TITLE: ANTIMICROBIAL RESISTANCE PROFILE *Escherichia coli* AND *Proteus mirabilis* ISOLATED FROM AVIAN CELLULITIS.

AUTHORS: SOUZA, M.; MENCK, M. F.; KANABATA, B.; KOBAYASHI, R.K.T.; NAKAZATO, G.; BAPTISTA, A. A. S.

INSTITUTION: UNIVERSIDADE ESTADUAL DE LONDRINA, LONDRINA, PR (Rodovia Celso Garcia Cid, Km 380, s/n - Campus Universitário, CEP 86057-970, Londrina – PR, Brazil).

ABSTRACT:

Avian cellulitis is an inflammatory process in the subcutaneous tissue, mainly located in the abdomen and thighs. Avian cellulitis is one of the main causes of total or partial broiler chicken carcass condemnation. *E. coli* is the main agent involved in infections, however other microorganisms can be isolated such as *Proteus* spp. and *Staphylococcus* spp. The study had as objective compare the phenotypic antimicrobial resistance profile of *E. coli* and *Proteus mirabilis* isolated from broiler chickens which presented avian cellulitis. In this study were collected 42 cotton swabs from cellulitis on broiler chicken carcasses in a slaughterhouse in the northern region of Paraná. The samples were processed at the Laboratory of Avian Medicine – UEL. Each swab was incubated in BHI broth (at 37ºC for 24 h) and seeded in Mac Conkey Agar. The resultant isolated colonies were then submitted to biochemical tests (TSI/SIM/urea/citrate/fenylalanine/arginine/ornithine/lysine/sucrose/maltose/xylose).
Six samples contained both *E. coli* and *Proteus mirabilis* isolates, indicating mixed infection, were selected for this study, thus resulting in six *E. coli* isolates and six *Proteus mirabilis* isolates. Each isolated and identified colony was submitted to an antibiogram test carried out by the disk diffusion method, as recommended by the National Committee for Clinical Laboratory Standards (NCCLS) 2015. The pharmacological principles tested were Ceftiofur 30 µg (CTF), Cefotriaxone 30 µg (CRO), Cefotaxime 30 µg (CTX), Ceftazidime 30 µg (CAZ), Ampicillin 10 µg (AMP), Tetraciclin 30 µg (TET), Sulfazotrim 30 µg (SUT), Gentamicin 10 µg (GEN) e Enrofloxacin 5 µg (EN). It was observed that 66.66% (4/6) of the *E. coli* isolates were resistant to antimicrobials CTF, TET, SUT, GEN e EN; 83.33% (5/6) to CRO and CTX; 0% (0/6) to CAZ, and 100% (6/6) to AMP. On the other hand, 33.33% (2/6) of *Proteus mirabilis* isolates were resistant to CTF; 16.66% (1/6) to CRO, CAZ and GEN; 66.66 % (4/6) to AMP and SUT; 100% (6/6) to TET; 50% (3/6) to EN and CTX. In one of the six samples tested, *E. coli* and *Proteus mirabilis* showed similarity in the resistance profile for seven of the nine antimicrobials examined. Therefore, it was concluded that *E. coli* and *Proteus mirabilis* isolates were multiresistant. The most frequent antimicrobial resistance in *E. coli* and *Proteus mirabilis* isolates were AMP and TET respectively.

Keywords: avian cellulitis, antimicrobial multiresistance, *Escherichia coli*; *Proteus mirabilis*.