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Significance of Isolating Carbapenemase-producing Enterobacteriaceae in Liver and Liver Kidney Transplant

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Abstract

Background:
There are few reports of infections produced by carbapenemase-producing Enterobacteriaceae (KPC) in solid organ transplants. Scarce available data, show higher mortality in these patients (p.). **Objective**: To evaluate risk factors for this infection and the evolution of p. with liver (LT) and liver-kidney (LKT) transplant, infected by KPC compared with uninfected LT or LKT p. to determine the frequency of infection in previously colonized p.
Methods:
Clinical records of all p. who had received a LT or LKT between January 2010 and December 2015 were analysed. Three controls were taken per p. with KPC infection, matched by gender, age, type of Tx and MELD score by Program R Studio, propensity score: A total of 5 cases and 15 controls resulted.
Results:
228 transplants were performed in 224 p. Presence of KPC was detected in 10 p. (4.5% of p). Six episodes were considered colonization (C) (2.7%) and 8 episodes in five p. infection (I) (2.2% of p.). Patients infected by KPC (cases): Gender (M/F): 2/3, Average age: 54 y. 1 p. LKT and 4 p. LT. Only one p. had a previous colonization. Infections were: 7 bacteraemia in 4 patients. Three of these were primary. Mean of length of stay in patients the previous year isolation in the cases was 55.6 days (d) and 26.8 d in controls (p=0.032). Mean days of antibiotics received during three months before isolation was 45.2 in cases and 31.7 in controls (p=0.049). Days of carbapenems use was 14.6 for cases and 10.6 for controls (p=ns). In patients with I or C, mortality rate was 50% (5 of 10 p.), showing a non significant difference between those who had C (40% mortality, 2 of 5 p.) and those who had I (60%, 3 of 5 p.). Mortality of controls was 2 of 15 (13%)
Conclusion:
Days of hospitalization and previous antimicrobial use were confirmed as risk factors for this population. There was a trend to increased mortality in patients without KPC (14%), colonized (40%) and infected with KPC (60%). The difference was not statistically significant, probably due to the low number of patients.

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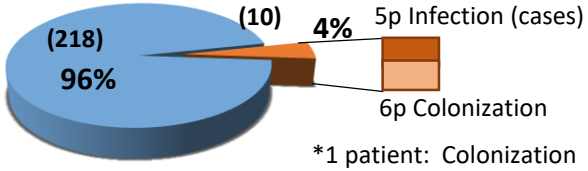
Results

TX: 228/ 224 (January 2010 and December 2015)

Patients

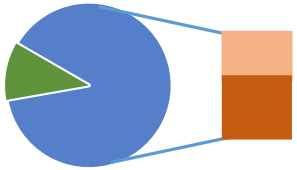


*1 patient: Colonization → Infection

KPC (-) KPC (+)

Cases: 2 3 Controls: 15 (gender, age, type of Tx and MELD)

Infections

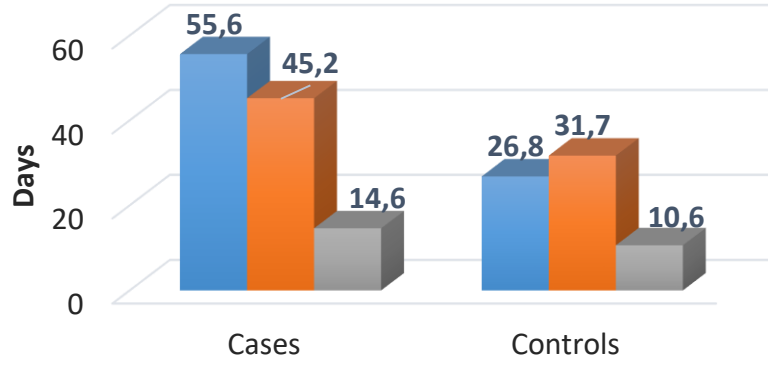


43% (3 primary)
57% (4 *secondary)
*3 Liver abscesses by hepatic artery thrombosis
1 Subhepatic abscess

Bacteraemia (4) Cholangitis (1)

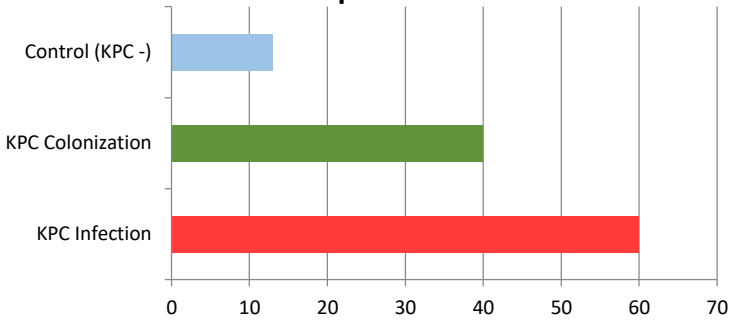
	2010	2011	2012	2013	2014	2015
Colonization	0	0	3	1	1	1
Infection	0	1	1	1	2	0

Analysed Variables



Length of stay **p=0.032** Antibiotics **p=0.049** Carbapenems **p=NS**

% Mortality p=NS



Conclusion:

Lenght of previous hospitalization and previous antimicrobials use were confirmed as risk factors of this population. There was a trend of increased mortality in patients without KPC (14%), colonized (40%) and infected with KPC (60%). The difference was not statistically significant, probably due to the low number of patients.