Occurrence, species distribution, antimicrobial resistance and clonality of methicillin- and erythromycin-resistant staphylococci in the nasal cavity of domestic animals - DTU Orbit (03/10/2019)

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Beta-Lactams and macrolides are important antibiotics for treatment of staphylococcal infections in both humans and animals. The aim of the study was to investigate the occurrence, species distribution and clonality of methicillin and erythromycin-resistant staphylococci in the nasal cavity of dogs, horses, pigs, and cattle in Denmark. Nasal swabs were collected from a total of 400 animals, including 100 individuals of each species. Methicillin and erythromycin-resistant staphylococci were isolated on selective media, identified by 16S rDNA sequencing, and typed by pulsed field gel electrophoresis (PFGE). Methicillin-resistant coagulase-negative staphylococci (MRCoNS) harbouring mecA were isolated from horses (50%) and dogs (13%), but not from food animals. The species identified were S. haemolyticus (n = 21), S. sciuri (n = 13), S. epidermidis (n = 8), and S. warneri (n = 2). mecA-mediated methicillin resistance in S. vitulinus was described for the first time. Methicillin-resistant S. aureus was not detected. PFGE analysis revealed the presence of specific MRCoNS clones in samples originating from the same veterinary hospital or equine farm. Erythromycin-resistant S. aureus (ERSA) was detected in 38% of pigs and all isolates harboured a constitutively expressed erm

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