

# ELIZABETHKINGIA MENINGOSEPTICA EMPYEMA IN A RENAL TRANSPLANT RECIPIENT

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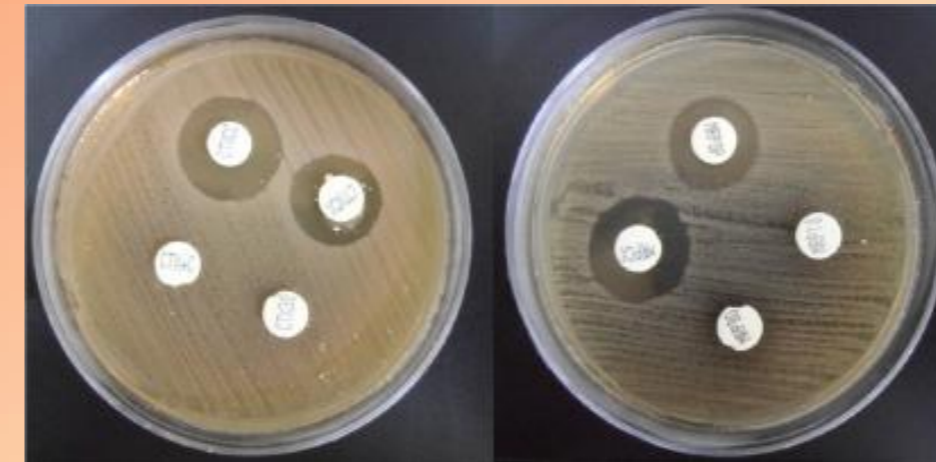
ECCMD - 0394

## INTRODUCTION

- Elizabethkingia meningoseptica*
- Gram negative non-fermenter
- Earlier classified as CDC gp IIa *Flavobacterium* (1959)
- Chryseobacterium* (1994)
- Elizabethkingia* (2005)
- Elizabeth O King
  
- Ubiquitous
- Hospital environments
- Colonizes respirators, humidifiers
- Colonizes antiseptic solutions
- Colonizes sinks and taps
- Food products
- Fresh, chlorinated, marine water
- Not a part of human microflora
  
- Emerging pathogen causing
- Meningitis
- Endocarditis, bacteremia, sepsis
- Wound, soft tissue infections
- Abdominal, respiratory infections
- Dialysis associated peritonitis
- Prosthesis associated arthritis

## CASES

- 47 years, male
- Contrast Induced Nephropathy
- Chronic Kidney Disease since 2007
- Renal transplant in 2010
- Induction - Basiliximab
- Prednisolone, Tacrolimus, MMF
- Multiloculated pleural effusion 2012
- Subjacent lung consolidation
- Precarinal, pre-para-aortic nodes
- Isoniazid, Pyrazinamide, Ethambutol
- Pleural empyema 2013
- Leucocytosis, ESR 30 mm at 1 hour
- Empyema fluid 520 ml
- Proteins 4.3 g/dl, LDH 3474 U/l
- Cells 26500/dl, ADA 61.8 U/l
- Cotrimoxazole MIC 40 µg/ml (Vitek)
  
- 8 years, male
- Chronic Kidney Disease since 2010
- CAPD peritonitis - *Elizabethkingia*
- Cefoperazone-sulbactam MIC 16 µg
  
- 23 years, female
- Exploratory laparotomy
- Left tubal ectopic pregnancy
- Bacteremia - *Elizabethkingia*
- Nalidixic acid MIC 16 µg/ml (Vitek)
  
- 19 years, female
- Mitral regurgitation
- Mitral Valve Replacement
- Bacteremia - *Elizabethkingia*
- Cotrimoxazole MIC 80 µg/ml (Vitek)

