

ASSOCIATION OF ADVANCED GLYCATION END-PRODUCTS ACCUMULATION WITH OVERACTIVE BLADDER SYNDROME IN JAPANESE COMMUNITY-DWELLING ELDERLY

Hypothesis / aims of study

Advanced glycation end-products (AGEs) are the products of non-enzymatic glycation and oxidation of proteins and lipids. AGEs accumulation has been reported to be immunohistochemically detected in human bladder [1], which suggests possible association between AGEs accumulation and bladder dysfunction. The aim of this study is to evaluate the influence of AGEs accumulation on the development and severity of overactive bladder (OAB) syndrome in community-dwelling elderly.

Study design, materials and methods

A cross-sectional study involving 287 Japanese community dwellers aged ≥ 75 was conducted. AGEs accumulation was non-invasively measured as skin autofluorescence (SAF) values by using the AGE-Reader. The presence and severity of OAB was evaluated by using the OAB Symptom Score (OABSS). People with an urgency score of ≥ 2 and sum score of ≥ 3 were considered to have OAB. The associations of SAF with the prevalence and severity of OAB were examined via the linear or logistic regression model.

Results

The mean age of the participants was 80.2 (SD = 4.3) years. Of the participants, 115 (40.1%) were male and 85 (29.4%) had OAB. The mean SAF was 2.30 (SD = 0.41) arbitrary units. The univariate analysis revealed that SAF was positively associated with age ($p = 0.005$) and age was positively associated with OABSS ($p = 0.005$). However, no significant association was observed between SAF and either OAB or OABSS ($p = 0.98$ and 0.91 , respectively). The multivariate analysis revealed that age was significantly associated with both OAB and OABSS ($p = 0.012$ and 0.002 , respectively), whereas SAF was not associated with either ($p = 0.36$ and 0.35 , respectively). Moreover, overweight was associated with higher OABSS ($p = 0.042$).

Interpretation of results

Our results demonstrated that AGEs accumulation measured by using SAF did not significantly influence the prevalence and severity of OAB in the Japanese community-dwelling elderly. This is the first study to assess the influence of SAF on OAB but has several limitations: a cross-sectional study design; a small sample size; and the use of SAF as a proxy for AGEs accumulation in the bladder. Therefore, external validations in series with larger cohorts that incorporate mechanistic studies are warranted to validate and explain our results.

Concluding message

SAF was associated with age, but not with the prevalence and severity of OAB in the Japanese community dwellers aged ≥ 75 years. Further studies are necessary.

References

1. Matsumoto K, Fujiwara Y, Nagai R, Yoshida M (2009) Immunohistochemical detection of advanced glycation end products in human bladder with specific monoclonal antibody. *Int J Urol* 16(4): 402–405; discussion 405 and 406.

Disclosures

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