Treatment duration of febrile urinary tract infection: a pragmatic randomized, double-blind placebo-controlled non inferiority trial in men and women NieuwKoop et al. BMC medicine 2017.

- Etude randomisée, double aveugle contre placebo, non infériorité
- Adultes, hommes et femmes, infection urinaire fébrile
- 7 jours vs 14 jours
- Ciprofloxacine 500 mg ou placebo 2 fois/jour la 2ème semaine.

- *Critère de jugement principal*:

guérison clinique 10-18 jours après traitement

- *Critères secondaires*:

guérison bactériologique, 10-18 jours après traitement et guérison clinique 70–84 jours post-traitement.

- Effectif nécessaire: 200/bras, marge non infériorité de 10%

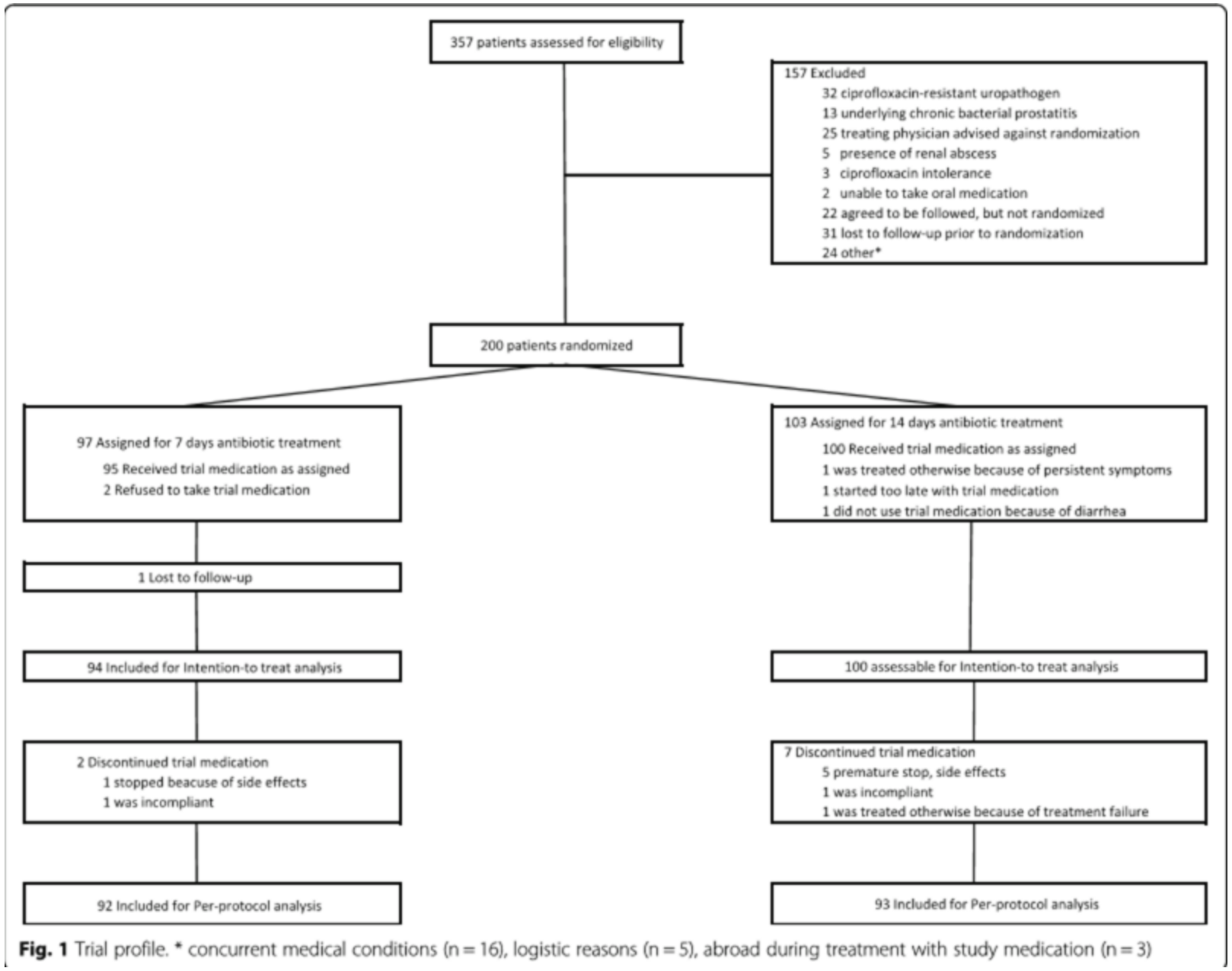


Fig. 1 Trial profile. * concurrent medical conditions (n = 16), logistic reasons (n = 5), abroad during treatment with study medication (n = 3)

Table 1 Baseline characteristics of 357 patients with febrile urinary tract infection

	Randomized (n = 200)		Not randomized (n = 157)	*P* value[c]
	Antibiotic treatment for 7 days (n = 97)	Antibiotic treatment for 14 days (n = 103)		
Age (years)	60 (48–72)	61 (40–73)	63 (49–75)	0.277
Male sex	44 (45%)	42 (41%)	58 (37%)	0.247
Urologic history				
Indwelling urinary catheter	3 (3%)	2 (2%)	12 (8%)	0.024
Urinary tract disorder[a]	28 (29%)	28 (27%)	52 (33%)	0.296
Recurrent UTI[b]	19 (20%)	19/100 (19%)	47/147 (32%)	0.007
Comorbidity				
Diabetes mellitus	12 (12%)	17 (17%)	25 (16%)	0.709
Malignancy	3 (3%)	5 (5%)	17 (11%)	0.012
Heart failure	12 (12%)	6 (6%)	19 (12%)	0.340
Cerebrovascular disease	5 (5%)	5 (5%)	13 (8%)	0.210
Chronic renal insufficiency	3 (3%)	2 (2%)	10 (6%)	0.070
COPD	10 (10%)	11 (11%)	23 (15%)	0.236
Immunocompromised	3 (3%)	8 (8%)	14 (9%)	0.209
Signs and symptoms at presentation				
Presentation at emergency department	59 (61%)	68 (66%)	145 (92%)	<0.001
Antibiotic pretreatment	23 (24%)	29 (28%)	56 (36%)	0.048
Fever duration, hours	30 (15–48)	36 (20–60)	48 (19–96)	0.081
Dysuria	82/95 (86%)	78/102 (77%)	102/145 (70%)	0.019
Flank pain	57/96 (59%)	67/102 (66%)	91/144 (63%)	0.914
Suprapubic pain	51/96 (53%)	48/100 (48%)	72/145 (50%)	0.876
Perineal pain	4/96 (4%)	7/98 (7%)	8/140 (6%)	0.986
Shaking chills within previous 24 hours	63/97 (65%)	60/101 (59%)	102/149 (70%)	0.256
Temperature > 38 °C	66 (68%)	76 (74%)	121 (77%)	0.226
Systolic blood pressure (mm Hg, mean, SD)	132 (19)	132 (22)	129 (20)	0.324
Pulse rate (beats/minute)	93 (17)	94 (19)	97 (19)	0.360
Outpatient treatment	45 (46%)	45 (44%)	23 (15%)	<0.001
Positive urine culture	69 (71%)	68 (66%)	107 (68%)	0.944
Positive blood culture	20/88 (23%)	15/98 (15%)	45/153 (29%)	0.012
Positive urine and/or blood culture	75 (77%)	70 (68%)	118 (75%)	0.571
Initial intravenous dose(s) of antibiotics	48 (50%)	55 (53%)	133 (85%)	< 0.001

