JNI
25es Journées
Nationales
d'Infectiologie

DEAUVILLE
et la région Normandie

du mercredi 12 au vendredi 14 juin 2024

SPILF

CMiT
Collège des universitaires
de Maladies
Infectieuses et Tropicales

Déclaration d'intérêt de 2014 à 2023

- Intérêts financiers : aucun

- Liens durables ou permanents : aucun

- Interventions ponctuelles : aucun

- Intérêts indirects : aucun

Objectifs

Evaluer l'impact d'un traitement antibiotique empirique comprenant un aminoside *versus* sans aminoside sur la survie et le pronostic rénal des patients admis en réanimation pour urosepsis

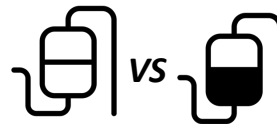**Etude rétrospective multicentrique**
(4 réanimations d'IDF)

Adultes hospitalisés en réanimation de **2015 à 2022**

Urosepsis
Sepsis/choc septique à point de départ urinaire

vs

Antibiothérapie probabiliste avec aminosides VS sans aminoside

Score de propension
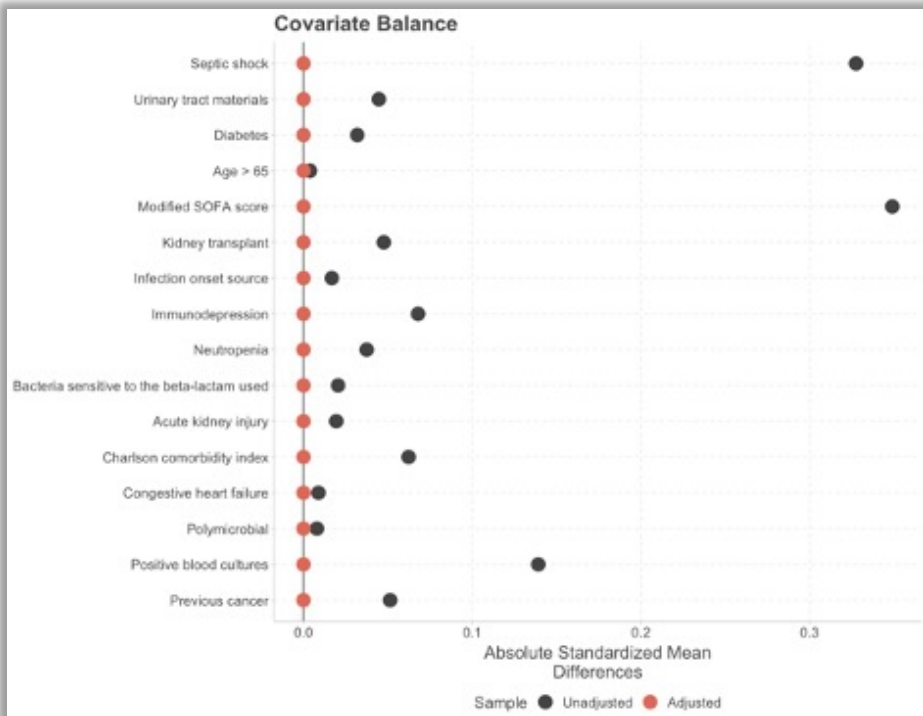(IPTW)

Critères de jugement

- **Principal :** mortalité à J30
- **Secondaires** : récupération rénale à J30, la nécessité de dialyse dans les 30 jours, le MAKE 30 et la durée de séjour en réanimation

