

# Clinical Case I

*Acinetobacter baumannii*  
carbapenem resistant  
Real Life experience

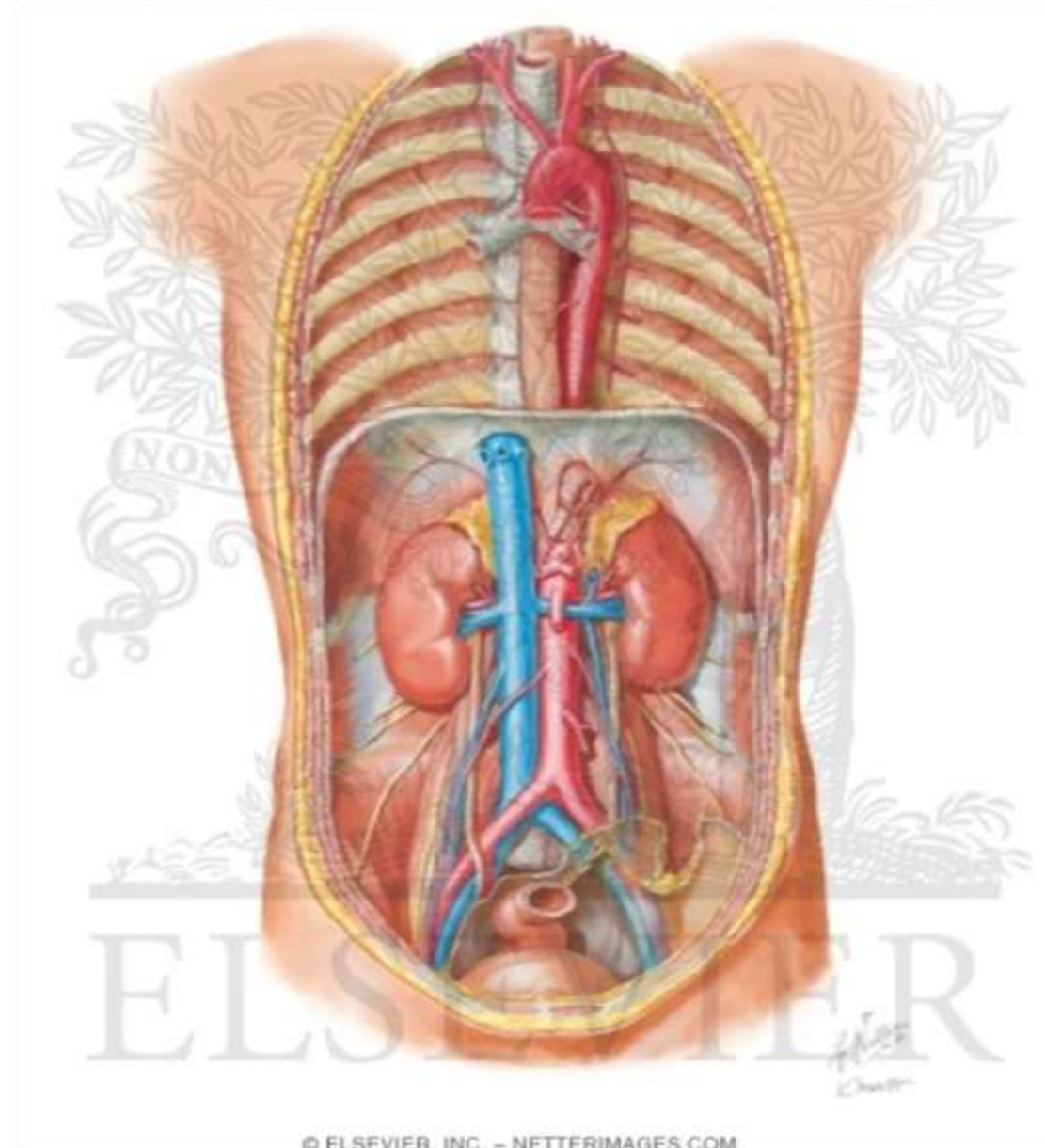
---

# Il sig. Nino

- Et : 55 anni,
- Sex: M
- APR fumo. BPCO
- APP: dissezione aortica tipo A secondo Stanford estesa dal piano valvolare + coinvolgimento dell'emergenza della coronaria dx (condizionante IMA dx) fino all'origine di entrambe le aa. iliache esterne ( minimo coinvolgimento dell'a.ipogastrica ). Intervento di sostituzione di Ao Ascendente,Arco Aortico, e tronchi sovraortici.

