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P1365 High occurrence of *mcr-1* among diverse *Enterobacteriaceae* clones and plasmids in chicken meat alert for potential foodborne transmission of *mcr-1* to humans

Sofia Ribeiro[1], Joana Vanessa Cordeiro Melro Mourão[1], Joana Campos[1], Svetlana Ugarcina Perovic[1], Ângela Novais[1], Luisa Maria Vieira Peixe[1], Patricia Antunes*[1,2]

[1] UCIBIO/REQUIMTE, Laboratório de Microbiologia, Faculdade de Farmácia, Universidade do Porto., [2] Faculdade de Ciências da Nutrição e Alimentação, Universidade do Porto.

Background: Food-producing animals are considered the main reservoir of globally distributed mobile colistin resistance (*mcr*) genes. In Portugal, one of the European countries with extensive colistin use, *mcr-1*-producing *Enterobacteriaceae* has been detected in diverse foodstuffs (pigs/rabbits/turkey) and hospitalized patients. However, the role of poultry-production as a source of *mcr* genes is clearly underestimated in EU. Here, we investigated *mcr* occurrence among fresh chicken meat samples, and characterize their genetic background.

Materials/methods: Pooled chicken-meat samples (n=53; neck skin of 10 carcasses from same batch per sample) obtained after slaughter and chilling from 29 Portuguese producers (spring/summer 2018) were analysed. Samples-25g were pre-enriched (37ºC/16-18h) in Buffered-Peptone-Water-BPW+colistin (3.5mg/L) and processed using cultural (CHROMagar-*Salmonella*+colistin and/or CLED-agar+colistin) and molecular approaches. DNA from BPW+colistin and selected colonies (1-5/sample) previously identified by MALDI-TOF MS were screened for *mcr-(1-5)* genes. Isolates' relatedness was investigated by Fourier-Transform Infrared (FT-IR) spectroscopy, MLST and *wzi* sequencing for *Klebsiella pneumoniae* (Kp) or phylogenetic groups (PhG) for *Escherichia coli* (Ec). Antibiotic susceptibility profiles of *mcr-1*-positive isolates were determined by disk-diffusion or reference broth microdilution method (colistin). Plasmid characterization (PCR-PBRT/pMLST/sequencing) and location (I-*Ceu*I/S1-PFGE-hybridization) was performed.

Results: *mcr-1* was detected in 60%-n=32/53 and 60%-n=36/53 by molecular and cultural approaches, respectively). Ninety MDR Ec isolates from 28 samples (21 poultry-producers) were distinguished in five FT-IR-groups/STs belonging to PhG F or B1. *mcr-1* was located in the chromosome (22 samples/1 clone-B1) or 33Kb-IncX4 (6 samples/2 clones B1/F), 260-280Kb-IncHI2 ST2/ST4 (5 samples/2 clones-B1/F) or IncI2 (1 sample/1 clone-F) commonly described plasmids. Sixteen MDR Kp isolates from 7 samples (6 poultry-producers) belonged to one clone *wzi*23-K14/K23 carrying *mcr-1* in 250-280Kb-IncHI2 ST2 plasmid. Four Ec/Kp clonal lineages persisted over time.

Conclusions: The high rates of *mcr-1* among chicken meat samples from different producers associated with common *mcr-1*-plasmid types in diverse MDR *Enterobacteriaceae* highlights poultry-production chain as a major reservoir and a potential source for foodborne transmission of *mcr-1* drivers to humans. Strict colistin-resistance/*mcr* monitoring, global re-assessment of colistin use in food-producing animals and alternative food

safety interventions are urgently needed.