

P2474 Prevalence of ESBL-producing Gram-negative bacilli and emergence of the *mcr-1* colistin resistance gene in Lebanese swine farms

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Background: Food producing animals are nowadays regarded as a potential reservoir of multi drug resistant organisms. Resistance in animals can be easily transferred to humans via direct/indirect routes. Once transmitted, these organisms can be responsible for infections with limited therapeutic options. In this study, the aim is to determine the prevalence of multi drug resistant organisms in Lebanese swine farms.

Materials/methods: In May 2017, 94 fecal swabs were collected from 4 swine farms in the south of Lebanon. Swabs were subcultured on MacConkey agar supplemented with cefotaxime (2µg/ml), ertapenem(1µg/ml), colistin(4mg/l) for the screening of ESBL, carbapenemase producers and colistin resistance respectively. Identification was done using MALDI-TOF. Double disk synergy test, ampC disk test and carpa np test were used for the phenotypic detection of ESBL, ampC and carbapenemase producers respectively. Broth-micro dilution was done for colistin MIC determination. RT-PCR was performed for the detection of *bla*_{CTX-M}, *bla*_{TEM}, *bla*_{SHV} and *mcr* colistin resistance genes in isolated strains.

Results: Out of 94 fecal swabs, 77 showed growth in the medium supplemented with cefotaxime. In total 110 strains were isolated: 104 were identified as *E.coli*, 4 as *E.fergusonii* and 6 as *K.pneumoniae*. Phenotypic tests showed that 80 strains were ESBL producers and 30 were ampC positive.. RT-PCR analysis revealed that *bla*_{CTX-M} was present in 53 isolates, *bla*_{TEM} in 29 and *bla*_{SHV} in 11. In parallel, 26 swabs showed growth on the MacConkey supplemented with colistin; 30 strains were isolated with 22 being *E.coli* and 1 being *K.pneumoniae*. MICs detected ranged from 4 to 256 µg/ml. Genotypic analysis revealed the presence of *mcr-1* plasmid colistin resistance genes in all 23 colistin resistant isolates.

Conclusions: This is the first study in Lebanon that determines the epidemiology of multi drug resistance in swine farms. The prevalence of ESBL is high and the emergence of colistin resistance is alarming. Antibiotic usage in Lebanese swine farms should be evaluated. Future studies should focus on the risk factors associated with the acquisition of resistance in pigs in Lebanon.