Table 3 Clinical and bacteriologic outcomes in the intention-to-treat and per-protocol population

	Randomized		Difference (90% CI)	Non-inferiority test *P* value	Not randomized population
	Antibiotic treatment for 7 days	Antibiotic treatment for 14 days			
Intention-to-treat population	(n = 94)	(n = 99)			
Short-term efficacy[a]	(n = 94)	(n = 99)			(n = 119)
Clinical cure[b]	85 (90.4%)	94 (94.9%)	−4.5% (−10.7 to 1.7)	0.072	101 (84.9%)
Bacteriologic cure[c]	86/93 (92.5%)	89/92 (96.7%)	−4.3% (−9.7 to 1.2)	0.041	94/109 (86.2%)
Cumulative efficacy[d]	(n = 94)	(n = 94)			(n = 116)
Clinical cure[b]	87 (92.6%)	86 (91.5%)	1.1% (−5.5 to 7.6)	0.005	88 (75.9%)
Per-protocol population	(n = 92)	(n = 92)			
Short-term efficacy[a]	(n = 92)	(n = 92)			NA
Clinical cure[b]	83 (90.2%)	87 (94.6%)	−4.3% (−10.8 to 2.1)	0.073	
Bacteriologic cure[c]	84/91 (92.3%)	83/86 (96.5%)	−4.2% (−9.9 to 1.4)	0.045	
Cumulative efficacy[d]	(n = 92)	(n = 87)			
Clinical cure[b]	85 (92.4%)	79 (90.8%)	1.6% (−5.3 to 8.4)	0.005	

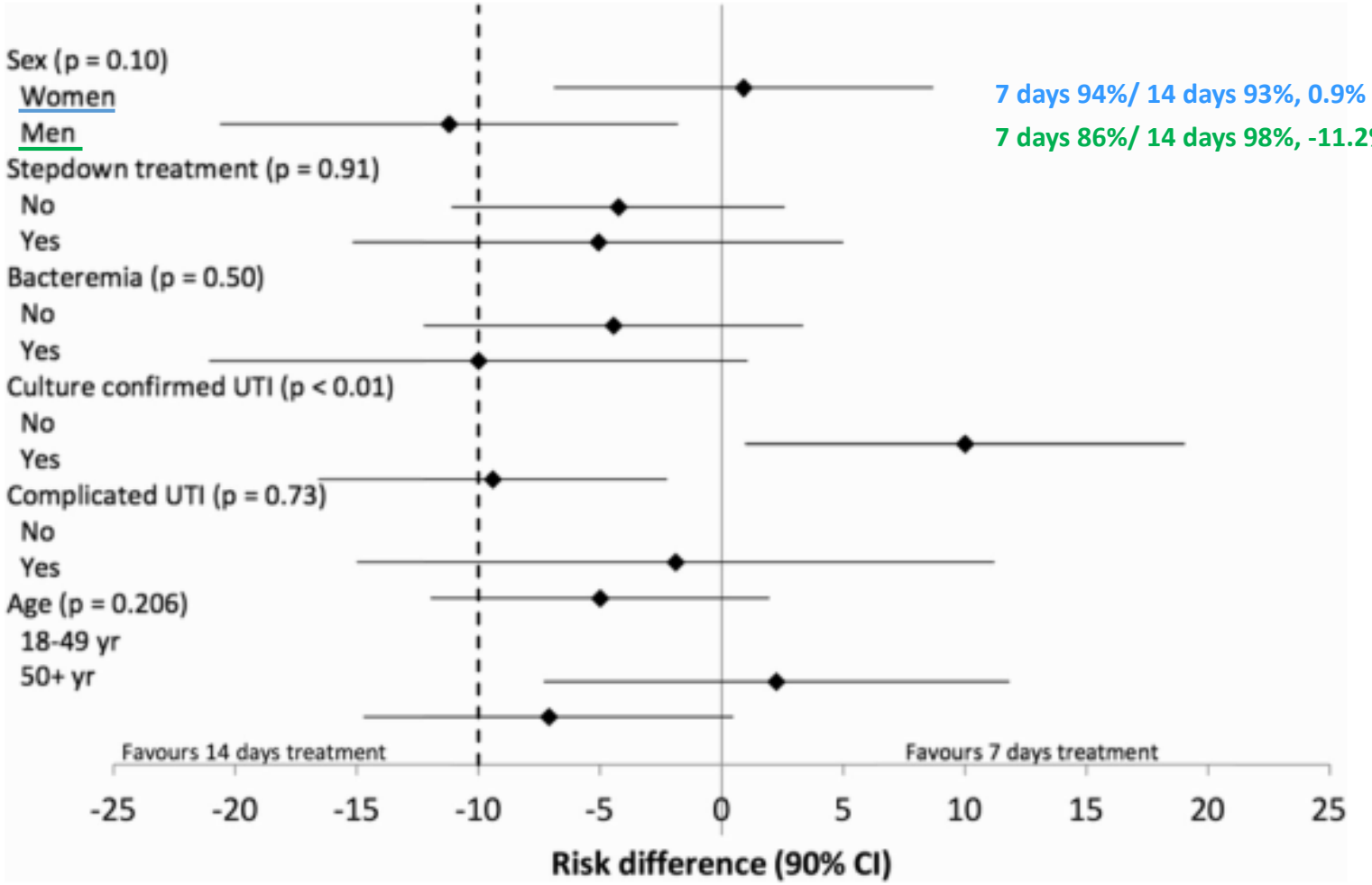
Data presented as number (%), unless otherwise indicated. NA: not applicable

[a]Short-term efficacy: endpoints assessed at 10- to 18-days post-treatment visit

[b]Clinical cure: being alive with absence of fever and resolution of UTI symptoms through post-treatment visit with no additional antimicrobial therapy for a relapse of UTI prescribed

[c]Bacteriologic cure: elimination of study entry uropathogen or pathogen growth < 10^4 CFU/mL (women) or <10^3 CFU/mL (men) combined with disappearance of leucocyturia

[d]Cumulative efficacy: endpoint assessed at 70- to 84-days post-treatment visit



7 days 94%/ 14 days 93%, 0.9% (90% CI, -6.9 to 8.7, p=0.011)

7 days 86%/ 14 days 98%, -11.2% (90% CI, -20.6 to -1.8, p=0.42)

Fig. 2 Difference in clinical cure rates (10- to 18-days post-treatment) of febrile UTI treated for 7 days versus 14 days in specific subgroups. Stepdown treatment implies initial empiric intravenous antibiotic treatment. *UTI* urinary tract infection; *CI* confidence interval. *P* values represent test for interaction. Data presented from intention to treat analysis

Antimicrobial for 7 or 14 Days for Febrile Urinary Tract Infection in Men: A Multicenter Noninferiority Double-Blind, Placebo-Controlled, Randomized Clinical Trial

