

## RELATIVE PROPORTION OF TISSUE COMPONENTS IN PROSTATE: IS IT RELATED TO THE DEVELOPMENT OF SYMPTOMATIC BPH IN KOREAN MEN?

### Aims of Study

Korean men generally have smaller prostate compared with the Western, however, the prevalence of the lower urinary tract symptoms (LUTS) is similar [1]. To investigate the high prevalence of LUTS in Korean men with small prostate, we studied the relative proportion of the histological components of prostatic adenoma in symptomatic benign prostatic hyperplasia (BPH) in Korean.

### Methods

Prostatic adenomas were obtained from men with symptomatic BPH underwent open prostatectomy or transurethral resection of the prostate. The patients were divided into three groups according to the prostatic volume measured by transrectal ultrasound (group 1: 20-40ml, 21 men, group 2: 40-80ml, 22 men, group 3: over 80ml, 23 men). The age distribution and the severity of symptoms were comparable between three groups ( $p>0.05$ ). The proportion of the stroma in prostatic adenoma and proportions of the smooth muscle, collagen type I, II, III, V, fibronectin and laminin in stromal tissue were measured by automatic image analyser quantitatively.

### Results

The proportion of the stroma in prostatic adenomas from the group 1 and 2 were significantly higher than that of group 3 ( $p<0.05$ ). The proportion of the smooth muscle, collagen type I, III, V, fibronectin and laminin were not significantly different between three groups ( $p>0.05$ ). The proportion of collagen type II significantly decreased with increasing prostate size, however, total collagen proportion did not show any difference between three groups ( $p>0.05$ ).

The relative smooth muscle proportion in prostatic adenoma (proportion of stroma in prostatic adenoma X proportion of smooth muscle in stromal tissue) from the group 1 and 2 were significantly higher than that of group 3 ( $p<0.05$ ).

Table. The histological components of the prostatic adenoma

	Group 1	Group 2	Group 3	P value
Stroma in prostatic adenoma	79.0±8.9	77.7±9.9	63.2±6.4	0.008
Smooth muscle in stroma	38.4±4.3	37.5±5.2	36.1±2.8	0.45
Collagen I	1.82±1.07	2.63±2.18	2.68±3.17	0.32
Collagen II	7.33±3.30	6.61±4.61	4.03±1.81	0.009
Collagen III	3.28±2.52	5.10±4.48	3.58±2.63	0.142
Collagen V	5.54±3.22	6.94±3.10	6.43±4.81	0.349
Collagen, Total	17.70±5.57	21.64±8.41	16.76±7.89	0.06
Fibronectin	4.90±4.66	4.73±4.15	6.52±4.80	0.48
Laminin	10.84±6.33	9.72±6.94	7.28±5.17	0.25
Relative smooth muscle proportion in prostatic adenoma	30.3±5.3	29.1±5.3	22.8±3.9	0.001

\* expressed in %

### Conclusions

These results suggest that the dynamic component of bladder outlet obstruction, which is mediated by smooth muscle tone, may play more important role in development of LUTS in Korean men with relatively small prostate.

### References

1. Eur Urol 1998; 33: 17