

FEBRILE URINARY TRACT INFECTION ONSET DURING INTERMITTENT CATHETERIZATION: WHAT IS THE RISK FACTOR?

Hypothesis / aims of study

Intermittent catheterization is an safe and effective treatment option for patients of chronic urinary retention. Meanwhile, one of the major complications with intermittent catheterization is urinary tract infection (UTI), which occasionally induces febrile UTI with severe general condition [1]. However, there were few studies indicating patient factors which affected febrile UTI onset during catheterization. We aim to assess the time to febrile UTI onset and patient conditions associated with febrile UTI onset.

Study design, materials and methods

This retrospective study involved patients who performed intermittent catheterization for more than 3 months due to chronic urinary retention in our hospital from April 2007 to April 2014. Chronic urinary retention was defined as the status of a bladder that did not empty completely and have post-void residual urine of more than 300 ml. Exclusion criteria were presence of bladder or prostate cancer, urethral stricture or bladder stone. Included patients were analyzed for presence of febrile UTI defined as the condition of pyuria (more than 10 WBC/HPF) with concomitant fever (more than 38.0°C). Sex, age (more than or equal to 75), history, types of catheters (disposable or reusable), frequency of catheterization (more than or equal to 4 times/day) and pyuria were assessed as associated factors.

Results

The study included 66 patients (46 males and 20 females). Mean duration of catheterization was 35.8 (range 9 to 90) months. 8 (12.1%) patients had febrile UTI. The time from the initial catheterization to the onset of febrile UTI was 5.1 (range 2-18) months and 7 (87.5%) patients had febrile UTI within 12 months since the initial catheterization (Figure). Predictive factors were age (OR 5.286, $p=0.0186$) or persistent pyuria for 3 months (OR 19.47, $p=0.0027$) (Table).

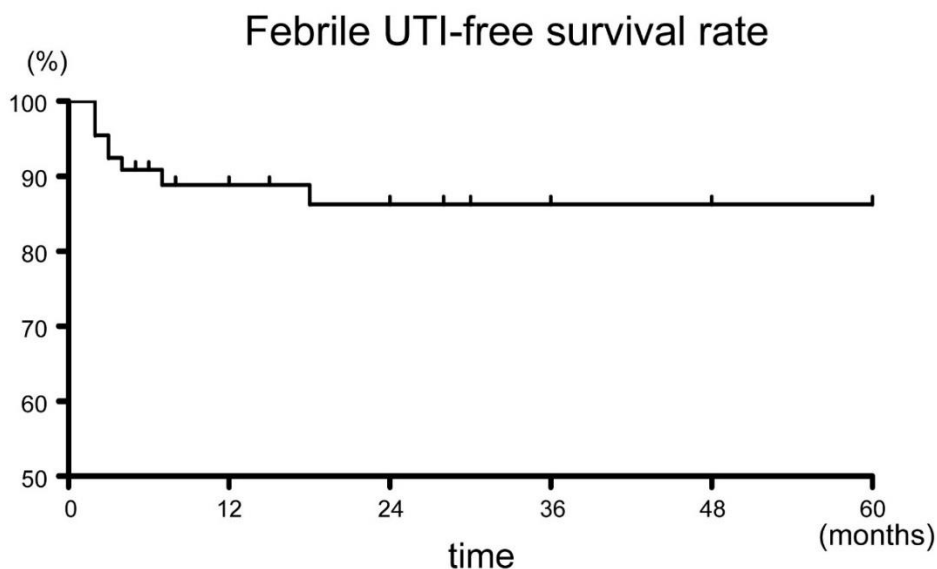
Interpretation of results

The febrile UTI onset ratio within 12 months since the initial catheterization is totally higher than that 12 months after the initial catheterization, indicating that the susceptible period to febrile UTI is 12 months. Predictive factors for febrile UTI were age and persistent UTI for 3 months. These results suggested that impairment in immune system or cognitive function induced febrile UTI in the presence of chronic urinary bacterial infection during catheterization.

Concluding message

Caution should be required for febrile UTI onset within 12 months since the initial catheterization. Age or persistent pyuria was a risk factor for febrile UTI during intermittent catheterization and patients with those factors might be considered for prophylaxis.

Figure



Table

Factors affecting febrile UTI onset during catheterization

	febrile UTI		Univariate analysis (Chi-square test)		Multivariate analysis (Logistic regression)
	present	absent	p value	OR	p value
No. pts	58	8			
Sex			0.2932		
	male	39			
	female	19			
Age			0.0186*	5.286	0.0308*
	≥ 75	21			
	< 75	37			
History					
Diabetes			0.6875		
	present	11			
	absent	47			
Neurological disease			0.4509		
	present	21			
	absent	37			
Types of catheters			0.2306		
	diposable	49			
	reusable	9			
Frequency of catheterization (times/day)			0.5125		
	≥ 4	22			
	< 4	36			
Pyuria					
Single time			0.2306		
	present	49			
	absent	9			
Persitent for 3 months			0.0027*	19.47	0.0012*
	present	27			
	absent	31			

References

- Wyndaele JJ et al. Clean intermittent catheterization and urinary tract infection: review and guide for future research. BJU Int. 110:E910-7, 2012.

Disclosures

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