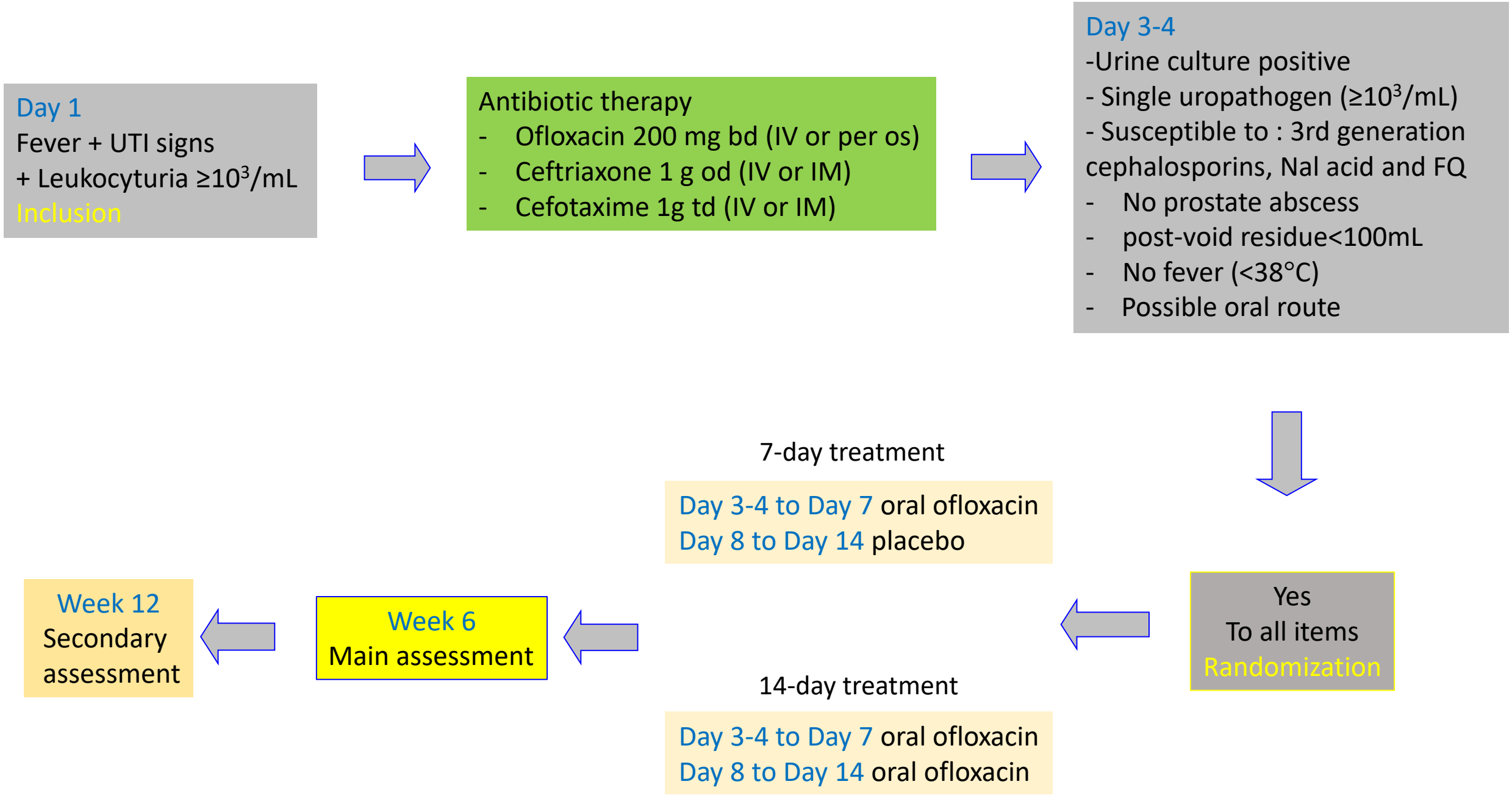
Matthieu Lafaurie,[1] Sylvie Chevret,[2] Jean-Paul Fontaine,[3] Pierre Mongiat-Artus,[4] Victoire de Lastours,[5,6] Lélia Escaut,[7] Stéphane Jaureguiberry,[7] Louis Bernard,[8] Franck Bruyere,[9] Caroline Gatey,[10] Sophie Abgrall,[11] Milagros Ferreyra,[12] Hugues Aumaitre,[12] Caroline Aparicio,[13] Valérie Garrait,[14] Vanina Meyssonnier,[15] Anne Bourgarit-Durand,[16] Amélie Chabrol,[17] Emilie Piet,[18] Jean-Philippe Talarmin,[19] Marine Morrier,[20] Etienne Canoui,[21] Caroline Charlier,[21,22] Manuel Etienne,[23] Jerome Pacanowski,[24] Nathalie Grall,[6,25] Kristell Desseaux,[26] Florence Empana-Barat,[27] Isabelle Madeleine,[28] Béatrice Bercot,[6,29] Jean-Michel Molina,[30,a] and Agnès Lefort,[5,6,a]; for the PROSTASHORT Study Group[b]

