P1615 Molecular characterization of addiction systems of plasmids encoding carbapenemases in Enterobacteriaceae

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**Background:** Enterobacteriaceae producing carbapenemases (EPCs) are spreading worldwide. The aim of this work was to investigate the addiction systems carried by the replicons involved in the emergence and spread of EPCs in relation to carbapenemase and replicon types.

**Materials/methods:** A collection of 143 OXA-48 like, NMD-producing Enterobacteriaceae strains isolated in the laboratory of Habib Bourguiba hospital, Sfax, Tunisia and their 143 transconjugants or transformants was analysed. Eight plasmid protein antitoxin-regulated systems (VagCDI, VagCDII, CcdA/B, PemK/I, YacA/B, TaA/C, ParD/E, RelB) and three plasmid antisense rna-regulated systems Hok/Sok, SrnB/C, PndC/D were sought by PCR.

**Results:** Two hundred and twenty four plasmid addiction systems were detected in the parental strains (mean 1.56, range 0-5 per strain) and 138 were detected in the recipient strains (mean 0.96, range 0-1 per strain). PemKI, VagCDII and TaA/C were the most frequently represented systems in both recipient and parental strains. The parental OXA-48-producing strains had more addiction systems (mean 1.84) than the NDM-producing ones (mean, 1.4). Moreover, *E. coli*-producing carbapenamase had more addiction systems (mean 4.25) than *K. pneumoniae* (mean 1.88).

In the recipient strains, the frequency of addiction systems was almost the same for all replicons (=1 addiction system per replicon): all IncL/M replicons carrying OXA-48 (68) had the pemK/I system, 42 over 47 IncFIIk replicon carrying NDM-1 had the VagCDI system and all but one IncA/C replicon carrying NDM-1 or OXA-204 carbapenemases (24) had the TaA/C system.

**Conclusions:** All the carbapenemase replicons have at least 1 addiction system that could contribute to their maintenance in host strains.