

RISK FACTORS FOR NEW ONSET OF OVERACTIVE BLADDER IN OLDER SUBJECTS: RESULTS OF THE FUJIWARA KYO STUDY

Hypothesis / aims of study

Case-control studies revealed differences in the backgrounds of subjects with or without OAB but they could not reveal the true risk factors influencing the new onset of OAB because they were not longitudinal surveys. Therefore we conducted study to seek out risk factors for new onset of OAB using the data of the Fujiwara-kyo study which is a community based longitudinal study.

Study design, materials and methods

This study was part of the Fujiwara kyo study, which is a longitudinal community-based study conducted in Nara prefecture in Japan since 2007. This study enrolled 4427 volunteer men and women ≥ 65 years of age that were living in their own homes and were able to walk independently. Baseline data was obtained from all subjects in 2007-2008. It included a physical examination, comorbidities, blood tests and self-administered questionnaire including the International Prostate Symptom Score (IPSS), Overactive symptoms score (OABSS), International Physical Activity Questionnaire (IPAQ) and Geriatric Depression Scale (GDS). A year later the self-administered questionnaire including OABSS was sent to all subjects who participated in this study. The prevalence of OAB at baseline and one year later were evaluated by the OAB symptom score (OABSS). The incidence and remission rate of OAB were calculated. We identified the risk factors for OAB by evaluating the difference in characteristics (including Gender, age, BMI, life style, comorbidities, depressive status, metabolic syndrome and the sum of voiding symptoms) between subjects with and without new onset OAB. In addition, independent risk factors were determined by a multivariate analysis.

Results

3685 of 4427 completely replied to the self-administrated questionnaire of the baseline data and one year later. The incidence and remission rate of OAB was 11.9% and 29.8% respectively. The ratio of male to female, the sum of voiding symptoms, chance of alcohol consumption and smoking, hypertension and depressive status in subjects with new onset OAB, were significantly higher than those in subjects without new onset OAB. (Table.1)

A multivariate analysis, Gender (odds: 2.0, $p < 0.0001$), the sum of voiding symptoms (1.1, $p < 0.0001$) and depressive status (1.8, $p < 0.0001$) were independent factors for new onset OAB in older subjects. (Table.2)

Interpretation of results

This study demonstrated that male sex (in comparison to females), the sum of voiding symptoms and depression were independent factors for new onset OAB.

Concluding message

Treatment for older patients with voiding symptoms or depression might control the new onset of OAB.

Table.1 Comparison of characteristics at the baseline between subjects with and without a new onset of OAB

| | OAB status (2008-2009) | | p |
|-----------------------|-------------------------------|------------------------------|---------|
| | negative-negative (n=2648) | negative-positive (n=358) | |
| Sex | | | |
| Men/women | 1192/1456 | 218/140 | <0.0001 |
| Voiding symptoms | 1.4±2.6 | 2.5±3.4 | <0.001 |
| Age | | | |
| 65-69 | 957 | 138 | 0.405 |
| 70-79 | 1172 | 145 | |
| 80- | 519 | 75 | |
| BMI | | | |
| <25 | 2074 | 269 | 0.2 |
| 25-29 | 525 | 85 | |
| 30- | 33 | 3 | |
| Physical activity | | | |
| <100 | 955 | 130 | 0.102 |
| 100-249 | 882 | 103 | |
| 250- | 744 | 118 | |
| Alcohol drinking | | | |
| Never | 1223 | 138 | 0.026 |
| Ex-drinker | 444 | 56 | |
| 1-2/week | 104 | 16 | |
| 3-4/week | 176 | 30 | |
| every day | 697 | 118 | |
| Smoking status | | | |
| Never | 1616 | 186 | 0.004 |
| Previous | 793 | 134 | |
| Current | 231 | 37 | |
| History/comorbidities | | | |
| yes | | | |
| Cancer | 235 | 39 | 0.218 |
| Stroke | 141 | 23 | 0.396 |
| Myocardiac inferction | 58 | 11 | 0.299 |
| Type 2 diabetes | 270 | 36 | 0.92 |
| Hypertension | 987 | 155 | 0.032 |
| Depression | 275 | 63 | <0.0001 |
| yes | | | |
| Metabolic syndrome | | | |
| yes | 819 | 105 | 0.538 |

Table.2 multivariate analysis on risk factors for new onset OAB in older subjects.

| | The effector for new occurrence of OAB | | | | | |
|-----------------------|--|---------------|---------|--------------|---------------|---------|
| | Univariate | | | Multivariate | | |
| | odds | 95%CI | p | odds | 95%CI | p |
| Sex | | | | | | |
| women | 1 | | | 1 | | |
| Men | 1.9 | (1.5 - 2.4) | <0.0001 | 2 | (1.4 - 3.0) | <0.0001 |
| Voiding symptoms | 1.1 | (1.1 - 1.2) | <0.0001 | 1.1 | (1 - 1.2) | <0.0001 |
| Alcohol drinking | | | | | | |
| Never | 1 | | | 1 | | |
| Ex-drinker | 1.1 | (0.8 - 1.5) | 0.507 | 1.1 | (0.8 - 1.6) | 0.68 |
| 1-2/week | 1.3 | (0.8 - 2.4) | 0.274 | 1.2 | (0.7 - 2.1) | 0.556 |
| 3-4/week | 1.5 | (0.9 - 2.3) | 0.06 | 1.2 | (0.8 - 1.9) | 0.368 |
| every day | 1.6 | (1.1 - 2.0) | 0.002 | 1.1 | (0.8 - 1.5) | 0.713 |
| Smoking status | | | | | | |
| Never | 1 | | | 1 | | |
| Previous | 1.5 | (1.2 - 1.9) | 0.09 | 0.8 | (0.4 - 1.1) | 0.1 |
| Current | 1.4 | (0.9 - 2.3) | 0.002 | 0.8 | (0.5 - 1.2) | 0.247 |
| History/comorbidities | | | | | | |
| Hypertension | 1.3 | (1.0 - 1.6) | 0.032 | 1.2 | (0.9 - 1.5) | 0.11 |
| Depression | 1.8 | (1.4 - 2.4) | <0.0001 | 1.8 | (1.4 - 2.5) | <0.001 |

Disclosures

Funding: non Clinical Trial: Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Ethical Review Board of Nara medical university **Helsinki:** Yes **Informed Consent:** Yes