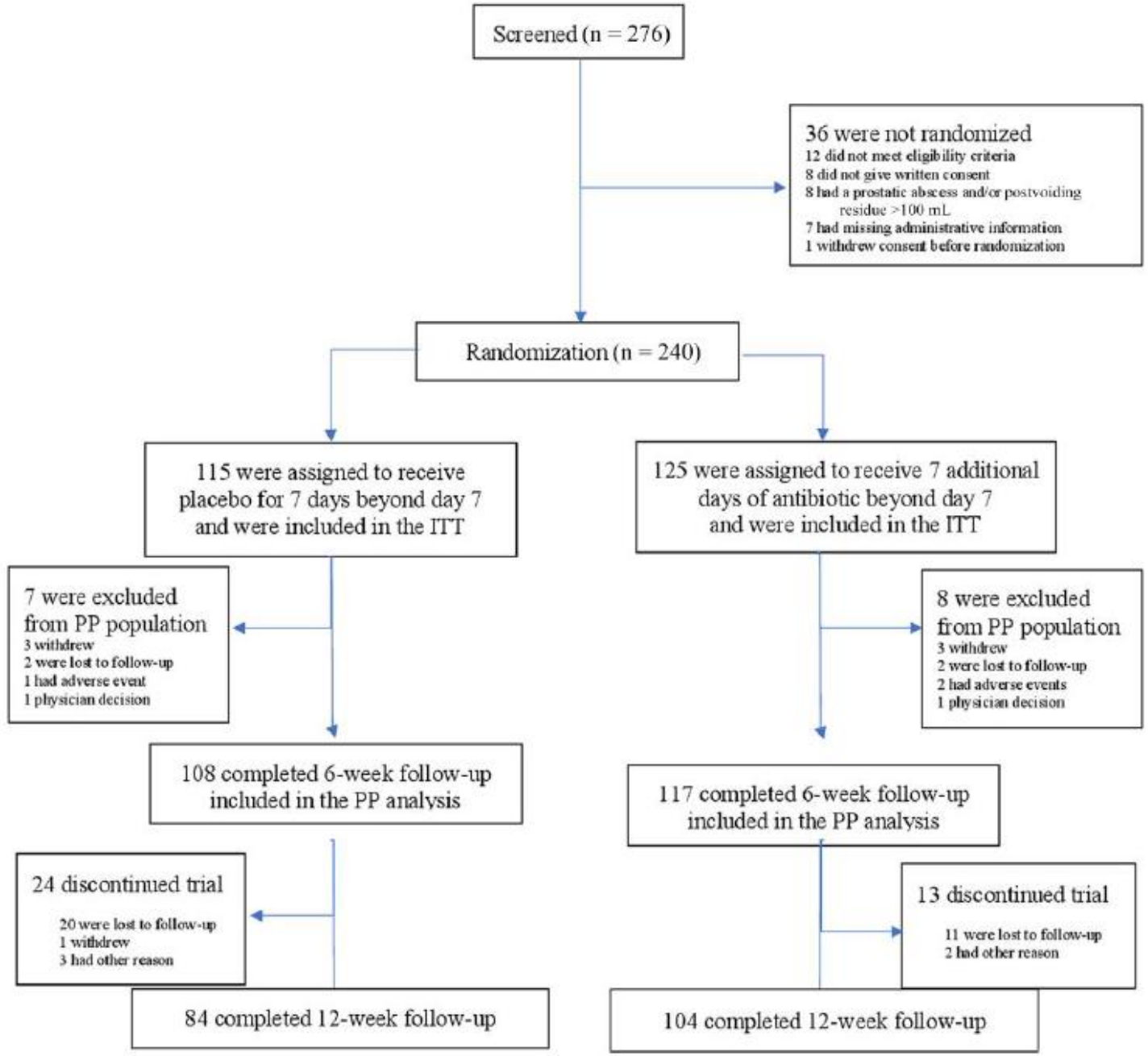
Clin Infect Dis. 2023

Endpoints

- **Primary endpoint**: treatment success, defined as a negative urine culture, the absence of fever and of subsequent antibiotic treatment between the end of treatment and 6 weeks after day 1.

- **Secondary endpoints**: recurrent urinary tract infection within weeks 6 and 12 after day 1, rectal carriage of antimicrobial-resistant *Enterobacterales* and drug-related events.


Day 1
Fever + UTI signs
+ Leukocyturia ≥10³/mL
Inclusion
Antibiotic therapy
- Ofloxacin 200 mg bd (IV or per os)
- Ceftriaxone 1 g od (IV or IM)
- Cefotaxime 1g td (IV or IM)
Day 3-4
-Urine culture positive
- Single uropathogen (≥10³/mL)
- Susceptible to : 3rd generation cephalosporins, Nal acid and FQ
- No prostate abscess
- post-void residue<100mL
- No fever (<38°C)
- Possible oral route
Yes
To all items
Randomization
7-day treatment
Day 3-4 to Day 7 oral ofloxacin
Day 8 to Day 14 placebo
14-day treatment
Day 3-4 to Day 7 oral ofloxacin
Day 8 to Day 14 oral ofloxacin
Week 6
Main assessment
Week 12
Secondary assessment


Screened (n = 276)
36 were not randomized
12 did not meet eligibility criteria
8 did not give written consent
8 had a prostatic abscess and/or postvoiding residue >100 mL
7 had missing administrative information
1 withdrew consent before randomization
Randomization (n = 240)
115 were assigned to receive placebo for 7 days beyond day 7 and were included in the ITT
125 were assigned to receive 7 additional days of antibiotic beyond day 7 and were included in the ITT
7 were excluded from PP population
3 withdrew
2 were lost to follow-up
1 had adverse event
1 physician decision
8 were excluded from PP population
3 withdrew
2 were lost to follow-up
2 had adverse events
1 physician decision
108 completed 6-week follow-up included in the PP analysis
117 completed 6-week follow-up included in the PP analysis
24 discontinued trial
20 were lost to follow-up
1 withdrew
3 had other reason
13 discontinued trial
11 were lost to follow-up
2 had other reason
84 completed 12-week follow-up
104 completed 12-week follow-up

Caractéristiques des patients

Characteristic	7-Day Therapy (n = 115)	14-Day Therapy (n = 125)
Age, y, median (IQR)	62.3 (49.9–73.2)	58.9 (49.3–72.5)
Age >50 y	86 (74.8)	91 (72.8)
BMI, kg/m^2, median (IQR)	24.8 (22.7–27.2)	25 (22.7–27.2)
Coexisting medical condition		
Obesity (BMI ≥30 kg/m^2)	20 (17.4)	10 (8.0)
Immunodepression	12 (10.4)	8 (6.4)
Diabetes	28 (24.3)	20 (16.0)
Chronic kidney disease	13 (11.3)	6 (4.8)
CCI score, median (IQR)	0 (0–1)	0 (0–1)
Urinary tract–related comorbidities		
Any prior urologic history	38 (33.0)	38 (30.4)
Benign prostatic hypertrophy	28 (24.3)	23 (18.4)
Prostate resection	12 (10.4)	8 (6.4)
Prostate cancer	2 (1.7)	4 (3.2)
Prior UTI	11 (9.6)	15 (12.0)
Prostate calcifications	23 (20.0)	24 (19.4)
Prostate size volume, cc, median (IQR)	35 (25–57)	33 (25–45)
Prostate size <30 cc	35 (33.7)	42 (38.5)

Characteristic	7-Day Therapy (n = 115)	14-Day Therapy (n = 125)
Clinical presentation		
Body temperature, °C, median (IQR)	38.3 (37.7–38.9)	38.2 (37.3–38.8)
Urinary burning	92 (80.0)	104 (83.2)
Dysuria	75 (65.2)	86 (68.8)
Frequency of urination	77 (66.9)	89 (71.2)
Urgency of urination	48 (41.7)	54 (43.2)
Blood WBC at diagnosis, 10^9/L, median (IQR)	13.4 (10.4–17.0)	12.7 (9.6–17.4)
No. of participants with positive blood cultures/total participants with blood cultures performed	15/96 (15.6)	18/100 (18)
Pathogen identified		
Escherichia coli	105 (91.3)	97 (77.6)
Klebsiella spp	5 (4.3)	14 (11.2)
Other pathogens	5 (4.3)	14 (11.2)
WBC in urine, 10^9/L, median (IQR)	1.0 (0.3–1.0)	1.0 (0.5–1.0)
Initial antibiotic treatment		
3GC[a]	105 (91.3)	110 (88.0)
Ofloxacin	10 (8.7)	15 (12.0)
Duration of 3GC treatment, d, median (IQR)	2 (2–3)	2 (2–3)

Table 2. Difference in Risk of Treatment Success 6 Weeks After the First Day of Antibiotic Therapy (Primary Outcome) in the Intention-to-Treat and Per-Protocol Analyses

Analysis	7-Day Therapy No. of Participants With Event/Total No. (%)	14-Day Therapy No. of Participants With Event/Total No. (%)	*P* Value	Risk Difference (95% CI)
Intention-to-treat	(n = 115)	(n = 125)		
Main analysis[a]	64 (55.7)	97 (77.6)		−21.9 (−33.3 to −10.1)
Microbiological success[b]	91 (79.1)	117 (93.6)	.001	−14.5 (−23.5 to −6.0)
Clinical success[c]	110 (95.6)	125 (100)	.02	−4.3 (−9.8 to −1.3)
No new antibiotic after the end of treatment	93 (80.9)	116 (92.8)	.007	−11.9 (−20.9 to −3.5)
Per-protocol	(n = 108)	(n = 117)		…
Main analysis[a]	64 (59.3)	96 (82.1)		−22.8 (−34.2 to −11.0)[d]

