

Table I: data extraction on study characteristics

Study	study population	outcome			
		urine sampling for culture	definition of bacteriuria	statistical model	odds ratios of the candidate variables adjusted for
Platt et al. (A)  (cohort study)	<p><u>Inclusion criteria</u></p> <p>indwelling catheter &gt;24h</p> <p>baseline urine culture &lt; 10<sup>5</sup> cfu/ml</p> <p>at least 48h without catheter before enrolment</p> <p>medical and surgical inpatients</p> <p><u>Exclusion criteria</u></p> <p>urologic surgery during current hospital stay before catheterisation</p>	daily from catheter sampling port	≥ 10 <sup>5</sup> cfu/ml	logistic regression	duration of catheterisation, sex, systemic antibiotics, urinometer-drainage, colonisation of drainage bag, diabetes, indication for catheterisation, serum creatinine, preconnected and presealed junction

Table I (continued)

study	study population	outcome			
		urine sampling for culture	definition of bacteriuria	statistical model	odds ratios of the candidate variables adjusted for
Shapiro et al. (B)  (cohort study)	<u>inclusion criteria</u> indwelling catheter >24h baseline urine culture < 10 <sup>3</sup> cfu/ml  neurology, neurosurgery, urology, cardiac surgery, orthopaedics, gynaecology-obstetrics  <u>exclusion from the analysis</u> Gynaecology-obstetrics	daily from catheter  sampling port	antibiotics received within one day after obtaining the culture: 10 <sup>2</sup> cfu/ml  no antibiotics received: ≥ 10 <sup>5</sup> cfu/ml in two consecutive cultures  onset of bacteriuria: ≥ 10 <sup>3</sup> cfu/ml	logistic regression	hospital service, duration of hospitalisation before catheterisation, duration of catheterisation until bacteriuria (period at risk), ethnic origin, location of catheter insertion, systemic antibiotics, catheter care

Table II: data extraction on candidate risk factors

variables	Platt et al. (A)			Shapiro et al. (B)		
	136 cases of bacteriuria / 1474 catheterisation courses			36 cases of bacteriuria / 112 patients <sup>ll</sup>		
	courses N	N (%) infections	adjusted OR (95% CI)*	patients N	N (%) infections	adjusted OR (95% CI)
sex	a) female 721 b) male 753	a) 95 (13) b) 41 ( 5 )	2.5 (1.6 – 4.0)	a) female 32 b) male 80	a) 13 (41) b) 23 (29)	NS <sup>†</sup>
age	a) > 70 years 299 b) 51-70 years 794 c) 31-50 years 292 d) <30 years 89	a) 51 (17) b) 55 ( 7 ) c) 20 ( 7 ) d) 10 (11)	1.3 (0.4 – 4.0)	a) ≥ 74 years 19 b) < 74 years 92	a) 10 (53) b) 26 (28)	NS
race	a) nonwhite 50 b) white 1424	a) 9 (18) b)127 ( 9 )	1.6 (0.7 – 4.0)	a) Arabs 15 b) Jews 95	a) 8 (53) b) 27 (28)	6.5 (2.4 – 17.1)
diabetes	a) yes 304 b) no 1170	a) 54 (18) b) 82 ( 7 )	2.3 (1.5 – 3.6)			
categories of underlying disease	a) ultimately fatal 232 b) nonfatal 1242	a) 28 (12) b)108 ( 9 )	1.0 (0.6 – 1.7)	a) acute paraplegia NR <sup>§</sup> b) multiple trauma NR c) genitourinary disease NR d) diabetes mellitus NR e) malignancy NR f) cardiovascular disease NR g) infections other than bacteriuria NR		NS
prior UTI during current hospitalisation	a) yes 168 b) no 1306	a) 28 (17) b)108 ( 8 )	1.5 (0.9 – 2.5)			
renal function	creatinine a) >2 mg/dl 72 b) 1-2 mg/dl 815 c) <1 mg/dl 587	a) 16 (22) b) 67 ( 8 ) c) 53 ( 9 )	2.1 (1.0 - 4.3)	blood urea nitrogen a) ≤ 25 mg/100ml 15 b) > 25 mg/100ml 89	a) 8 (53) b) 26 (29)	NS
mobility				a) bedridden 48 b) mobile 63	a) 15 (31) b) 20 (32)	NS

