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***In Vivo* Horizontal Dissemination Of *Bla*_{KPC-2} In Different Genetic Platforms Of Clinical Isolates Of *Enterobacteriaceae*.**

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BACKGROUND: *Klebsiella pneumoniae*-carbapenemase (KPC) has emerged globally and outbreaks caused by *K. pneumoniae* ST258 are the most widespread. The report of *in vivo* horizontal transfer of *bla*_{KPC} between different species of *Enterobacteriaceae* (ETB) are rare.

OBJECTIVES: To study the molecular characteristics of six KPC producers recovered simultaneously from 3 patients in a short period of time.

METHODS: **Case 1:** *E. coli* (ECO-13066) and *K. pneumoniae* (KPN-13067) isolated in October 2010 from an anal swab; **Case 2:** *Enterobacter cloacae* (ECL-13354) and *K. pneumoniae* (KPN-13355) isolated from two blood cultures taken 7 days apart in March 2011; **Case 3:** *Citrobacter freundii* (CFR-13965) and *K. oxytoca* (KOX-13966) isolated from skin and skin structure infection in May 2012. All isolates were suspicious of KPC production due to imipenem inhibition halos <22 mm and positive synergy between a carbapenem disk and phenyl boronic acid disk. PFGE, carbapenemase and expanded spectrum beta lactamase genes, plasmid characteristics and KPC genetic environment were studied. Patients' clinical records were reviewed.

RESULTS: *bla*_{KPC-2} was the allele found in the six isolates. Case 1: KPN-13067 belonged to ST258 and harbored *bla*_{PER-2}. Both isolates harbored *bla*_{KPC-2} in Tn4401a on non-typeable and non-conjugative plasmids. Case 2: In ECL-13354 and KPN-13355, *bla*_{KPC-2} was found in the *ISKpn8-bla*_{KPC-2}-*ISKpn-6-like* structure on a conjugative plasmids of IncL/M. KPN-13355 harbored *bla*_{PER-2}. Case 3: CFR-13965 and KOX-13966 harbored *bla*_{PER-2}. *bla*_{KPC-2} was detected in *ISKpn8-Δbla*_{TEM}-*bla*_{KPC-2}-*ISKpn-6-like* (Variant 1a) located on IncA/C conjugative plasmids. Specific hybridization band of ~70 Kb was seen in cases 1 and 3. Instead, Case 2 showed plasmids of ~65.5 and ~70 Kb respectively

CONCLUSIONS: Here, we document the *in vivo* dissemination capacity *bla*_{KPC-2} located on plasmids recovered from diverse ETB clinical isolates with different genetic backgrounds. This is the first report of *E. coli* harboring *bla*_{KPC} associated with Tn4401a in Argentina.