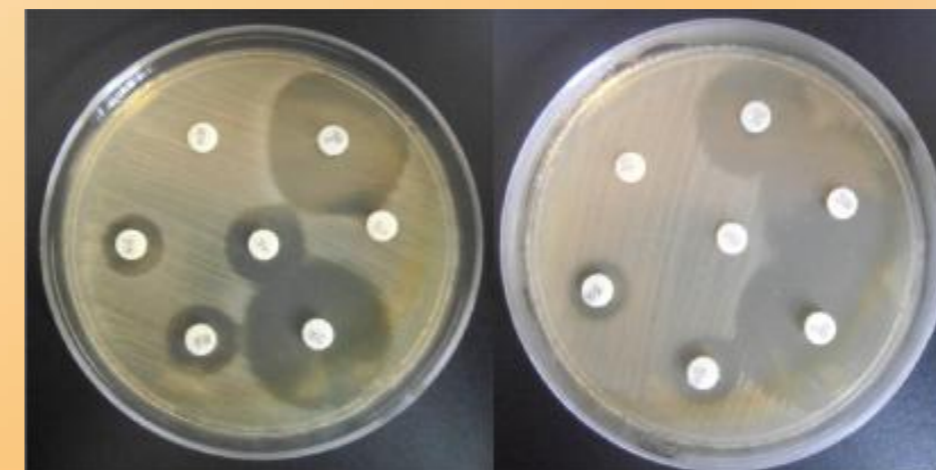


Coexistent ESBL, Amp C, Metallo β-Lactamases (Rosco Diagnostica, Denmark) - Interpretation

ESBL - CTX+C >5mm CTX30/ CTXCC >5mm CTXCX  
 AmpC - CTXCX >5mm CTX30/ CTXCC >5mm CTX+C  
 Coexistent ESBL + AmpC - CTXCC >5mm CTX+C or CTXCC >5mm CTXCX

MBL – MRPDP >5mm MRP10  
 KPC/ Ambler Class A – MRPBO >5mm MRP10  
 AmpC hyperproduction with porin loss  
 - both MRPBO and MRPCX >5mm MRP10

(Legend - CTX30-Cefotaxime 30 µg/ml,  
 CTX+C – Cefotaxime + Clavulanic acid,  
 CTXCX – Cefotaxime + Cloxacillin,  
 CTXCC – Cefotaxime + Clavulanic acid+Cloxacillin;  
 MRP10 - Meropenem 10 µg/ml,  
 MRPDP – Meropenem + Dipicolinic acid,  
 MRPCX – Meropenem + Cloxacillin,  
 MRPBP – Meropenem + Boronic acid)



Kirby Bauer disk diffusion showing inhibition zones and inducible clindamycin resistance

## DISCUSSION

- Elizabethkingia meningoseptica*
- Diagnostic/therapeutic challenges
- No growth on McConkey agar
- Manual identification exacting
- Catalase, oxidase, indole, ONPG +ve
- 99% identification - Vitek-2 compact
  
- Infections under Gram negative cover
- Multidrug resistance
- Reservoir of novel β-lactamases
- Paradoxical susceptibility to Gram positive antimicrobials e.g. Rifampin, Vancomycin, SXT, minocycline, macrolides, clindamycin&novobiocin
- Resistant to Polymyxins & Tigecycline
- Emerging Vancomycin resistance
- Higher doses for eradication
  
- Surveillance not corroborative
- Differentiation between Healthcare and Community Infections difficult

## CONCLUSION

- Emerging multi-resistant pathogen
- High index of suspicion required
- Gram positive antimicrobial testing
- Potential multi-resistant bioweapon
- Clinico-microbiological correlation



Antibiotic	MIC	Inhibitory Zone (mm)	Interpretation
Cotrimoxazole	40	> 5	Susceptible
Nalidixic acid	16	> 5	Susceptible
Clindamycin	2	> 5	Inducible resistance
Meropenem	10	> 5	Susceptible
Amikacin	32	> 5	Susceptible
Colistin	100	> 5	Susceptible
Vancomycin	> 100	> 5	Susceptible
Tigecycline	> 100	> 5	Susceptible
Polymyxin B	> 100	> 5	Susceptible
Polymyxin E	> 100	> 5	Susceptible