Table 3. Predictive Factors of Treatment Success

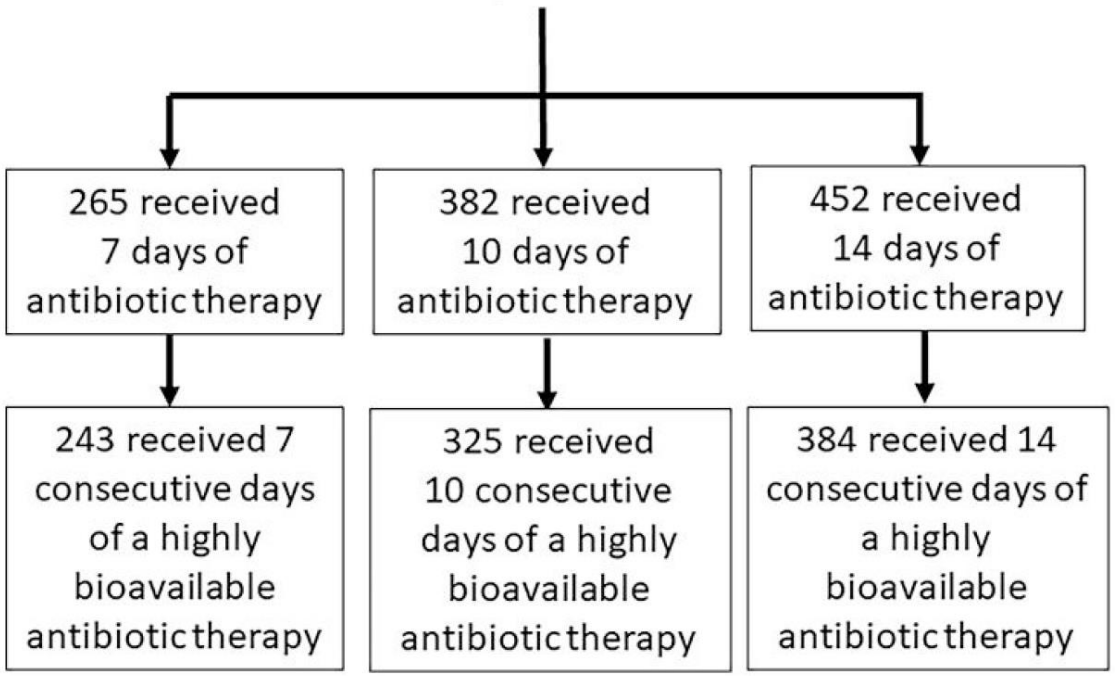
Factor	No. of Treatment Success/Total	Univariate Analysis OR for Treatment Success (95% CI)	Multivariable Analysis OR for Treatment Success (95% CI)	*P* Value
Total	161/240 (67.1)			
Randomization group				
14-d therapy	97/125 (77.6)	1.0 (reference)	…	
7-d therapy	64/115 (55.6)	0.4 (.2–.6)	0.4 (.2–.7)	.002
Age >50 y	109/177 (61.6)	0.3 (.2–.7)	0.4 (.2–.9)	.023
Coexisting medical condition, No./total No. (%)				
Diabetes	25/48 (52.1)	0.5 (.2–.9)	0.9 (.3–2.2)	.78
Obesity (BMI ≥30 kg/m^2)	15/30 (50.0)	0.4 (.2–.9)	0.7 (.3–1.6)	.35
CCI score >0	50/89 (56.2)	0.5 (.2–.8)	0.8 (.3–1.7)	.49
Urinary tract–related comorbidities				
Any urologic history	45/76 (59.2)	0.6 (.3–1.1)	1.3 (.4–3.8)	.67
Prostatic hypertrophy	26/51 (51.0)	0.4 (.2–.8)	0.5 (.2–1.7)	.27
Prostate calcifications	30/47 (63.8)	0.8 (.4–1.6)	…	
Prostate size >30 g	90/136 (66.2)	0.9 (.5–1.6)	…	
Clinical presentation				
Fever	98/145 (67.6)	1.1 (.6–1.8)	…	
Urinary burning	134/196 (68.4)	1.4 (.7–2.8)	…	
Dysuria	109/161 (67.7)	1.1 (.6–1.9)	…	
Frequency of urination	119/166 (71.7)	1.9 (1.1–3.4)	…	
Urgency of urination	74/102 (72.5)	1.5 (.9–2.7)	…	
WBC at diagnosis >10^9 cells/L	122/181 (67.4)	1.1 (.6–2.0)	…	
Participants with positive blood culture	20/33 (60.6)	0.7 (.3–1.6)	…	
Pathogen identified, No./total No. (%)				
Escherichia coli	135/202 (66.8)	0.9 (.4–2.0)	…	
Other pathogens	26/38 (68.4)	1.0 (reference)	…	
WBC in urine >10^9 cells/L	83/131 (63.3)	0.7 (.4–1.2)	…	
Initial antibiotic treatment				
3GC	143/215 (66.5)	0.8 (.3–1.9)	…	

Defining the Optimal Duration of Therapy for Hospitalized Patients With Complicated Urinary Tract Infections and Associated Bacteremia

John McAteer,[1] Jae Hyoung Lee,[1] Sara E. Cosgrove,[2] Kathryn Dzintars,[3] Suiyini Fiawoo,[1] Emily L. Heil,[4] Ronald E. Kendall,[5] Ted Louie,[6] Anurag N. Malani,[7] Priya Nori,[8] Kelly M. Percival,[9] and Pranita D. Tamma[1]

CID 2023:76 (1 May)

Patients ≥ 18 years of age with gram-negative bloodstream infections during the 2019 calendar year across 24 hospitals meeting eligibility criteria for cUTI* with bacteremia due to the same bacterial species



***Complicated UTI (cUTI) defined as growth of at least 1,000 CFU/mL of a gram-negative organism in the urine of an adult patient (same bacterial species as in the blood culture) with any of the following conditions:**

- Male sex OR
- UTI associated with one or more of the following underlying conditions at time of diagnosis:
  - Prostate hypertrophy
  - Prostate cancer
  - Nephrolithiasis
  - Intermittent or indwelling urinary catheter
  - Urethral stent
  - Nephrostomy tube
  - Intestinal conduit
  - Renal transplant

Table 2. Baseline Characteristics of 834 Adults With Complicated Urinary Tract Infections With Associated Bloodstream Infections, Before and After Inverse Probability of Treatment Weighting, Comparing 10 Days With 14 Days of Antibiotic Therapy

