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Abstract (oral session)

Nosocomial outbreak of Klebsiella pneumoniae carbapenemase producing Klebsiella oxytoca, Austria

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Background: Klebsiella pneumoniae carbapenemase (KPC) is a member of Class A beta-lactamase that poses a serious challenge for both clinicians and clinical microbiologists. Outside the US, KPC-producing K. Pneumonia have recently been reported from several European countries, including Greece, Israel, Poland, Germany, or France. In contrast reports of KPC-producing K. oxytoca are rare. We report the first nosocomial outbreak of KPC carbapenemase producing Klebsiella oxytoca. Methods: Analysis of the outbreak was conducted using the DiversiLab System. Isolates were considered to be indistinguishable, closely related, possibly related, or unrelated. "Indistinguishable" was defined as > 98% similarity and none banding differences. Results: From October 2010 through February 2011 five patients were colonized (n=2) or infected (n=3) by KPC-producing K. oxytoca. All patients were admitted to the same room of a medical intensive care unit in Austria. Automated rep-PCR assays showed >97.9% similarity of isolated strains and confirmed the nosocomial outbreak. Details are depicted in table 1. Conclusions: In conclusion we report a clonal outbreak of KPC-producing K. oxytoca in Austria involving five patients and lasting for five months. While outbreaks of KPC-producing K. pneumoniae have been described frequently no outbreak of KPC-producing K. oxytoca has yet been described to the best of our knowledge. These observations provide some insight in the epidemiology and clinical importance of KPC carbapenemases that pose a serious clinical threat also when produced by K. oxytoca.

Patient	Age, years / Sex	Date of first detection	Comorbidities	LOS before detection, days	Total LOS, days	Site of first detection	Other sites detected	Number of KPC *K.oxytoca* isolates detected	Duration of colonization, days	Date of infection caused by KPC *K.oxytoca*	Site of infection caused by KPC *K.oxytoca*	Treatment outcome (final outcome)	Antimicrobial therapy before isolation of KPC *K. oxytoca*	Antimicrobial therapy for KPC *K.oxytoca* infection	Susceptibility phenotype of KPC *K.oxytoca** (MIC; mg/l)
1	43/f	Oct 12, 2010	Ischemic stroke, DIC; ARF, AH	31	82	Urine	Tracheostoma, Tracheal aspirate, Nasal, Axilla	19	49	Oct 12, 2010	UTI, VAP	Successful (death)	Meropenem, Gentamicin, Linezolid, Moxifloxacin	, FOS	AMK(2.0) (1.0) FOS (2.0) TIG (0.5)
2	76/f	Oct 19, 2010	SSSS, ARF, AH, DM	11	12	Surveillance swab (Throat)	NONE	1	1	NA	NA	NA (death)	Ceftriaxone	NA	AMK(2.0) (0.125) FOS (2.0) TIG (0.5)
3	43/m	Oct 27, 2010	CAP (*Legionella pneumphila*)	9	30	BAL	Throat, Nasal, Sputum, Groin	9	15	Oct 27, 2010	VAP	Successful (discharge)	Ceftriaxone, Moxifloxacin	FOS, TIG	AMK(4.0) (1.0) FOS (4.0) TIG (0.5)
4	70/m	Dec 14, 2010	Secondary AML, COPD	106	115	Pressure ulcer from urinary catheter	NONE	1	1	NA	NA	NA (discharge)	Meropenem, Levofloxacin	NA	AMK(2.0) (0.125) FOS (4.0) TIG (0.5)
5	89/f	Feb 16, 2011	UTI, CAD, Heart failure, CMP, ARF	26	29	BAL	NONE	1	1	Feb 16, 2011	VAP	NA (death)	Ciprofloxacin, Amox/Clav	NA	AMK(2.0) (1.5) FOS (4.0) TIG (0.25)

TABLE 1. Clinical data, strains and detected carbapenemases in KPC *Klebsiella oxytoca* outbreak, Austria, 2010- 2011.
AH, arterial hypertension; AMK, amikacin; AML, acute meloid leukemia; Amox/Clav, Amoxicillin clavulanic acid; ARF, acute renal failure; BAL, broncoalvelar-lavage fluid; CAD, coronary artery disease; CAP, Community acquired pneumonia; CMP, Cardiomyopathy; COL, colistin; DIC, disseminated intravascular coagulation; DM, diabetes mellitus; f, female; FOS, fosfomycin; GM, gentamicin; LOS, length of stay; m, male; MIC, minimum inhibitory concentration; NA, not applicable; SSSS, staphylococcal scalded skin syndrome; TIG, tigeclycline; UTI, urinary tract infection; VAP, ventilator associated pneumonia.
* MIC´s were determined by the Etest method (AB BIODISK, Solna, Sweden).