Caractéristiques initiales

Variables	Without AG (n=136)	With AG (n=444)	Total (n=580)	p-Value
Age (median, IQR)	71 (58-79)	70 (57-76)	70 (58-77)	0.574
Male	66 (48.5%)	245 (55.2%)	311 (53.6%)	0.174
Infection onset source				0.487
Community acquired	49 (36.0%)	161 (36.3%)	210 (36.2%)	
Community onset healthcare associated	62 (45.6%)	182 (41.0%)	244 (42.1%)	
Hospital acquired	25 (18.4%)	101 (22.7%)	126 (21.7%)	
Comorbidities				
Chronic kidney disease	38 (27.9%)	157 (35.4%)	195 (33.6%)	0.109
Kidney transplant	13 (9.6%)	68 (15.3%)	81 (14.0%)	0.090
Urinary tract materials	29 (21.3%)	117 (26.4%)	146 (25.2%)	0.237
Chronic urinary diversion	13 (9.6%)	31 (7.0%)	44 (7.6%)	0.321
Diabetes	39 (28.7%)	144 (32.4%)	183 (31.6%)	0.410
Congestive heart failure	16 (11.8%)	60 (13.5%)	76 (13.1%)	0.597
Previous malignancy	62 (45.6%)	185 (41.7%)	247 (42.6%)	0.418
Active malignancy	41 (30.1%)	119 (26.8%)	160 (27.6%)	0.445
HIV	4 (2.9%)	9 (2.0%)	13 (2.2%)	0.529
Cirrhosis	17 (12.5%)	20 (4.5%)	37 (6.4%)	**<0.001**
Immunosuppression	37 (27.2%)	154 (34.7%)	191 (32.9%)	0.104
Charlson comorbidity index	6 (4-8)	5.5 (4-8)	6 (4-8)	0.728
Admission characteristics				
SAPS II score (median, IQR)	44.00 (33-54)	48.00 (37-61)	46.00 (36-60)	**0.014**
SOFA score (median, IQR)	5.00 (3-7)	7.00 (5-10)	7.00 (4-9)	**<0.001**
Septic shock	44 (32.4%)	291 (65.5%)	335 (57.8%)	**<0.001**
Acute kidney injury	105 (77.2%)	343 (79.8%)	448 (79.2%)	0.273
Mechanical ventilation	17 (12.5%)	98 (22.1%)	115 (19.8%)	**0.029**
Neutropenia	1 (0.7%)	19 (4.3%)	20 (3.4%)	**0.048**
Urgent urinary diversion	34 (25.0%)	112 (25.2%)	146 (25.2%)	0.958

Variables	Without AG (n=136)	With AG (n=444)	Total (n=580)	p-Value
Microbiology				
Enterobacterales	113 (83.1%)	384 (86.5%)	497 (85.7%)	0.322
Proteus mirabilis	11 (8.1%)	16 (3.6%)	27 (4.7%)	**0.030**
Escherichia coli	78 (57.4%)	261 (58.8%)	339 (58.4%)	0.767
Group 2	28 (20.6%)	96 (21.6%)	124 (21.4%)	0.797
Group 3	14 (10.3%)	38 (8.6%)	52 (9.0%)	0.535
ESBL	20 (14.7%)	68 (15.3%)	88 (15.2%)	0.862
3CG-resistant	22/113 (19.4%)	75/384 (19.5%)	97/497 (19.5%)	0.988
Enterococcus faecalis	11 (8.1%)	52 (11.7%)	63 (10.9%)	0.235
Enterococcus faecium	2 (1.5%)	11 (2.5%)	13 (2.2%)	0.488
Pseudomonas aeruginosa	11 (8.1%)	35 (7.9%)	46 (7.9%)	0.938
Staphylococcus aureus	6 (4.4%)	6 (1.4%)	12 (2.1%)	**0.028**
Other pathogens	4 (2.9%)	22 (5.0%)	26 (4.5%)	0.321
Polymicrobial	24 (17.6%)	76 (17.1%)	100 (17.2%)	0.886
Positive blood cultures	64 (47.1%)	272 (61.3%)	336 (57.9%)	**0.003**
GNB resistant to the beta-lactam used	12/113 (10.6%)	28/362 (7.7%)	40/475 (8.4%)	0.441
GNB resistant to the aminoglycoside used	-	23/325 (7.1%)	-	-

AG = aminoglycosides ; **Urinary tract materials** = sonde vésicale et/ou sonde JJ et/ou néphrostomie ; **Chronic urinary diversion** = dérivation urinaire chirurgicale **Immunosuppression** = prednisone > 10 mg/jour au long cours et/ou immunosuppresseurs au long cours et/ou chimiothérapie < 1 mois ; **Neutropenia** = PNN < 0,5 G/L ; **3CG** third-generation cephalosporins ; **ESBL** = extended spectrum beta-lactamase ; **GNB** = gram-négative bacteria

