were collected from the Trauma Infectious Disease Outcomes Study (6/09–12/14). Additionally, a previously defined group of colonizing isolates linked to the infecting isolates and a selection of random colonizers were included from groin swabs. DNA extraction and PCR targeting Kv per published methods was performed. Antimicrobial susceptibilities were determined using the BD Phoenix Automated Microbiology System and CLSI criteria. Multidrug resistance was defined as either resistance to ≥3 classes of aminoglycosides, β-lactams, carbapenems and/or fluoroquinolones or production of ESBL or KPC.

Results. Of 237 archived Kp isolates (from 122 patients), 10 (4%) were identified as Kv by PCR (from 8 [7%] patients). The Kv sources were 4 from blood (40%), 1 intra-abdominal (10%) and 5 from groin (50%). Six (3%) isolates were identified as Kq (4 from groin and 2 from respiratory specimens). The Kv and Kp patients were all males, with a median age of 25 (IQR 21–46) and 23 (IQR 21–28), length of hospital stay of 24 days (IQR: 5–106) and 53 days (IQR 36–74), and Injury Severity Score of 21 (IQR: 10–50) and 38 (IQR: 30–45), respectively. There were no deaths in the Kv group compared with 4 with Kp. Infecting Kv isolates were more likely to be from blood compared with Kp (80% vs. 17%, P = 0.04). No infecting Kv isolates were multidrug-resistant compared with 70% of infecting Kp isolates ($P < 0.01$).

Conclusion. Kv represented 4% of the previously identified Kp isolates in this population. Patient characteristics were similar in both groups. While Kv was less resistant than Kp, it was more likely to be associated with invasive disease in this group.

Table: Antimicrobial susceptibilities

Antimicrobial	Kv Susceptibility (%) (n=10)	Kp Susceptibility (%) (n=221)	P-value
Cefazolin	80	20	<0.01
Ceftriaxone	100	30	<0.01
Cefepime	100	35	<0.01
Levofloxacin	90	62	0.09
Pip-tazo	100	41	<0.01
Meropenem	100	96	1.0
Amikacin	100	89	0.31

Disclosures. **All authors:** No reported disclosures.

503. Comparison of IMP Carbapenemase-Producing *Enterobacteriaceae* (CPE) and Non-Carbapenemase-Producing *Enterobacteriaceae*: A Multicenter Prospective Study of Clinical and Molecular Epidemiology in Japan

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Background. IMP CPE are the dominant CPE type in Japan. We aimed to compare its epidemiology to that of non-CPE (NCPE).

Methods. Patients with isolation of carbapenem-resistant Enterobacteriaceae (CRE) with meropenem MIC ≥2 mg/L or imipenem MIC ≥2 mg/L and cefmetazole MIC ≥64 mg/L were included from August 2016 to March 2018. Adjusted outcome analyses were conducted using a generalized estimating equation model with weighting based on the inverse probability of propensity scores (PS).

Results. Ninety isolates (27 CPE and 63 NCPE) were collected from 88 patients (53 male) in 7 hospitals. CPE included 10 *E. cloacae* (ENC), 6 *K. pneumoniae* (KP), 4 *E. coli* (EC), 3 *C. freundii* (CF), *2 K. oxytoca,* and 1 each of *E. aerogenes* (EA) and *S. marcescens* (SM). NCPE included 34 EA, 15 ENC, 4 each of KP, SM, and 2 CF. All CPE were positive for IMP carbapenemase (11 IMP-11, 6 IMP-42, 4 IMP-6, and 3 each of IMP-10 and IMP-1). Most of CPE/NCPE were isolated from sputum (39%), intra-abdomen (21%), and urine (20%). Levofloxacin, gentamicin, and amikacin resistance were found in 6 (22%), 4 (15%), and 1 (4%) CPE, respectively, and 6 (10%), 6 (10%), and 0 NCPE, respectively. Eighteen (67%) bla_{IMP} were transferable by conjugation. Cases of CPE involved older patients with more frequent use of devices and carbapenem exposure than those in cases of NCPE (table). The mortality was similar in the 2 groups. Length of hospital stay (LOS) after CPE/NCPE isolation was significantly higher in the CPE group after PS adjustment ($P = 0.02$).