# Intervento e post-operatorio

- Giorno 0: Sostituzione dell'aorta ascendente e completa dell' arco aortico e reimpianto separato di arteria carotide interna sinistra e tronco brachiocefalico in arresto di circolo (tubo protesico Hemashield 28 mm e tubi 10 mm e 8 mm per i TSA) Posizionamento ECMO VA periferico
- ECMO VA dal giorno 0 fino al giorno 7.
- CVVHDF in citrato dal giorno 2 al giorno 9.
- Tracheostomizzato (giorno 03), in ventilazione di supporto



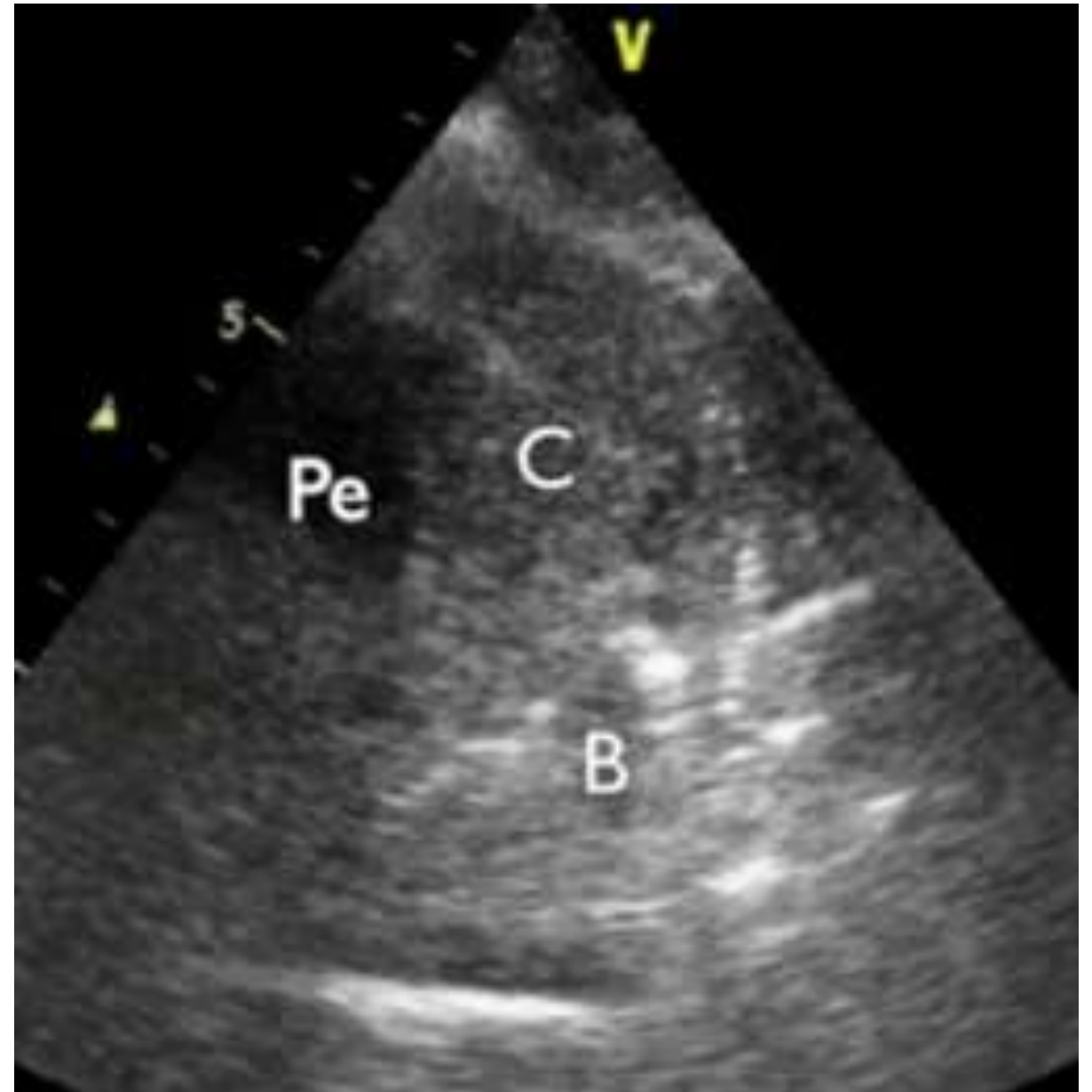
---

# **...miglioramento clinico**

- Eseguiti cicli di respiro spontaneo...