Score de propension

Covariate Balance

91 patients par groupe

Analyse multivariée des facteurs de risque de mortalité

Variables	Survived (n=519)	Died (n=61) 10,5%	Total (n=580)	p-Value
Septic shock	288 (55.5%)	47 (77.0%)	335 (57.8%)	0.129
Urinary tract materials	132 (25.4%)	14 (23.0%)	146 (25.2%)	0.158
Diabetes	162 (31.2%)	21 (34.4%)	183 (31.6%)	0.219
Age > 65	123 (23.7%)	17 (27.9%)	140 (24.1%)	0.945
Modified SOFA score (median, IQR)	2 (1-3)	4 (2-6)	2 (1-4)	<0.001
Kidney transplant	74 (14.3%)	7 (11.5%)	81 (14.0%)	0.301
Infection onset source	327 (63.0%)	43 (70.5%)	370 (63.8%)	0.233
Immunodepression	173 (33.3%)	18 (29.5%)	191 (32.9%)	0.510
Neutropenia	17 (3.3%)	3 (4.9%)	20 (3.4%)	0.770
Bacteria sensitive to the beta-lactam used	447/513 (87.1%)	56/60 (93.3%)	503/573 (87.8%)	0.091
Acute kidney injury	398/509 (78.2%)	50/57 (87.7%)	448/566 (79.2%)	0.157
Charlson comorbidity index (median, IQR)	5 (4-7)	7 (6-9)	6 (4-8)	0.010
Congestive heart failure	59 (11.4%)	17 (27.9%)	76 (13.1%)	0.026
Polymicrobial	84 (16.2%)	16 (26.2%)	100 (17.2%)	0.389
Positive blood cultures	294 (56.6%)	42 (68.9%)	336 (57.9%)	0.123
Previous cancer	157 (30.3%)	25 (41.0%)	182 (31.4%)	0.291
Aminoglycosides	398 (76.7%)	46 (75.4%)	444 (76.6%)	0.131

Analyse de survie

Overall Survival

Aminoglycosides
- Without aminoglycosides
- With aminoglycosides

Time since ICU admission (days)

Mortalité à J30 :
- sans aminosides : **12,1%**
- avec aminosides : **7,7%**
HR = 0,65 [0.35; 1.23], *p* = 0,19