Table: Comparison of Cases with CPE and NCPE, *n* (%)

	CPE (*n* = 25)	NCPE (*n* = 63)	*P* value
Age[a]	77 (69–82)	70 (61–79)	0.04
Nursing home residence	6 (24)	4 (6.5)	0.03
Charlson Comorbidity Index[a]	3 (2–5)	2 (1–3)	0.12
Dependent functional status	19 (76)	24 (38.1)	< 0.01
Urinary catheter	17 (68)	23 (36.5)	0.01
Nasogastric tube	11 (44)	7 (11.1)	< 0.01
Carbapenem exposure ≤1 month	10 (40)	9 (14.3)	0.02
Bacteremia	7 (16)	3 (4.8)	0.1
Outcome			
	CPE	NCPE	*P*-value (bivariate/ PS-adjusted analyses)
Mortality			
In-hospital	4 (16)	5 (8.1)	0.27/0.82
30-day	3 (12.5)	3 (5.1)	0.35/0.52
LOS after isolation[a]	44 (18–71)	29 (11–43)	0.11/0.02

[a]Median (IQR).

Conclusion. CPE had distinct epidemiological characteristics, and CPE isolation was associated with a prolonged hospital stay. Defining the underlying resistance mechanism of CRE is important for appropriate management.

Table. Comparison of Cases with CPE and NCPE, n (%)

		CPE (n=25)	NCPE (n=63)	P value	
Age*		77 (69-82)	70 (61-79)	0.04	
Nursing home residence		6 (24)	4 (6.5)	0.03	
Charlson Comorbidity Index*		3 (2-5)	2 (1-3)	0.12	
Dependent functional status		19 (76)	24 (38.1)	< 0.01	
Urinary catheter		17 (68)	23 (36.5)	0.01	
Nasogastric tube		11 (44)	7 (11.1)	< 0.01	
Carbapenem exposure ≤ 1 month		10 (40)	9 (14.3)	0.02	
Bacteremia		7 (16)	3 (4.8)	0.1	
Outcome					
		CPE	**NCPE**	**Analyses (P value)**	
				Bivariate	**PS adjusted**
Mortality	In-hospital	4 (16)	5 (8.1)	0.27	0.82
	30-day	3 (12.5)	3 (5.1)	0.35	0.52
LOS after isolation*		44 (18-71)	29 (11-43)	0.11	0.02
*Median (IQR)					

Disclosures. **All authors:** No reported disclosures.

504. Epidemiology of End-stage Renal Disease (ESRD) Patients with Carbapenem-Resistant *Enterobacteriaceae* (CRE) Infections: Atlanta Metropolitan Area, 2012–2017

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Session: 54. HAI: MDRO – GNR Epidemiology, CRE
Thursday, October 3, 2019: 12:15 PM

Background. Patients with end-stage renal disease (ESRD) have higher risks for resistant organisms including carbapenem-resistant Enterobacteriaceae (CRE). To explore the effect of ESRD on CRE, we compared characteristics of CRE cases with and without ESRD in a population-based cohort.

Methods. The Georgia Emerging Infections Program has performed active laboratory- and population-based surveillance for CRE in metropolitan Atlanta (4.1 million in 2017) since 2012. CRE cases are defined by isolation from a sterile body site or urine of *E. coli*, *K. pneumoniae*, *K. oxytoca*, *K. aerogenes*, or *E. cloacae*. From 2012 to 2015, cultures were resistant to all third-generation cephalosporins tested and non-susceptible to ≥1 carbapenem (excluding ertapenem). After 2016, cultures were resistant to ≥1 carbapenems. Epidemiologic data including ESRD were collected via medical chart review. ESRD population data were obtained from the US Renal Data