	Full Cohort			Inverse Probability Weighted Cohort		
Variable	10 Days (n = 382; 46%)	14 Days (n = 452; 54%)	*P*	10 Days (%)	14 Days (%)	Standardized Mean Difference
Age in years, median (IQR)	70 (60–80)	68 (56–77)	.04	…	…	…
Age ≥65 years	246 (64%)	263 (58%)	.08	64.4	64.9	0.011
Male sex, n (%)	244 (64%)	293 (65%)	.83	63.9	64.5	0.013
Weight, median (IQR), kg	78 (66–94)	82 (68–96)	.09	78 (66–94)	80 (68–93)	0.007
Body mass index ≥30 kg/m^2	137 (36%)	178 (39%)	.33	35.9	35.4	0.011
Race/ethnicity, n (%)						
White	212 (55%)	238 (53%)	.45	…	…	…
Black	76 (20%)	110 (24%)	.15	…	…	…
Asian	15 (3.9%)	17 (3.8%)	.99	…	…	…
Hispanic	53 (14%)	60 (13%)	.88	…	…	…
Severe immunocompromise,[a] n (%)	71 (19%)	117 (26%)	.015	18.6	18.1	0.013
Intensive care unit on day 1, n (%)	107 (28%)	120 (27%)	.69	28.0	27.7	0.007
Pitt bacteremia score ≥4 on day 1, n (%)	52 (14%)	70 (15%)	.51	13.6	13.8	0.006
Charlson Comorbidity Index ≥5, n (%)	58 (15%)	84 (19%)	.23	15.2	15.7	0.016
Diabetes, n (%)	116 (30%)	172 (38%)	.02	30.4	30.6	0.006
Cerebrovascular disease, n (%)	61 (16%)	63 (14%)	.47	16.0	15.3	0.019
Chronic kidney disease, n (%)	95 (25%)	143 (32%)	.04	24.9	25.0	0.003
Renal replacement therapy, n (%)	11 (2.9%)	14 (3.1%)	.99	2.9	3.2	0.020
Urologic conditions/devices on day 1, n (%)	208 (54%)	288 (64%)	.008	54.5	54.0	0.009
Renal transplant	13 (3.4%)	42 (9.3%)	.001	…	…	…
Prostate hypertrophy	45 (12%)	55 (12%)	.95	…	…	…
Nephrostomy tube	19 (5%)	36 (8%)	.11	…	…	…
Ureteral stent	9 (2.4%)	6 (1.3%)	.39	…	…	…
Ileostomy	5 (1.3%)	7 (1.5%)	.99	…	…	…
Suprapubic catheter	3 (0.8%)	16 (3.5%)	.015	…	…	…
Intermittent urinary catheterization	19 (5%)	25 (5.5%)	.84	…	…	…
Foley catheter	55 (14%)	56 (12%)	.45	…	…	…
Prostate cancer	12 (3.1%)	18 (4%)	.64	…	…	…
Nephrolithiasis	70 (18%)	96 (21%)	.34	…	…	…
Active empiric therapy, n (%)	348 (91%)	407 (90%)	.61	90	90	0.008
Pseudomonas aeruginosa, n (%)	20 (5.2%)	34 (7.5%)	.23	5.2	5.4	0.006
ESBL-producing Enterobacterales, n (%)	51 (13%)	55 (12%)	.68	13.4	14.0	0.019
Carbapenem-resistant organism, n (%)	4 (1%)	2 (0.4%)	.54	…	…	…
Source control by end of antibiotic therapy, n (%)	65 (17%)	50 (11%)	.03	11.3	11.5	0.009

	Durée Antibiothérapie 10 jours	Durée Antibiothérapie 14 jours	p
Nombre de patients	382	452	
Rechute* à J30	20/382 (5,2%)	28/452 (6,2%)	OR 0,99 (0,52-1,87) p=0,99
Rechute à germe résistant**	2/20 (10%)	10/28 (35,7%)	p=0,10

*Rechute clinique et ECBU positif à la même espèce bactérienne que l'uroculture initiale,
* * Souche résistante à l'antibiotique utilisé (élévation de la CMI ≥ 4x CMI initiale).

- 7 jours vs 14 jours: risque rechute 2,5 fois plus élevé avec 7 j (OR ajusté 2,54 ; IC95% 1,40-4,60).
- 7 jours vs 14 jours et B-lactamine IV et/ou FQ ou cotrimoxazole (OR ajusté 0,76 ; IC95% 0,38-1,52).

Rechute à germe résistant:
- Total rechute: 76 (7%)
- Total rechute à germe résistant: 14 (18%)
  - 7j: 2(11%) 10j: 2 (10%) 14j:10 (36%) (p=0,1)

Au total

- Infections urinaires classées en fébriles/non fébriles (cystite)

- En l'absence de fièvre le traitement peut/doit être raccourci à 7 jours maximum.
- Antibiotiques à spectre étroit (comme chez la femme) sans nécessité de diffusion intraprostatique

- En revanche, un traitement de 7 jours pour une infection urinaire fébrile de l'homme ne parait pas raisonnable (ou alors profil patient à mieux déterminer)

- Infection urinaire fébrile: 10 jours peut être suffisant, à discuter selon terrain.

Femme, 26 ans, cystites à répétition

Définition?

- ❑ ≥ 3 épisodes/an
- ❑ ≥ 4 épisodes/an
- ❑ ≥ 2 sur les 6 derniers mois
- ❑ ≥ 1 épisode/mois

Femme, 26 ans, cystites à répétition

Définition?

- ❑ ≥ 3 épisodes/an
- ❑ ≥ 4 épisodes/an
- ❑ ≥ 2 sur les 6 derniers mois
- ❑ ≥ 1 épisode/mois

- ❑ Ce qui compte +++ c'est le retentissement

Femme, 26 ans, cystites à répétition

Interrogatoire

Femme, 26 ans, cystites à répétition

Interrogatoire

- ATCD neuros/uro néphrologiques
- Troubles mictionnels chroniques ou à répétition en dehors des cystites
- Circonstance de survenue des cystites: lien avec rapports sexuels?
- ECBU antérieurs: résultats (authentification IU, germe(s) en cause)
- Facteurs favorisants: hydratation (< 1,5 l/j)

Troubles du transit, spermicide, sous vêtements serrés, en synthétique …

Femme, 26 ans, cystites à répétition

Examens (complémentaires)

Femme, 26 ans, cystites à répétition

Examens (complémentaires)

- Gynécologique (vulvaire, vaginal)
- Urologique *si* anomalies mictionnelles ou ATCD uro/néphro

- Si doute: calendrier/catalogue mictionnel
- Pas d'examens morphologiques si examen normal et pas d'ATCD

Exemple d'un tableau rempli

Mardi 11 octobre 2017

	Heure	Volume d'urine (ml)	Sensation de besoin 0	1	2	3	4	Fuites urinaires (x)	Change-ment de protection (x)	Boissons Volume (dl)	Type
Lever	7h30	400				x			x		
	8h									3	Café
	10h30	150				x					
	12h									2	Eau
	13h30	200			x						
	19h	140					x	x	x		
	22h30									2	Tisane
Coucher	23h										
	2h	x					x	x	x		

Femme, 26 ans, cystites à répétition

Quel traitement préventif?

