

URINARY STEM CELL FACTOR IN WOMEN WITH OVERACTIVE BLADDER SYNDROME

Hypothesis / aims of study

Recent reports have demonstrated that c-kit acts as not only a marker of interstitial cells of Cajal, but also plays a significant role in the control of bladder spontaneous activity and could be an interesting target for the clinical treatment of overactive bladder (OAB)(1). On the other hand, binding of a c-kit ligand, stem cell factor (SCF), to c-kit is associated with various biologic phases, such as hematopoiesis, reproduction, regeneration and cell proliferation(2) however, the distribution and role of SCF in the urinary bladder remain unknown. We speculated that not only c-kit but also c-kit ligand, stem cell factor (SCF), could play an important role in the control of bladder function. The objective of this study was to investigate whether SCF affects the biological behavior of OAB.

Study design, materials and methods

Differentiation between OAB and control was based on symptoms and a questionnaire of Overactive Bladder Symptom Score (OABSS)(3). Urinary SCF levels were measured in patients with OAB and in control subjects by enzyme-linked immunosorbent assay (ELISA). The urinary SCF levels were compared among controls and OAB groups, and also between OAB patients ≤ 75 years and < 75 years.

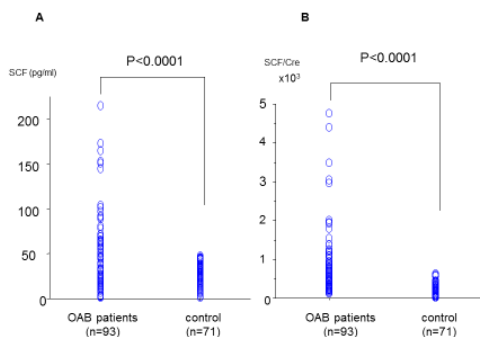
Results

A total of 93 women with OAB and 71 controls were enrolled. The mean age was 74.1 ± 13.0 years for the OAB groups and 67.1 ± 15.6 years for the control group. The average urinary SCF/creatinine levels in OAB patients was 1.589 ± 2.837 , and in the control group was 0.558 ± 0.773 ($p < 0.001$). Analysis of urinary SCF/Cr levels among OAB group and controls by age showed no significant differences.

Table 1 Baseline characteristics in control subjects and OAB patients

	OAB (n=93)	Control (n=71)	
Age	74.1 +/- 13.0	67.1 +/- 15.6	P<0.05
OABSS			
frequency	0.9 +/- 0.5	0.5 +/- 0.5	p<0.05
nighttime frequency	1.9 +/- 1.1	0.7 +/- 0.7	p<0.001
urgency	3.0 +/- 1.4	0.0 +/- 0.0	p<0.0001
urgency incontinence	2.0 +/- 1.5	0.2 +/- 0.2	p<0.0001
total	7.8 +/- 4.2	1.3 +/- 1.3	p<0.0001

Figure 1



Interpretation of results

Urinary SCF levels were significantly higher in women with OAB. The urinary SCF level was not associated with ageing in OAB patients and controls.

Concluding message

SCF is a possible mediator inducing bladder overactivity in women.

References

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2. Nakagawa S and Kitoh T. Measurement of KIT ligand/stem cell factor: clinical and biochemical significance. *Curr Opin Hematol.* 2000;7:133.
3. Homma Y, Yoshida M, Seki N, et al: Symptom assessment tool for overactive bladder syndrome--overactive bladder symptom score. *Urology.* 2006;68:318

Disclosures

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