Table II (continued)

variables	Platt et al. (A) 136 cases of bacteriuria / 1474 catheterisation courses			Shapiro et al. (B) 36 cases of bacteriuria / 112 patients <sup>  </sup>		
	courses N	N (%) infections	adjusted OR (95% CI)*	patients N	N (%) infections	adjusted OR (95% CI)
hospital service	a) medicine 153 b) general surgery 1291 c) other 30	a) 38 (25) b) 90 ( 7) c) 8 (26)	1.1 (0.3 – 3.5)	a) orthopaedics 7 b) neurology 12 c) urology 20 d) neurosurgery 49 e) cardiac surgery 22	a) 6 (86) b) 7 (58) c) 6 (30) d) 15 (31) e) 2 ( 9)	51.1 (7.6 – 341.0)  4.1 (1.1 – 15.7)
intensive care unit				a) yes 17 b) no 95	a) 7 (41) b) 29 (31)	NS
operation				a) extrapelvic 39 b) urinary tract 44 c) pelvic bones 9 d) pelvic 20	a) 9 (23) b) 14 (32) c) 4 (44) d) 9 (45)	NS
steroids				a) yes 25 b) no 87	a) 8 (32) b) 28 (32)	NS
antibiotics used in week before catheterisation	a) no 222 b) yes 1252	a) 35 (16) b) 101 ( 8)	1.1 (0.5 – 2.2)			
systemic antibiotic during catheterisation	a) no 217 b) yes 1257	a) 39 (18) b) 97 ( 8)	S <sup>†</sup>	during 'period at risk' a) no 57 b) yes 55	a) 22 (39) b) 14 (26)	3.9 (1.9 – 8.3)
duration of hospitalisation before catheterisation				a) ≥ 7 days 24 b) < 7 days 88	a) 9 (38) b) 27 (31)	8.6 (3.5 – 21.1)
prior indwelling catheterisation	a) yes 68 b) no 1402 c) unknown 4	a) 17 (25) b) 118 ( 8)	2.3 (1.2 – 4.6)			
location of catheter insertion				in operating theatre a) no 37 b) yes 74	a) 20 (54) b) 16 (22)	5.3 (1.7 – 16.7)
professional status of person inserting catheter	a) RN 580 b) MD 521 c) other 373	a) 77 (13) b) 21 ( 4) c) 38 (10)	1.0 (0.3 – 3.7)			

Table II (continued)

variables	Platt et al. (A) 136 cases of bacteriuria / 1474 catheterisation courses			Shapiro et al. (B) 36 cases of bacteriuria / 112 patients <sup>ll</sup>		
	courses N	N (%) infections	adjusted OR (95% CI)*	patients N	N (%) infections	adjusted OR (95% CI)
indication	a) drainage during surgery or output measurement 1311 b) others or unknown 163	a) 98 ( 8) b) 38 (23)	2.0 (1.2 - 3.6)	a) incontinence, outflow obstruction 28 b) output measurement or postoperative drainage 84	a) 18 (64) b) 18 (21)	NS
duration of catheterisation	a) 1 day 569 b) 2,3 days 531 c) 4,5 days 214 d) ≥ 6 days 160	a) 14 ( 3) b) 53 (10) c) 26 (12) d) 43 (27)	antibiotic 22.4 (10.4 - 48.3)  no antibiotic 2.3 ( 0.4 – 12.1)	period at risk a) ≥ 7 days 45 b) < 7 days 67	a) 33 (73) b) 3 ( 5)	6.8 (2.8 – 16.8)
urinometer-drainage	a) no 244 b) yes 1230	a) 52 (21) b) 84 ( 7)	2.0 ( 1.2 – 3.8)			
preconnected, presealed junction	a) no 752 b) yes 722	a) 77 (10) b) 59 ( 8)	antibiotic 3.0 (1.2 – 7.2)  no antibiotic 1.1 (0.4 – 3.3)			
disinfectant agent used for catheter insertion and meatal care	a) Benzalkonium-chloride 290 b) Povidone iodine 743 c) soap solution 326 d) unknown 115	a) 40 (14) b) 62 ( 8) c) 22 ( 7) d) 12 (10)	1.4 (0.5 – 4.1)			
colonisation drainage bag	a) yes 60 b) no 1414	a) 26 (43) b) 110 ( 8)	3.8 (2.1 – 7.4)			
bag-outlet- tube error	a) yes 60 b) no 1414	a) 13 (22) b) 123 ( 9)	0.8 (0.4 – 1.8)			

Table II (continued)

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	136 cases of bacteriuria / 1474 catheterisation courses			36 cases of bacteriuria / 112 patients <sup>  </sup>		
	courses N	N (%) infections	adjusted OR (95% CI)*	patients N	N (%) infections	adjusted OR (95% CI)
disconnection of collection junction	a) yes 381 b) no 1093	a) 61 (16) b) 75 ( 7)	1.1 (0.7 – 1.8)	a) catheter care unsatisfactory 61	a) 27 (44) b) 7 (17)	3.1 (1.7 – 5.6)
improper positioning of drainage bag				b) catheter care satisfactory 41		
improper fixation of drainage system						
catheter change	a) yes 141 b) no 1333	a) 21 (15) b) 115 ( 9)	0.8 (0.4 – 1.5)			
drainage bag change	a) yes 220 b) no 1254	a) 37 (17) b) 99 ( 8)	1.0 (0.6 – 1.7)			

\* odds ratio (95% confidence interval) † not significant ‡ significant § not reported

|| for some variables totals are less than 36 infections or 112 patients because data are missing for this variable