% both on SAID agar. In comparison MSA was significantly less sensitive regarding detection of SA.

Conclusions: Detergent scrubbing or moist swabbing on a defined skin area should be considered as standard sampling method to detect the efficacy of topic antistaphylococcal therapeutics and in qualitative detection of SA. Interestingly the used local disinfection procedure reduced the bacterial load significantly but was not 100% effective, so other disinfection regimes should be considered in AD-patients when de-colonization of certain skin areas is required.