# 2 settimane dopo circa

- Rapido peggioramento degli scambi respiratori ( $\text{FiO}_2 \geq 20$  punti )
- Secrezioni purulente
- Riscontro ecografico di nuovi infiltrati
- TC  $37.1^\circ\text{C}$
- GB: 21000/uL (N87%), PCR 15 mg/dl (VN<0.5 mg/dL)



# DATI MICROBIOLOGICI DISPONIBILI

(prec)

Aspirato tracheale T0

Aspirato tracheale T1

Aspirato tracheale T2

Tampone Rettale 0

Tampone Rettale 1

*K. Pneumoniae*  
NDM

Tampone Rettale 02

Emocolture+BAL: in corso

Ceppo 1 *Acinetobacter baumannii*

Antibiotici		MIC	MIC Breakpoint		Note
			S<=	R>	
Amikacina	R	>32	8	8	
Ciprofloxacina					
Imipenem					
Meropenem					
Tobramicina	R	>8	4	4	

10000 UFC

Antibiotici		MIC	MIC Breakpoint		Note
			S<=	R>	
Amikacina	R	32	8	8	
Amoxicillina/A.CLAV.					
Cefepime					
Ceftazidima					
Ceftazidime/Avibactam	R	>8	8	8	
Ceftolozane/Tazobactam	R	>16	2	2	
Ciprofloxacina	R	>2	0.25	0.5	
Gentamicina	S	1	2	2	
Imipenem/Relebactam	R	>8	2	2	
Meropenem	R	>8	2	8	
Meropenem/Vaborbactam	R	>32	8	8	
Piperacillina/tazobactam	R	>64	8	8	

1000 UFC

Antibiotici		MIC	MIC Breakpoint		Note
			S<=	R>	
Amikacina	R	32	8	8	
Amoxicillina					
Cefepime					
Ceftazidima					
Ceftazidime/Avibactam	R	>8	8	8	
Ceftolozane/Tazobactam	R	>16	2	2	
Ciprofloxacina	R	>2	0.25	0.5	
Gentamicina	S	1	2	2	
Imipenem/Relebactam	R	>8	2	2	
Meropenem	R	>8	2	8	
Meropenem/Vaborbactam	R	>32	8	8	
Piperacillina/tazobactam	R	>64	8	8	

1000 UFC

1	<i>Klebsiella pneumoniae</i>
2	<i>Acinetobacter baumannii</i>
Enterobatteri: Test molecolare per carbapenemasi	
KPC	Negativo
OXA-48	Negativo
VIM	Negativo
IMP	Negativo
NDM	Positivo
Ricerca <i>Acinetobacter baumannii</i>	Positivo
Enterococchi Vancomicina resistenti (VRE)	Positivo
1	<i>Enterococcus faecium</i> VRE

1	<i>Klebsiella pneumoniae</i>
2	<i>Acinetobacter baumannii</i>
Enterobatteri: Test molecolare per carbapenemasi	
KPC	Negativo
OXA-48	Negativo
VIM	Negativo
IMP	Negativo
NDM	Positivo
Ricerca <i>Acinetobacter baumannii</i>	Positivo
Enterococchi Vancomicina resistenti (VRE)	Positivo
1	<i>Enterococcus faecium</i> VRE

# Colonizzazioni

	T0	T1	T2	VAP - Diagnosis
Tampone rettale	Neg	<i>A. Baumannii</i> <i>K. Pneumoniae</i> NDM	<i>A. Baumannii</i> <i>K. Pneumoniae</i> NDM VRE	
BAS		<i>A. Baumannii</i> 10*3 <i>K. Pneumoniae</i> NDM 10*3	<i>A. Baumannii</i> 10*5 <i>K. Pneumoniae</i> NDM 10*3 MRSA VRE	
BAL	ND	ND	ND	IN CORSO
Emocolture	ND	ND	ND	IN CORSO
Coassiale			<i>A. Baumannii</i> MRSA	

# Terapia antibiotica empirica

1. Start **antibiotic therapy immediately**
2. Antibiotic choice can be targeted, in some cases, on staining
3. Modify prescription in light of microbiologic findings
4. Prolonging antibiotics does not prevent recurrence
5. Patients with **COPD** or **1 wk of intubation should receive combination** therapy - risk of *P. aeruginosa* VAP
6. MRSA not expected in absence of ATB exposure; MSSA strongly suspected in comatose patients
7. Therapy against yeast is not required
8. Vancomycin administration for Gram-positive pneumonias associated with very poor outcomes
9. **Choice of agent should avoid agents with previous patient exposure**
10. Guidelines - regularly updated and customized



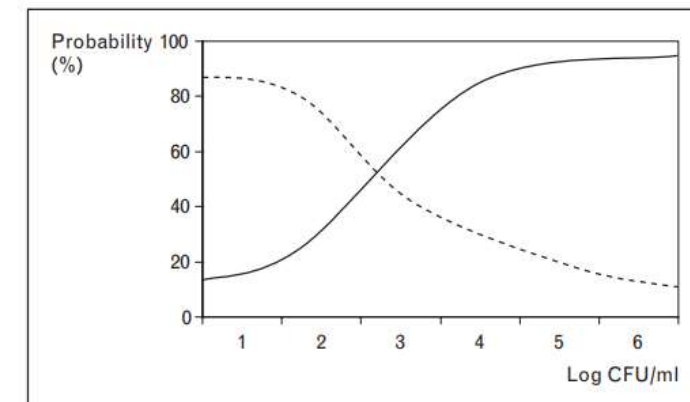
**Table 2** Logistic regression analysis about factors associated with pneumonia development and score points

