

THE EFFECT OF DIABETES DURATION ON VOIDING FUNCTION IN PEOPLE MORE THAN 45 YEAR OLD

Hypothesis / aims of study

To investigate the effect of diabetes (DM) (type II) duration on bladder storage function in middle-aged and elderly patients

Study design, materials and methods

From June 2010 to February 2011, 9227 local residents aged more than 45 years old were investigated by filling in Overactive Bladder Symptom Score (OABSS) and Patient Perception of Bladder Condition (PPBC) on the spot. They were located in five randomly selected administrative regions of Zhengzhou City, Henan Province (residence time was more than five years). All investigated residents were divided into diabetes group (DG) and non-diabetes group (NDG). According to DM duration the first group was divided into 3 sub-groups: less than 5 years (group I), 5 to 10 years (group II) and more than 10 years of diabetes (group III). The difference OABSS and PPBC were compared between the different groups. The $p < 0.05$ indicates a significant difference.

Results

A total of 8813 (95.5%) (57.9±9.7 Y) were qualified to enter the final statistical analysis. 6505 subjects were included in the NDG and 2308 in the DG. Subjects in the DG had an OABSS significantly higher than those in the NDG (Table 1). OABSS increased gradually with the increase of the disease duration. The OABSS in the sub-groups I, II, III was 1.62 ± 1.43, 1.73 ± 1.59 and 2.10 ± 1.76, respectively. Moreover, OABSS score in the sub- group III was significantly higher than that in sub-groups I and II ($P < 0.05$) (Table 2).

Table 1. Comparison of OABSS and PPBC score between DM and non-DM groups

Group	Number	OABSS score ($\bar{X} \pm s$)	PPBC score ($\bar{X} \pm s$)	t value	P value
total	8813	1.50±1.39	1.15±0.48		
diabetes group	2308	1.72±1.53	1.20±0.56	8.63 ^a	0.01 ^a
non-diabetes group	6505	1.43±1.33	1.14±0.45	5.55 ^b	0.01 ^b

^a t value and P value of OABSS score; ^b t value and P value of PPBC score.

Table 2. Comparison of OABSS and PPBC scores between different DM groups

Group	Number	OABSS score ($\bar{X} \pm s$)	PPBC score ($\bar{X} \pm s$)	F value	P value
Control group	6505	1.43±1.33	1.14±0.45	☆37.15	☆0.01 ^{a,b,c,e,f}
I	1578	1.62±1.43	1.19±0.52	◇12.43	◇0.01 ^{a,b,c,e}
II	346	1.73±1.59	1.22±0.57		
III	384	2.10±1.76	1.25±0.68		

☆ F value and P value of OABSS score; ◇ F value and P value of PPBC score. ^a the compared P of the non-diabetes group and subgroup I; ^b the compared P of the non-diabetes group and subgroup II; ^c the compared P of the non-diabetes group and subgroup III; ^d the compared P of subgroup I and subgroup II; ^e the compared P of subgroup I and subgroup III; ^f the compared P of subgroup II and subgroup III. Control group is the non-diabetes group, the subgroup I is the less than 5 years of group, the subgroup II is the 5 years or more than 10 years of group, the subgroup III is the more than 10 years group.

Interpretation of results

With the development of diabetes mellitus, OABSS increases gradually. The score in the group III was the highest of all groups. This support the hypothesis that with the increase of DM duration the progression of nerve and bladder injury becomes significant, and consequently, the bladder dysfunction occurred. This is supported by our finding that patients with more than 5 years of DM history have higher OABSS and PPBC than the group with less than 5 years DM history.

Concluding message

To my knowledge, this is first study that related to DM (type II) duration and severity of voiding dysfunction in China. The longer the DM duration is, more severe is the voiding dysfunction. Therefore, it should be paid more attention for DM patients who had more than 5 years duration of disease. OABSS and PPBC are good screening tools for evaluation of voiding dysfunction in this population.

Disclosures

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