

DIET AND LIFESTYLE FACTORS ASSOCIATED WITH OAB IN MEN: A PROSPECTIVE STUDY

Hypothesis / aims of study

The aims of this study were (i) to investigate associations of lifestyle and dietary factors with the onset of overactive bladder (OAB) in men and (ii) to compare the findings between men and women (previously reported) (1) with a view to generating causal hypotheses for OAB.

Study design, materials and methods

This was a prospective study of a community dwelling cohort of men aged 40 or more. Baseline data on urinary symptoms and diet/lifestyle factors were collected from 5454 men using a postal approach for validated urinary symptoms (2) and a validated food frequency questionnaire (EPIC, response rate 61%). Follow-up data was collected from 4887 men one year later (response rate 90%). There was evidence of little bias in symptom reporting from a related study of non-responders compared to responders. OAB was defined as either urge leakage or urgency. These were the most consistent markers identified from literature review and analysis of 490 subjects with urodynamic diagnoses. Multivariate logistic regression was used to control for potential confounders (including age, physical functioning, energy and fluid intake) in relation to food, drink and other lifestyle factors

Results

There was a strong apparently protective association between beer intake and subsequent onset of OAB (Table). The association remained after controlling for alcohol intake (g ethanol/day) which was also associated with OAB. Potatoes were the only associated food item, showing an apparently adverse link with OAB ($p=0.07$) particularly at the highest level of intake (>1 portion per day). OAB was also associated with physical activity ($p=0.009$) but this was confined to inability to undertake vigorous activity rather than the frequency of such exercise. Adjustment of results for voiding symptoms (straining, hesitancy, intermittent stream) and incomplete emptying had little effect on these findings. Similarly, adjustment for recognised material deprivation indicators, including employment status, house and car ownership, made little difference.

Interpretation of results

Beer and alcohol appeared to protect against the onset of OAB in men. Potential mechanisms include direct phyto-estrogen effects from hops, plus the effects of alcohol on bladder muscle contractility and sex hormones. High consumption of potatoes appeared detrimental. They contain a recognised neurotoxin, solanine, a glycoalkaloid with strong cholinesterase inhibitory actions.(3) None of these factors was associated with OAB in women. Furthermore, OAB in men showed no association with the aspects of healthy diet and lifestyle observed in women (1) (ie low vegetables, bread and chicken intakes and excess smoking, fizzy drinks and obesity), independent of socio-economic factors. Men eat and drink more than women and have a lower requirement for some nutrients. For these reasons men may be less prone to problems with sub-optimal nutrition but more exposed to phytochemically active constituents of food and drink.

Concluding message

The potential effects of beer, alcohol and potatoes on the incidence of OAB in men warrant further investigation. These and other variations in associated diet and lifestyle factors between men and women suggest external factors may influence the onset of OAB, and as such, may be susceptible to modification.

Multivariate analysis of lifestyle factors associated with onset of OAB

Lifestyle categories	OR (95% CI)*	P value
Beer		
never/rarely	1.00	
1-4/month	0.70 (0.48 to 1.02)	0.0002
2-6/week	0.72 (0.50 to 1.03)	
≥ daily	0.33 (0.19 to 0.56)	
Vigorous activity		
Unable	2.23 (1.38 to 3.59)	
Never/seldom	1.00	0.009
1-2/week	1.23 (0.82 to 1.84)	
≥ 3/week	1.02 (0.68 to 1.54)	
Potatoes		
0-5/week	1.00	0.07
6-7/week	1.02 (0.68 to 1.52)	
≥8/week	1.44 (1.02 to 2.04)	

*Adjusted for age, physical functioning (SF36), energy (kjoules/d) and fluid (ml/d).

References

1. The association of diet and other lifestyle factors with overactive bladder and genuine stress incontinence: a longitudinal study in women. *BJU International* 2003;92:69-77.
2. Validity and reliability of a questionnaire to measure the severity of lower urinary tract symptoms of storage abnormality: the Leicester Urinary Symptom Questionnaire. *Brit J of Urology International* 2002;90:205-215
3. Solanine (glycoalkaloids) in potatoes - toxicological evaluation. *Food Chem Toxicol* 1990;28:759-61.

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