BETA-LACTAMASE PRODUCTION AND ANTIMICROBIAL RESISTANCE OF COAGULASE-POSTIVE STAPHYLOCOCCI STRAINS ISOLATED FROM DOGS AND THEIR OWNERS

Jūratė Stankevičienė, Jūratė Šiugždaitė

Lithuanian University of Health Sciences, Veterinary Academy, Department of veterinary pathobiology
Tilzes str. 18, LT-47181, Kaunas, Lithuania

Address for correspondence:
Jurate Stankeviciene
Phone: +370 67 019744; e-mail: jurate.sleiniute@gmail.com

Abstract. Staphylococcal infections are common to veterinary and human medicine. B-lactam antibiotics are among frequently prescribed antibiotics worldwide to treat staphylococcal infections. Antimicrobial susceptibility is changing over time and is generally rising steadily for those antimicrobials that are often used. The aim of this study to find out the antimicrobial susceptibility patterns of ß-lactamase producing coagulase-positive staphylococci isolated from dogs and their owners.

This study characterized the antimicrobial susceptibility and β-lactamase producing of *Staphylococcus aureus* and *Staphylococcus pseudintermedius* isolated from dogs and their owners. The susceptibility was determined by the disk-diffusion method. Polymerase chain reaction was used to detect *blaZ* gene, which encodes resistance to penicillin.

The prevalence of *Staphylococcus aureus* was identified in 4 (6.6%) dogs and in 26 (36.1%) owners. *Staphylococcus pseudintermedius* was isolated from 28 dogs (45.9%) and from 3 (4.2%) humans.

Staphylococcus aureus strains isolated from dogs were resistant to ampicillin (75.0%) and penicillin G (75.0%); *Staphylococcus pseudintermedius* strains isolated from dogs showed high resistance to penicillin G (43.3%), ampicillin (43.3%) and amoxicillin (26.7%) as well. Resistance of *Staphylococcus aureus* isolated from dogs' owners was most common to ampicillin (57.7%), penicillin G (50.0%) and amoxicillin (42.3%); resistance of *Staphylococcus pseudintermedius* to these antibiotics was present in 66.7%. All of the isolates were susceptible to oxacillin.

The prevalence of ß-lactamase producing *Staphylococcus aureus* strains isolated from dogs and their owners were 75% and 46.15% respectively. *BlaZ* gene was detected in 36.67% strains of *Staphylococcus pseudintermedius* isolated from canine and in 66.67% strains isolated from humans.

Keywords: coagulase-positive staphylococci, antimicrobial, resistance, beta-lactamase*, blaZ*