Occurrence of LA-MRSA and CA-MRSA in a population at higher carriage risk

Bacterial resistance is one of the most serious phenomenon of modern medicine. *Staphylococcus aureus* is one of the bacteria in which the incidence of antibiotic resistance is a serious complication in the effective treatment of infectious diseases. Typically, methicillin-resistant *Staphylococcus aureus* (MRSA) occurs in a hospital settings where infectious complications appear in hospitalized patients. Community strains can be distinguished from typical nosocomial strains, which affect young people without anamnestic link to health care facilities and have different genetic characteristics. In livestock, a third distinct group of MRSA has been identified and now represents an epidemiological risk to humans.

Cases of colonization or infection caused by MRSA are frequently reported in people who work with animals, including veterinary personnel. The aim of this study was to determine the prevalence of MRSA colonization among veterinary professionals. A total of 134 nasal swabs from healthy attendees of a veterinary conference held in Hradec Kralove in the Czech Republic were tested for presence of MRSA. The strains were further genotypically and phenotypically characterized.

Nine isolated MRSA strains were characterized with sequence type (ST), *spa* type (t) and Staphylococcal cassette chromosome *mec* type (SCC*mec* type). Five different genotypes were described, including ST398-t011-IV (n = 5), ST398-t2330-IV (n = 1), ST398-t034-V (n = 1), ST225-t003-II (n = 1) and ST4894-t011-IV (n = 1). The carriage of the animal MRSA strain was confirmed in 8 cases, characteristics of one isolate corresponded to the possible nosocomial origin. Among animal strains were described three *spa* types (t011, t034, t2330) belonging into one dominating *spa*-clonal complex 11 (*spa*-CC11).

According to results of this study, the prevalence of nasal carriage of MRSA in veterinary personnel is 6.7%. Although this means an increase compared to the results of previous study (year 2008), the prevalence in the Czech Republic is still remaining lower than reported from neighboring countries.