

Epidemiology of multi-drug resistant staphylococci in cats, dogs and people in Switzerland

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Key words

One Health, Pets, People, Staphylococci, Antibiotics, Multi-drug resistance

Aim of the study

The aim of the study was to gain insight in the microbiological and epidemiological relationship between humans and pets to assess the potential role of cats and dogs as reservoirs of antibiotic resistant staphylococci.

Material and methods

The presence of multi-drug resistant (MDR) staphylococci was investigated in cats, dogs and people in the nursing homes and in the community of four Swiss Cantons (Berne, Ticino, Vaud and Zurich). We collected nasal swabs from 978 people and nasal and ear swabs from 256 dogs and 277 cats. Isolated staphylococci were identified and their phenotypic antibiotic resistance evaluated. MDR strains were defined as resistant to at least three drugs of three different antibiotic classes. Questionnaires on demographic information, health status and human–pet contact were completed by each participant and for each animal.

Results and significance

The overall prevalence of carriage of MDR *Staphylococcus* spp. was 17% in pets, 41% in nursing home residents and 20% in people living in the Swiss community. Previous hospitalisation was identified as a risk factor for the carriage of these strains in cats and dogs. Despite the recovery of a relevant proportion of MDR staphylococcal strains, nursing home residents had no increased risk of carrying these strains when living with or having contact with pets at least once a week. We observed a strong physical closeness of pets with their owners in households but no evident impact by pet vicinity on carriage of MDR staphylococci in people. These results suggest limited chance of strain transmission between pets and humans. In this study we showed the importance of considering antibiotic resistance, diversity of staphylococcal species and the socio-cultural context of the investigation when assessing the possibility of exchange of staphylococcal strains between different hosts.

Publications, posters and presentations

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