Critères de jugement secondaires
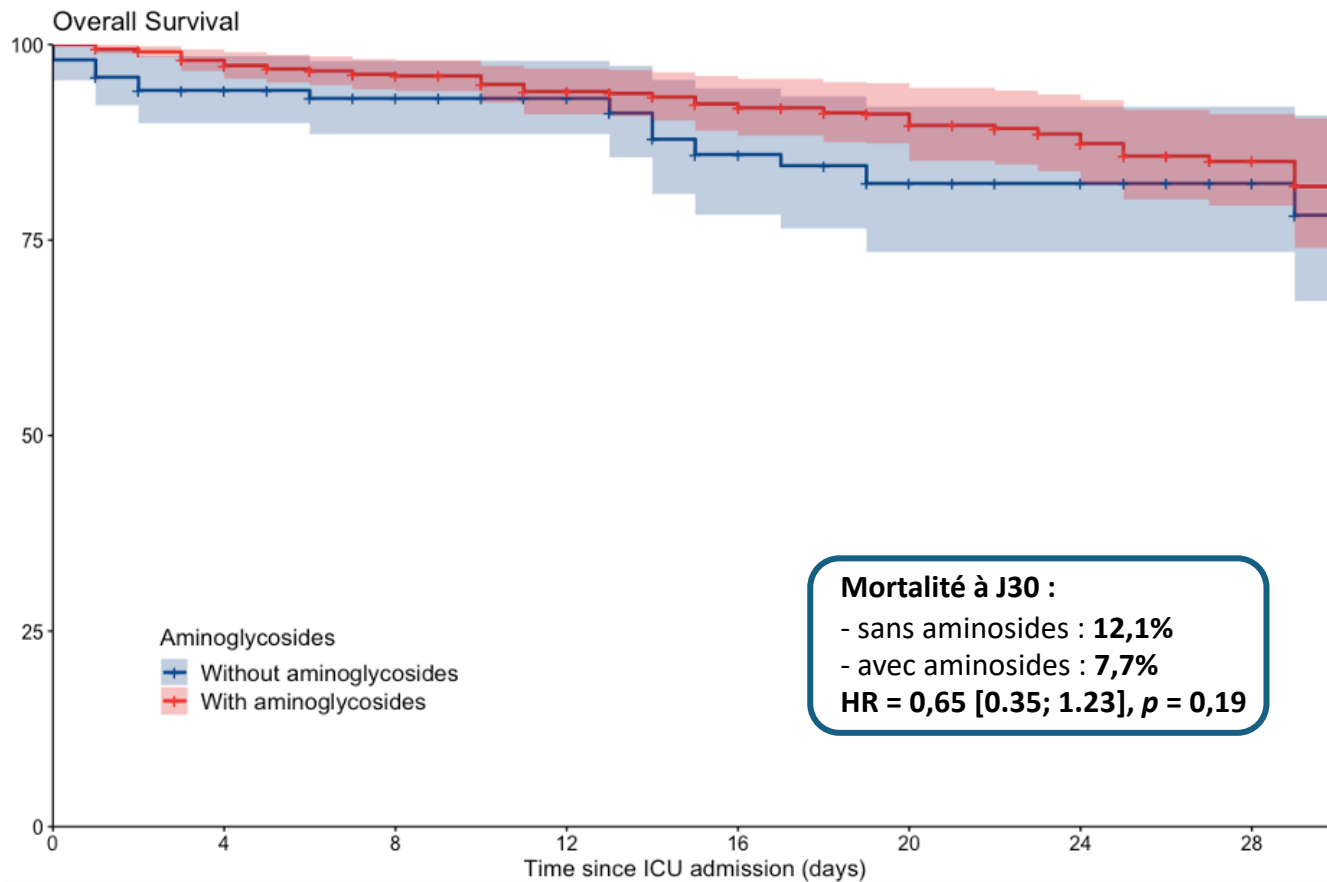
Mortalité J30 en sous-groupes

Subgroups	Death without AG (n=15/136)	Death with AG (n=46/444)	p-Value
Septic shock (n=335)	8/44 (18.2%)	39/291 (13.4%)	0.395
Positive blood culture (n=336)	10/64 (15.6%)	32/272 (11.8%)	0.401
Kidney transplant (n=81)	0/13 (0.0%)	7/68 (10.3%)	0.591
ESBL Enterobacterales (n=88)	2/20 (10.0%)	5/68 (7.4%)	0.655
Gram negative bacteria sensitive to the beta-lactam used (n=435)	12/101 (11.9%)	32/334 (9.6%)	0.502
Gram negative bacteria resistant to the beta-lactam used (n=40)	1/12 (8.3%)	1/28 (3.6%)	0.515

Critères de jugement secondaires

Secondary outcomes	Without AG (n=91)	With AG (n=91)	Total (n=182)	p-Value
No renal recovery at day 30	12 (13.7%)	10 (11.5%)	23 (12.6%)	0.540
Need for RRT within 30 days	11 (12.1%)	10 (10.9%)	21 (11.5%)	0.640
MAKE 30	20 (21.7%)	17 (18.9%)	37 (20.3%)	0.580
ICU length of stay, day (median, IQR)	3.00 (1.4-4)	2.00 (1-4)	2.00 (1-4)	0.507

AG = aminoglycosides ; RRT = renal remplacement therapy ; ICU = intensive care unit ; ESBL = extended spectrum beta-lactamase
MAKE 30 = major adverse kidney events at Day 30 (composite criteria : no renal recovery and/or new renal replacement therapy and/or death)

25es Journées Nationales d'Infectiologie

Conclusion

- « Tendance » mais pas de réduction significative de la mortalité à J30 avec association d'un aminoside au traitement probabiliste chez les patients admis en réanimation pour urosepsis.

- L'utilisation des aminosides n'est pas associée à une augmentation de la toxicité rénale.

- Etude prospective randomisée nécessaire pour définitivement répondre à la question?