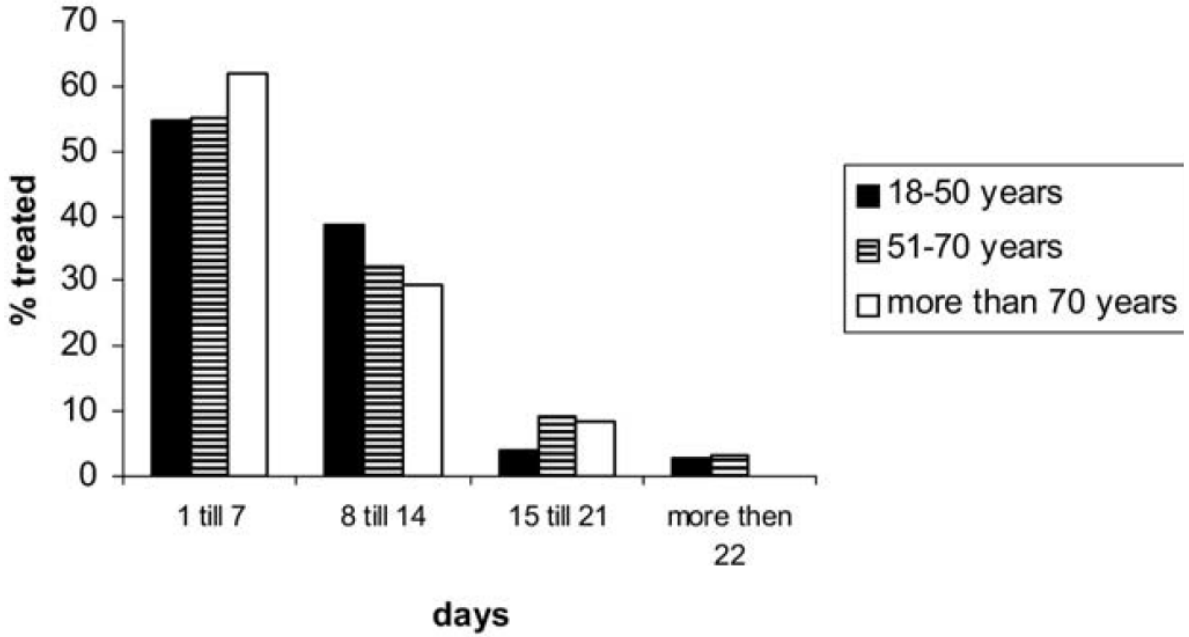
Femme, 26 ans, cystites à répétition

Quel traitement préventif?

- Hydratation>1,5 l/j
- Antibiotiques: cotrimoxazole/fosfomycine/TMP.
    - au moment des rapports sexuels
    - en continu pendant 6 mois (bactrim 400 ou TMP 1/j), fosfomycine 1 sachet à jeun/semaine
    - en autotraitement (sans ECBU)
- Alternatives:
    - uro vaxum/MV 140
    - D mannose
    - canneberge
    - probiotiques vaginaux (lactobacillus)
    - Methenamine hippurate
    - instillations a hyaluronique/chondroitine sulfate

Urinary Tract Infection in Male General Practice Patients: Uropathogens and Antibiotic Susceptibility. J. J. Koeijers, et al. UROLOGY 76 (2), 2010

- Cohorte de ville, 2013-2014.
- Hommes, >18 ans, infection urinaire non fébrile: dysurie aigue, pollakiurie et/ou urgenturie, <38°, pas de signes généraux, pas de matériel.
- 422 hommes, 18-104 ans.
- Traitement antibiotique prescrit dans 60% des cas.



Antibiotic Treatment	Age Category 18-50 y n = 86	51-70 y n = 99	>70 y n = 68	Total N = 253
Amoxicillin	1	3	0	2
Co-amoxicillin	10	12	10	11
TMP-SMX*	26	24	21	24
Trimethoprim	3	1	1	2
Nitrofurantoin	14	15	19	16
Quinolones	31	32	35	33
Other	14	12	13	13
Total %	100	100	100	100

Evolution? Rechutes?

Retrospective evaluation of nitrofurantoin and pivmecillinam for the treatment of lower urinary tract infections in men. Hanna Montelin *et al.* PLOS one 2019

	Nitrofurantoïne (n=69)	Pivmécillinam (n=57)	Triméthoprime (n=45)
Durée ttt (médiane)	7 j	7 j	10 j
Echec	1 (1.4%)	4 (12%)	0
Rechutes (3 mois)	15%	17%	7%
Rechute si ttt ≤7 j	5/45 (11%)	9/35 (26%)	1/20 (5%)
Rechute si ttt >7 j	5/23 (22%)	0/18 (0)	2/25 (8%)
Doses	50 mg/8h (94%)	200 mg/8h (65%) 200 mg/12h (30%)	800 mg/12 h (98%)

Table 5. Univariate analysis for risk factors of new prescription and relapse.

	New prescription			Relapse		
	OR	95% CI	*P*	OR	95% CI	*P*
Antibiotics						
Trimethoprim	ref			ref		
Nitrofurantoin	1.75	0.74–4.15	0.204	2.37	0.62–9.15	0.209
Pivmecillinam	1.37	0.55–3.39	0.502	2.62	0.67–10.34	0.168
Recent UTI therapy	0.90	0.46–1.75	0.753	0.78	0.32–1.91	0.586
Gram-positive bacteria	0.54	0.26–1.12	0.089	0.80	0.31–2.08	0.640
Treatment duration > 7 d	1.10	0.56–2.16	0.780	0.87	0.34–2.21	0.771
Any risk factors	2.12	0.97–4.67	0.052	1.23	0.45–3.34	0.683
Urinary tract catheterization	2.34	1.14–4.80	0.022	1.73	0.67–4.45	0.265
Benign prostate hypertrophy	1.71	0.08–3.62	0.165	1.27	0.46–3.49	0.650
Prostate cancer	1.92	0.82–4.50	0.141	3.01	1.09–8.29	0.042
Diabetes mellitus	1.21	0.48–3.01	0.692	0.91	0.25–3.34	0.888
Neurogenic bladder disorder	1.04	0.35–3.13	0.942	0.40	0.05–3.14	0.322

Pas de différence significative

- échec selon antibiotique
- rechutes selon antibiotique
- rechutes selon ≤ 7 j vs > 7 j de façon globale
- Rechutes plus fréquentes avec pivmécillinam ≤ 7 j vs > 7 j

Effectiveness and safety of nitrofurantoin in outpatient male veterans.

Ingalsbe *et al.* Therapeutic advances in Urology, 2015

- Etude rétrospective, 2004-2013, EU.
- **Guérison clinique**: absence de signes urinaires 14 jours après fin du traitement par furadantine.

→ 485 patients pour analyse efficacité

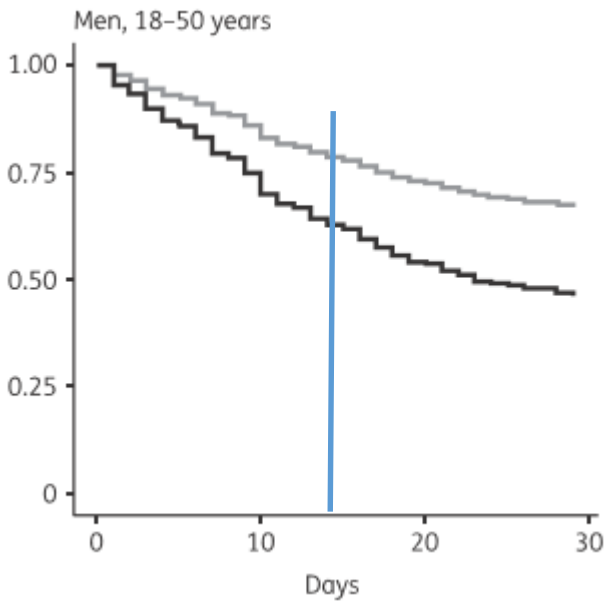
- Dose: 100 mg x2/jour dans 71% des cas
- **Guérison: 77%**
- Meilleure efficacité si clairance>60 ml/min et gram négatifs vs gram positifs
- **Durée traitement: succès clinique 8,6±3,6 versus échec 9,3±6,9 jours (p=0,28)**

