

Urinary tract bacterial contamination and post-PCNL hemorrhagic risk

M.I.Y. Hussein, P. Bernardini, A. Del Nero, M. Delor, V. Uselli, E. Montanari

Clinica Urologica III Università degli Studi di Milano; A.O./Polo Universitario San Paolo, Milan, Italy

Purpose: To review the influence of urinary tract bacterial contamination on post-PCNL haemorrhagic complications, blood transfusion and arterial embolization.

Material and Methods: Between 2007 and August 2012, 133 consecutive PCNL patients were enrolled from a single center and all patients had intra-operative bladder urine sample, pelvic urine sample, stone cultural exam and all received preoperative antibiotic prophylaxis.

PCNL bladder urine culture, intraoperative pelvic urine culture and stone cultural exam, peri-operative variation of hemoglobin and hematocrit, blood transfusion and arterial embolization were recorded.

Relationship between various patient and operative factors, occurrence post-operative blood transfusion and arterial embolization were assessed using logistic regression analyses.

Table 1

PARAMETER	(SD/%)
Number of patients	133
Age	54,4 (15,4) years
Stone Burden	629,6 mm ² (773 mm ²)
Sex	88 (66,2%) Male 45 (33,8%) Female

Results: Sixtyfour patients (48,1%) had one or more positive culture sample exam (Positive Cultural Exams Group - PCEG). Sixty-nine patients (51,9%) had negative results in all cultural exams (Negative Cultural Exams Group - NCEG). There weren't statistically significant differences regarding perioperative changes in hemoglobin and hematocrit between the groups. 7 NCEG patients (10,14%) received post-PCNL blood transfusion, in contrast with 13 PCEG patients (20,31%) that had post-PCNL blood transfusion. The NCEG received 14 blood units, in contrast to 53 blood units for the PCEG patients. One patient (1,14%) of NCEG undergone post-PCNL selective renal arterial embolization, in contrast to six patients (9,37%) of PCEG.

Conclusions: The presence of a cultural positivity on pre-PCNL bladder urine, pelvic urine or stone is associated with a statistical higher risk of haemorrhagic complication and renal arterial embolization than patient with negative cultural exams.

References:

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Table 2.

PARAMETER	Negative Cultural Exams Group (NCEG) number (SD/%)	Positive Cultural Exams Group (PCEG) number (SD/%)	90% CI
Number of patients	69 (51,9%)	64 (48,1%)	
Age	55,4 (17,4) yrs	53,3 (12,9) yrs	0,214
Stone Burden	598,9 (917,0) mm ²	662,1 (598,8) mm ²	0,638
Sex	47 (68,1%) Male 22 (31,9%) Female	41 (64,1%) Male 23 (35,9%) Female	0,312
Operative Time	132,9 (48,3) minutes	130,8 (55,3) minutes	0,817
Stone Free	59 (85,5%)	48 (75,0%)	0,294

PARAMETER	Negative Cultural Exams Group (NCEG) number (SD/%)	Positive Cultural Exams Group (PCEG) number (SD/%)	90% CI
Perioperative Hemoglobin Reduction	2,1 (1,44) g/dL	1,9 (1,8) g/dL	0,505
Perioperative Hematocrit Reduction	4,8 (7,35) %	5,4 (4,1) %	0,546
Number of Transfused Blood Patients	7 (10,1%) patients	13 (20,3%) patients	0,05
Number of Transfused Blood Units	14 (1) Blood Units	53 (3) Blood Units	0,03
Selective renal arterial embolization	1 (1,4%) patients	6 (9,4%) patients	0,02

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