

Guidelines had a limited influence on the management of urinary tract infections by general practitioners

Aymeric SEVE, Magali GARCIA, Gwenael LE MOAL, Cendrine GODET, France ROBLOT, Guillaume BERAUD, Service de maladies infectieuses - CHU de Poitiers



Objective

Quantitatively, general practitioners are an important antibiotics' prescriber, and urinary tract infections (UTI) are their main source of antibiotics' prescription. As French guidelines for management of UTI were amended in 2008, we evaluated in 2013 the management of urinary tract infections by general practitioners in outpatients in order to identify factors influencing their practice.

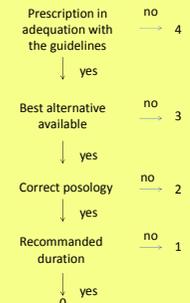


Fig 1: scores classification

Methods

We conducted in June 2013 a prospective survey among GP, aiming to describe their practice and their management of each patient presenting an UTI. A score was attributed to every prescription, assessing the indication, choice, dosing and length of antibiotic treatment, according to an algorithm based on the French guidelines and derived from the Gyssens algorithm (*Gyssens Int J antimicrob Agents 2001*). Factors influencing these scores were analysed with uni- and multi-variate models.

- Fosfomycine
- Furadantine
- Bi-thérapie
- Fluoroquinolones
- Triméthoprime
- Bêta-lactamines
- Pipram

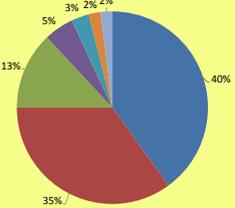


Fig 2: antibiotics distribution

Results

Eighty seven GP described 145 cases, mainly women (131) (90%). The median (min-max) age of patient was 49 (18-84) years old. They reported 118 cystitis, 14 pyelonephritis and 13 prostatitis. Thirty nine patients (27%) benefited from an urinary strip, 88 patients (61%) from an urin alysis and 36 patients (25%) had no urinary exam at all. One hundred and seventeen patients (81% of the cases) received antibiotics without prior documentation while 18 prescriptions (18%) were primarily documented and 10 (7%) secondary documented.

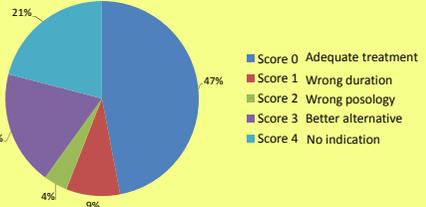


Fig 3: scores distribution

Results

The prescription were in accordance with the guidelines in 47% of the cases, which was significantly more frequent when both the GP was young (<50 years old) (p=0.017) and the patient was young (p=0.02). The most frequently appropriately used antibiotic was fosfomycine trometamol (56 cases) (97%) while the least are the betalactamines (1 case)(5%). The most frequently appropriately treated infection was the simple cystitis (54 cases)(54%) and the least are the prostatitis (13 cases) (23%). Conversely guidelines which are the less followed concern prostatitis and complex infections.

Table 4: Characteristic results according to the worst and best scores.

	Part of patients with score 4 (No indication) (%) (31 patients)	p	Part of patients with score 0 (adequate treatment) (%) (68 patients)	p
Sex (M/F)	10 (71%) / 21 (16%)	< 0,01	3 (21%) / 65 (50%)	0,05
Patients average age (standard deviation)	50,8 years (19,7)	0,57	43,4 years (18,5)	0,02
Infection (lower tract/higher tract)	25 (19%) / 6 (43%)	0,078	65 (50%) / 3 (21%)	0,05
Type (simple/complex/recurrent)	17 (16%) / 11 (58%) / 3 (17%)	< 0,01	56 (52%) / 5 (26%) / 7 (39%)	0,095
Urinary catheter (Y/N)	1 (25%) / 30 (21%)	1	3 (75%) / 65 (46%)	0,34
Nursing home (Y/N)	0 (0%) / 31 (22%)	1	1 (33%) / 67 (47%)	1
Pregnancy (Y/N)	1 (33%) / 30 (21%)	0,52	1 (33%) / 67 (47%)	1
Antibiotic contraindication (Y/N)	2 (67%) / 29 (20%)	0,11	1 (33%) / 68 (48%)	0,25
Doctor age (<40/ 40-50/ >50 years old)	5 (17%) / 1 (8%) / 22 (26%)	0,39	15 (50%) / 10 (77%) / 31 (36%)	0,017
Number of daily patients (<15/15-35/>35)	0 (0%) / 22 (28%) / 4 (16%)	0,38	0 (0%) / 34 (43%) / 12 (48%)	0,57
Resident supervisor(Y/N)	5 (19%) / 21 (26%)	0,6	15 (58%) / 31 (39%)	0,11
Type of activity (rural/half-rural/urban)	8 (27%) / 16 (36%) / 4 (12%)	0,06	12 (40%) / 16 (36%) / 18 (55%)	0,24
Group office (Y/N)	14 (24%) / 15 (29%)	0,52	28 (47%) / 19 (37%)	0,33

Table 1: Management's characteristics when fluoroquinolones were used

Characteristics (total used for calculation)	Results (%)	p
Urinary strip (Y/N) (39/106)	13 (33%) / 43 (41%)	0,45
Urin analysis (Y/N) (88/57)	39 (44%) / 17 (30%)	0,08
Infection (low/high) (131/14)	47 (36%) / 9 (64%)	0,047
Type (simple/complex/recurrent) (108/18/19)	36 (33%) / 10 (53%) / 10 (55%)	0,08
Doctor age (<40/ 40-50/ >50 (years old) (30/13/85)	9 (30%) / 5 (38%) / 36 (42%)	0,54
Number of patients (<15/15-35/>35) (2/79/25)	0 (0%) / 31 (39%) / 10 (40%)	0,75
Internship master (Y/N) (26/80)	9 (35%) / 32 (40%)	0,65
Activity (rural/half-rural/urban) (30/45/33)	9 (30%) / 17 (38%) / 15 (45%)	0,47
Group office (Y/N) (59/51)	23 (39%) / 19 (37%)	1

Table 2: Score distribution according to antibiotics

Antibiotic / score	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	Total
Fluoroquinolones	9 (16)	9 (16)	5 (9)	24 (43)	9 (16)	56
Bêta-Lactamines	1 (5)	2 (10)	0	0	16 (85)	19
Others	58 (83)	2 (3)	1 (1)	3 (4)	6 (9)	70
Total	68 (47)	13 (9)	6 (4)	27 (19)	31 (21)	145

Table 3: Treatment average duration

Infection	Duration (days)	Recommended duration (days)
Simple cystitis	5	1-3
Complex cystitis	8	5
Recurrent cystitis	6	1-3
Simple pyelonephritis	10	7
Complex pyelonephritis	10	10-14
Recurrent pyelonephritis	12	10-14
prostatitis	15	21

Conclusion

General practitioners inconstantly (47%) followed the guidelines for UTI. The results are very different according to the antibiotic and the infection, and may represent reminiscence for older guidelines or difficulty in assessing correctly the diagnosis. From a more general point of view, evaluating management of UTI by general practitioners could be a simple an fine way for evaluating antimicrobial stewardship by general practitioners