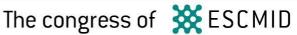


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## P1364 Intestinal colonisation of Portuguese sheep with Escherichia coli producing CTX-M and MCR-1

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**Background:** Food animal intestinal colonization with MDR threats including mcr-1 and bla<sub>CTX-M</sub> is an emerging "one health" problem around the world, including sheep production. This is the first report of mcr-1-positive and CTX-M-producing Escherichia coli isolated from sheep, worldwide.

Materials/methods: Fecal samples of sheep from a farm in the south of Portugal were screened for ESBL production and mcr-1. Selection of the isolates was performed on MacConkey agar with different antibiotics (oxyimino-beta-lactams, tetracycline and ciprofloxacin). Twenty-one fecal samples were previously incubated in TSB. Susceptibility-testing was achieved by disk-diffusion method according to CLSI. Colistin MIC determination was accessed by broth-microdilution. Presumptive identification of isolates was performed with CHROMagar Orientation. Extended-spectrum beta-lactamase (ESBL) producers were screened by the double disk synergy test and PCR with specific primers  $bla_{\text{TEM}}$ ,  $bla_{\text{OXA}}$  and  $bla_{\text{SHV}}$ ,  $bla_{\text{CTX-M}}$  and mcr-1. Plasmid content was determined by PBRT kit (DIATHEVA). PFGE of ESBL-producers was performed using Xbal restriction enzyme.

Results: One hundred and sixty five antibiotic resistant Enterobacteriaceae isolates were obtained with different antibiotic selection. Showing resistance to amoxicillin (140/165), cefotaxime (108/165), ceftazidime (55/165), tetracycline (108/165), amoxicillin+clavulanic acid (100/165), ciprofloxacin (46/165), gentamicin (19/165), chloramphenicol (29/165) and sulfamethoxazole+trimethoprim (70/165). A total of 111 isolates showed an MDR phenotype. Sixty-two selected isolates were ESBL-producing E. coli, those showing a different beta-lactamase profile (bla<sub>CTX-M-1</sub>, bla<sub>CTX-M-15</sub>, bla<sub>CTX-M-32</sub>, bla<sub>CTX-M-98</sub> and bla<sub>SHV-12</sub>), and a different not betalactam antibiotic resistance background (including aac6'lb-cr positive). Most of the CTX-M-15 producers were positive for IncFIB. One CTX-M-1-producing E. coli isolate was positive for mcr-1 gene, showing colistin MIC of 4mg/mL. PFGE profile of ESBL-producing E. coli showed different isolates with clonal relation, including a clone present in 14/21 animals.

**Conclusions:** This single farm showed different clones of ESBL-producing *E. coli* harboring CTX-M what highlights the dissemination of resistance genes in intestinal microbiota of sheep. Detection of mcr-1 gene, alert us for the fast and quiet spread of this human-threat. Farm animals act as reservoirs of multi-resistant microorganisms relevant in terms of public-health that transcends animal health, it is a vital matter to therapeutic efficiency and it fits well in the concept of "One Health".