Variables	OR	CI 95% Lower	CI 95% Upper	<i>p</i>	Score points
Age	1.018	1.007	1.029	0.001	1
Immunosuppressive therapy	2.287	1.618	3.231	<0.001	2
Ventilatory support	3.191	1.883	5.407	<0.001	3
Multisite colonization	2.761	1.935	3.940	<0.0001	3
COPD	1.755	1.177	2.616	0.006	1

OR: odds ratio. CI: confidence interval. COPD: chronic obstructive pulmonary disease

Russo, *European Journal of Clinical Microbiology & Infectious Diseases* 2025

**Figure 1** Probability of having pneumonia across the range of colony counts in quantitative culture



CFU, colony-forming units. — Pneumonia; - - - - - No pneumonia. Adapted with permission from [6].

Lisboa T and Rello J. *Curr Opin Infect Dis.* 2008;21:174-178.

# A.Baumannii: colonizzazione multisito

**Table 3** Comparison between patients with multisite colonization compared to patients with only respiratory tract colonization

Variables	Multisite colonization n=304 (%)	No multisite colonization n=456 (%)	p
Previous hospitalization (90 previous days)	88 (28.9)	112 (24.6)	0.180
Previous ICU admission (90 previous days)	56 (18.4)	44 (9.6)	<0.001
Previous surgery (30 previous days)	132 (44)	96 (22.4)	<0.001
>2 Comorbidities	92 (30.2)	317 (69.5)	<0.001
Charlson Comorbidity Index (mean), points	6 (±4.5)	4 (±4.1)	0.117
COVID-19	159 (52.3)	32 (7)	<0.001
Immunosuppressive therapy	164 (53.9)	188 (41.2)	<0.001
Sepsis	32 (11.6)	120 (28.6)	<0.001
Septic shock	260 (85.5)	272 (59.6)	<0.001
Ventilatory support	244 (80.2)	342 (75)	0.053
CRRT	100 (38.2)	94 (24.7)	<0.001
ECMO	28 (9.2)	32 (7)	0.275
Time between colonization and death (mean), days	12.2 (±18.3)	17.43 (±25)	0.002
Length of hospitalization (mean), days	32.9 (±21.3)	41.2 (±35.8)	<0.001
Length of ICU stay (mean), days	25.5 (±20.7)	31.1 (±30.6)	0.006
30-day mortality	220 (72.3)	277 (60.7)	<0.001
In-hospital mortality	252 (82.9)	328 (71.9)	0.005

multisite colonization is not only a marker of disease severity but also a predictor of poor prognosis

**Table 4** Multivariate analysis about factors associated with 30-day mortality

VARIABLES	HR	CI 95% Lower	CI 95% Upper	p
Charlson Comorbidity Index>3	2.21	1.881	3.14	0.001
Transfer in ICU from other wards	2.27	1.684	3.32	<0.001
Immunosuppressive therapy	2.122	1.843	4.427	0.01
Multisite colonization	3.461	2.935	4.95	<0.0001
Septic shock	2.756	2.147	5.615	0.004

HR: hazard ratio. CI: confidence interval. ICU: intensive care unit

# Terapia

- Cefiderocol 2g q8h ext infusion + Colistina + Linezolid



72h dopo...crescita al colturale su BAL di:

**Acinetobacter baumannii**  
**Klebs. pneumoniae ssp pneumoniae**

Carica batterica: 10.000.000 UFC/mL  
Carica batterica: 1.000 UFC/mL

# 72 ore dopo... al BA<sup>1</sup><sub>2</sub>

Acinetobacter baumannii  
Klebs. pneumoniae ssp pneumoniae

Carica batterica: 10.000.000 UFC/mL  
Carica batterica: 1.000 UFC/mL

	T0	T1	T2	VAP - Diagnosi
Tampone rettale	Neg	<i>A. Baumannii</i> <i>K. Pneumoniae</i> NDM	<i>A. Baumannii</i> <i>K. Pneumoniae</i> NDM VRE	<i>A. Baumannii</i> <i>K. Pneumoniae</i> NDM VRE
BAS		<i>A. Baumannii</i> 10*3 <i>K. Pneumoniae</i> NDM 10*3	<i>A. Baumannii</i> 10*5 <i>K. Pneumoniae</i> NDM 10*3 MRSA VRE	
BAL	ND	ND	ND	<i>A. Baumannii</i> 10*7 <i>K. Pneumoniae</i> NDM 10*3
Emocolture	ND	ND	ND	MRSE (1set)
Coassiale			<i>A. Baumannii</i> MRSA	

**Grazie per  
l'attenzione  
e**

