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Abstract (poster session)

Nationwide survey of methicillin-resistant *Staphylococcus aureus* harbouring mecALGA251 reveals a reservoir in ruminants

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Objectives: In this study the epidemiological impact of isolates harbouring the recently discovered mecALGA251 in a MRSA low prevalence country was investigated. **Methods:** Retrospective and prospective search for phenotypic positive but genotypic negative MRSA was performed. Collections screened retrospectively included all Danish MRSA cases since 1988 (n= 7,200) as well as all Danish bacteremia cases since 1975 (n=38,000). Isolates previously tested resistant to methicillin, oxacillin or cefoxitin and negative for the mecA gene were further tested for the presence of the recently discovered mecA gene variant, mecALGA251, by PCR. The genetic background of all mecALGA251 positive isolates was determined by spa typing. Pro-spective screening for mecALGA251 was introduced as routine in the Danish Staphylococcus reference laboratory by August 2011. Clinical data was obtained from 22 patients by interviews and review of discharge summaries in the Zealand region. In four cases samples were taken from animals (cow, horse, dog and sheep) with suggestive contact to persons positive for mecALGA251. **Results:** In total, 104 persons were found to be carrying or infected by mecALGA251 positive MRSA. One case dated back to 1975, one to 1992, then no isolates were found until 2003 where after the annual numbers increased to reach 28 by the 11 Nov. 2011 constituting 2-3 % of the total number of MRSA. Isolates could be grouped in two genetic lineages CC130 and CC1943. Clinical cases from Zealand were further investigated (n=22). Two patients had postoperative bacteremia. In the other 20 cases a wide spectrum of infections was seen, dominated by skin and soft tissue infection (n=11), postoperative infections (n=4) and two bacteriuria. Three individuals were symptom free and MRSA (CC130) was only detected by screening cultures. In four cases there was a suggestive contact between patient and animals: cows, sheep, butcher (profession). In two cases with cow resp. sheep contact, similar strains by PFGE analysis were isolated from owner and animal (one of these in a patient with bacteremia) **Conclusions:** Since 2003 the number of isolates has increased and mecALGA251 is now found in 2-3% of all new MRSA cases in Denmark. In two cases screening of livestock animals in vicinity of infected persons resulted in the first direct evidence for bo-vine and ovine reservoirs with transmission to humans.