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Center for Innovative Research for Communities and Clinical Excellence (CiRC²LE) Fukushima Medical University

Association of Advanced Glycation End-products Accumulation with Overactive Bladder Syndrome in Japanese Community-dwelling Elderly

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Objectives: To evaluate the influence of advanced glycation end-products (AGEs) accumulation on the development and severity of overactive bladder (OAB) syndrome in community-dwelling elderly.

Patients and Methods: A cross-sectional study involving 287 Japanese community dwellers aged ≥75 years was conducted in 2015. 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.

Conclusions: AGEs accumulation measured as SAF by using the AGE-Reader was not associated with the prevalence and severity of OAB syndrome defined by using the OABSS score in Japanese community-dwelling elderly. External validations in series with larger cohorts that incorporate mechanistic studies are warranted to validate and explain our results.

Table 1. Baseline characteristics of the analysis population (n=287)

	Number	%	Mean (SD)
Age (years)			80.2 (4.3)
SAF (AU)			2.30 (0.41)
Male sex	115	40.1	
OAB	85	29.4	
OABSS			3.6 (2.7)
BMI			22.8 (3.3)
Overweight	76	26.5	
Diabetes			
Present	22	7.7	
Missing	99	34.5	
Hypertension			
Present	183	63.8	
Missing	75	26.1	
Smoking			
Present	88	30.7	
Missing	25	8.7	

Figure 1. Association between A) Age and SAF, and B) SAF and OABSS

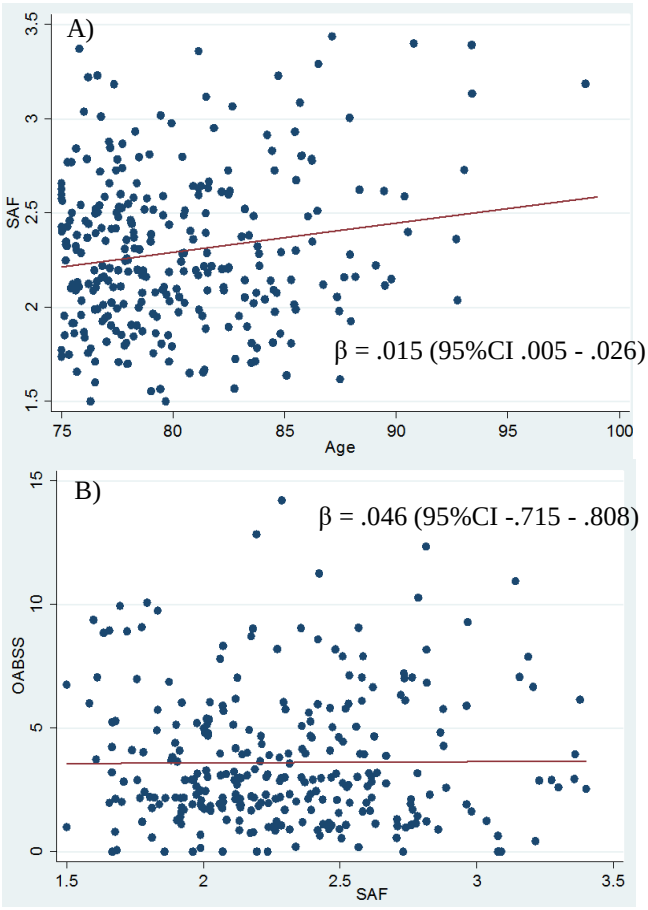

Table 2. Multivariate analysis for predictive variables of OAB.

	OAB		OABSS score									
			Total		Daytime frequency		Nighttime frequency		Urgency		Urgency incontinence	
	OR (95%CI)	P value	Coef (95%CI)	P value	Coef (95%CI)	P value	Coef (95%CI)	P value	Coef (95%CI)	P value	Coef (95%CI)	P value
SAF	0.71 (0.35-1.43)	0.33	-0.37 (-1.20-0.45)	0.37	-0.06 (-0.23-0.11)	0.47	-0.01 (-0.28-0.26)	0.93	-0.18 (-0.60-0.24)	0.41	-0.12 (-0.43-0.19)	0.45
Age	**1.08 (1.02-1.15)**	**0.015**	**0.11 (0.04-0.19)**	**0.003**	-0.0008 (-0.02-0.01)	0.92	**0.03 (0.005-0.05)**	**0.02**	**0.05 (0.02-0.09)**	**0.005**	**0.03 (0.003-0.06)**	**0.03**
Male sex	0.87 (0.39-1.96)	0.74	0.47 (-0.45-1.38)	0.32	0.03 (-0.17-0.22)	0.79	**0.60 (0.30-0.91)**	**<0.0001**	0.08 (-0.39-0.55)	0.75	-0.24 (-0.59-0.11)	0.18
Overweight	1.71 (0.95-3.08)	0.07	0.68 (-0.03-1.38)	0.06	0.03 (-0.11-0.18)	0.67	0.11 (-0.12-0.34)	0.34	**0.38 (0.02-0.75)**	**0.04**	0.15 (-0.12-0.42)	0.27
Diabetes	1.24 (0.45-3.43)	0.68	0.57 (-0.72-1.86)	0.38	-0.24 (-0.48-0.008)	0.06	0.23 (-0.21-0.68)	0.29	0.29 (-0.34-0.91)	0.36	0.28 (-0.20-0.76)	0.24
Hypertension	1.37 (0.50-3.74)	0.54	0.30 (-0.68-1.28)	0.55	**0.28 (0.08-0.49)**	**0.007**	-0.18 (-0.50-0.13)	0.25	0.19 (-0.34-0.73)	0.48	0.005 (-0.37-0.38)	0.98
Smoking	2.15 (0.95-4.86)	0.07	-0.02 (-0.96-0.92)	0.96	-0.05 (-0.25-0.15)	0.61	-0.27 (-0.58-0.04)	0.09	0.18 (-0.30-0.67)	0.46	0.12 (-0.024-0.78)	0.53

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None of the authors have any conflicts of interest to report.