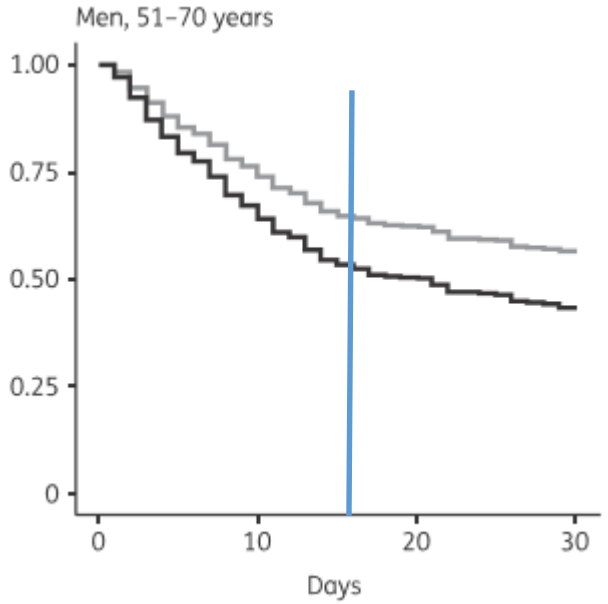
Treatment duration of pivmecillinam in men, non-pregnant and pregnant women for community-acquired urinary tract infections caused by Escherichia coli: a retrospective Danish cohort study Boel *et al.* JAC 2019

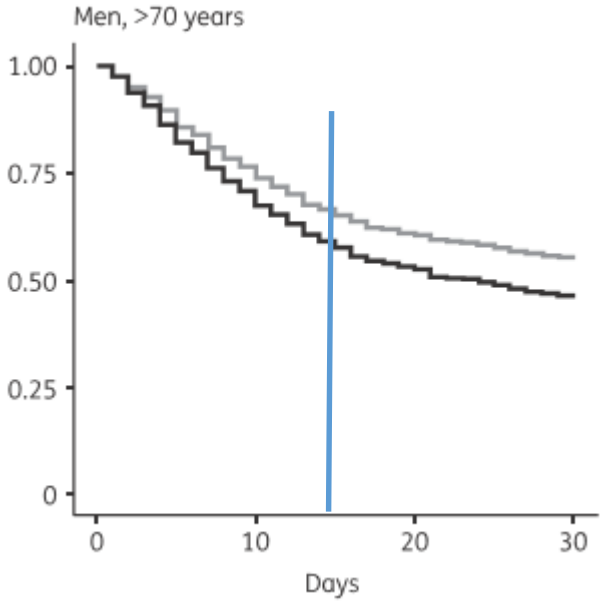
- Cohorte rétrospective, 2010-2016.
- **Inclusion**: femmes et hommes, > 18 ans, traitement empirique par pivmécillinam pour bactériurie significative à *E. coli*. Infection urinaire basse.
- Pivmécillinam: 400mg x3/j

- 21864 inclusions dont 2524 hommes

- Succès clinique 5 jours > 3 jours chez les hommes







- **Pas de différence 5 jours versus 7 jours en termes de succès**

No clinical benefit to treating male urinary tract infection longer than seven days: an outpatient database study.

Germanos *et al.* Open forum infectious diseases, 2019.

- Cohorte rétrospective de ville (urologie, généraliste, médecine interne)
- Base de données, région de Houston
- 2011-2015
- Hommes, Infection urinaire basse et traitement antibiotique (FQ (69,7%), cotrimoxazole (21,2%), nitrofurantoïne (5,3%), triméthoprime, ß-lactamine, aminoside).
- 637 visites, 573 hommes.
- FDR rechute: durée du traitement > 7 jours; OR 2.62, 95% CI 1.04–6.61

(chez hommes sans HBP ni lithiases)

Fosfomycin in the treatment of extended spectrum beta-lactamase-producing *Escherichia coli*-related lower urinary tract infections

Pullukcu et al. International Journal of Antimicrobial Agents(2007)

- Cohorte rétrospective observationnelle
- 52 adultes, **25 hommes**

- SFU (dysurie, pollakiurie, urgenterie)
- Leucocyturie et *E. coli* >10^5, BLSE.
- Pas de fièvre, pas d'hyperleucocytose

- Fosfomycine trométamol: 3 g J1-J3-J5
- ECBU de contrôle à 7 à 9 jours

- Succès clinique et microbiologique: 94.3% (49/52) et 78.5% (41/52)

Pas de détails hommes/femmes

Matthews *et al.* Oral fosfomycin for treatment of urinary tract infection: a retrospective cohort study. *BMC Infect Dis*. 2016

- Cohorte rétrospective observationnelle
- 75 adultes, **18 hommes**

- SFU (dysurie, pollakiurie, urgenterie)
- Leucocyturie et uropathogène>10^5/mL (31/52 (59%) BLSE).
- Pas de fièvre, pas d'hyperleucocytose
- Fosfomycine trométamol 3 g, médiane J1-J3-J5

- ECBU stérile, 21/40 (53%), follow-up 13 jours
- Guérison clinique ou ECBU stérile: 42/61 (69%)
- FDR échec : infection à *K. pneumoniae*
- Infection chez l'homme: pas FDR d'échec

Outcomes of Fosfomycin Use in Ceftriaxone-Resistant Enterobacteriaceae Urinary Tract Infection in the Elderly

International Journal of Antimicrobial Agents 53 (2019) 195–196

Wei Ming Quek[1]

Guérison clinique: disparition symptômes en fin de ttt: 82 pts (71,3%)
Guérison microbio: stérilisation ECBU en fin de ttt: 21 pts (60%)
Récidive à 3 mois: 33 pts (28,7%)

Baseline patient characteristics (N = 115).

Demographic data	n (%)*
Age, median (IQR)	79 (70.0, 86.0)
Female sex	72 (62.6)
Drug allergy	
Beta-lactam	24 (20.9)
Quinolone	1 (0.9)
Co-trimoxazole	5 (4.3)
Creatinine clearance	
Median (IQR)	40.4 (27.6, 56.5)
<30 mL/min	34 (29.6)
30–50 mL/min	41 (35.7)
>50 mL/min	40 (34.8)
Co-morbidities	
Charlson's co-morbidity score, median (IQR)	6.0 (4.0, 8.0)
Cardiovascular disease	43 (37.4)
Cerebrovascular disease	46 (40.0)
Diabetes mellitus	49 (42.6)
Diagnosis	
Cystitis	77 (67)
Complicated cystitis	38 (33)
Catheterisation	32 (27.8)
Urogenital abnormalities	4 (3.5)
Renal calculus	2 (1.7)
Microbiology	
Escherichia coli	71 (61.7)
Klebsiella pneumoniae	44 (38.3)
No. of fosfomycin trometamol doses	
3 g once	88 (76.5)
3 g × 3 doses	22 (19.1)
Others	5 (4.3)
Use of other antibiotics	
Active empirical	30 (26.1)
Active definitive (non-fosfomycin)	37 (32.2)