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O1144 Carbapenem-resistant *Enterobacteriaceae* infection risk after liver transplantation: the impact of colonisation

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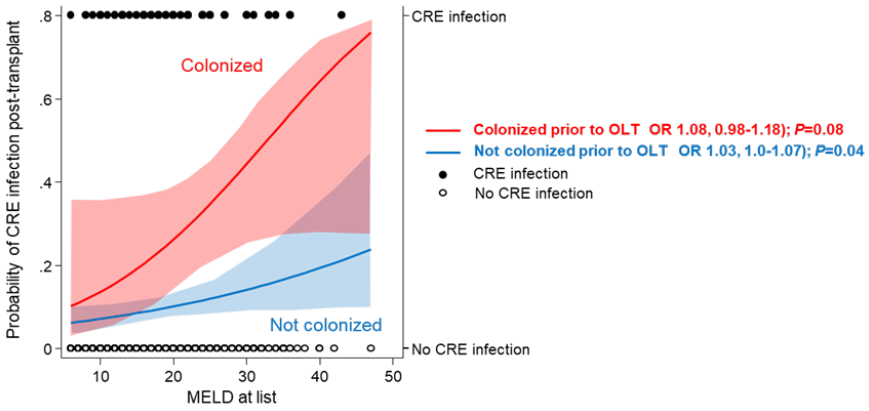
Background: To assess the carbapenem resistant Enterobacteriaceae (CRE) infection risk after liver transplantation (LT).

Materials/methods: Longitudinal cohort study on all consecutive adult patients underwent LT at our center over 8-year study period (2010-2017). During the study period, patients were systematically screened for CRE colonization by rectal swabs at inclusion in waiting list, immediately before LT and weekly after LT until hospital discharge. Asymptomatic carriers did not receive decolonization treatment, anti-CRE prophylaxis or preemptive antibiotic therapy. Patients were followed-up to 1 year after LT. Risk factors for CRE infection were analyzed with multivariate cox regression analysis; patients were censored at first infection time, death or 1 year, whichever occurred first.

Results: Study population consisted of 553 patients underwent first LT, 38 were colonized at LT and 104 acquired colonization after LT. Over the study period, there was a significant increase in the rate of CRE colonization at LT (IRR 1.21, 95%CI 1.05-1.39, p=0.008). According to MELD value at waiting list inclusion, Cart analysis showed that the risk of acquiring CRE colonization prior LT was moderate for MELD >20 (RHR 2.91) and high for MELD >33 (RHR 33.74). Overall, 57 patients developed CRE infection after LT within a median of 31 (IQR 11-115) days, with an incidence of 3.05 cases per 10,000 LT-recipient-days, and a non-significant increase over the study period (IRR 1.11, 0.98-1.26, 0.08). At multivariate analysis, CRE colonization at LT (HR 18.46, 6.75-50.51, p<0.001) and that acquired after LT (HR 16.37, 6.75-39.69, p<0.001) were both strongest risk factors for developing CRE infection; other independent risk factors were combined transplant (HR 3.46, 1.58-7.61, p=0.002), grade 3 ascites within 90 days prior LT (HR 2.60, 1.39-4.87, p=0.003), MV >48h (HR 3.08, 1.73-5.52, p<0.001), re-intervention (HR 2.14, 1.19-3.86, p=0.01) and rejection (HR 2.55, 1.41-4.63, p=0.002). Higher MELD at inclusion in waiting list was associated with an increased CRE infection risk in both colonized and non-colonized patients (see Figure).

Conclusions: CRE colonization, both at LT and acquired after LT, is the strongest predictor of CRE infection. Prevention strategies for CRE infection in colonized LT candidates and/or recipients should be investigated.

Figure


Probability of CRE infection post-transplant
.8
.6
.4
.2
0
Colonized
Not colonized
10
20
30
40
50
MELD at list
CRE infection
No CRE infection
Colonized prior to OLT OR 1.08, 0.98-1.18); P=0.08
Not colonized prior to OLT OR 1.03, 1.0-1.07); P=0.04
CRE infection
No CRE infection