Relationship between caffeine or alcohol intake and overactive bladder symptoms: an observational study

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BACKGROUND / AIM

Overactive bladder (OAB) is a lower urinary tract syndrome which affects between 10-20% of the Spanish population. It is characterized by polyuria, nocturia, urgency to urinate and urgent urinary incontinence (1). Previous studies measured the effect of hydration habits on the severity of OAB (2), however, the effect of beverages related to diuresis such as caffeine, tea or infusions (CTI) and alcohol (OH) were not analyzed.

The aim was to analyze if consuming alcohol and/or caffeine, tea or infusions modifies main OAB symptoms.

METHODS

This was an observational study with convenience sampling. 181 participants from 18 to 70 years were included.

Sample size distribution according to sex

65%	**35%**
49.2 ± 11.9 years	50.6 ± 11.5 years

Men **Women**

THREE MAIN OAB SYMPTOMS

URGENCY POLYURIA NOCTURIA

IPSS questionnaire.
Hydration questionnaire (3).

Bioimpedance (MC-780 MA, Tanita, Tokyo).

STUDY GROUPS

CON

participants who did not consume OH or CTI

Caffeine, tea or infusions (CTI)

participants who consumed only CTI

Alcohol plus caffeine, tea or infusions (OH+CTI)

participants who consumed CTI and OH

There were not participants who only ingested OH without CTI

STATISTICAL ANALYSIS (SPSS v.29)

Pairwise correlations were performed with Spearman p test and differences between groups with Kruskal-Wallis test. The significance level was set at 0.05.

RESULTS

181 adults (65.2% men), mean age 49.69±11.7 years were included. CON group represented 3% of the sample, while CTI 26% (nobody drank stimulant high-caffeinated beverages) and OH+CTI 71%. Of CTI group, 67.4% consumed CTI 7 days/week, while 11.6% consumed CTI less than 3 days/week. Regarding OH+CTI group, 60.8% consumed OH+CTI 1 or 2 days/week and 13.4% more than 5 days/week. No correlation was observed between CTI and OH+CTI for polyuria and nocturia. However, there was a relationship between study groups and urgency symptom (r=0.16; p=0.04).

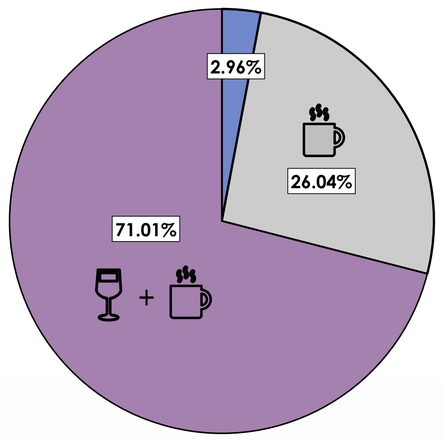

Figure 1. Percentage of participants consuming or not diuretic drinks.

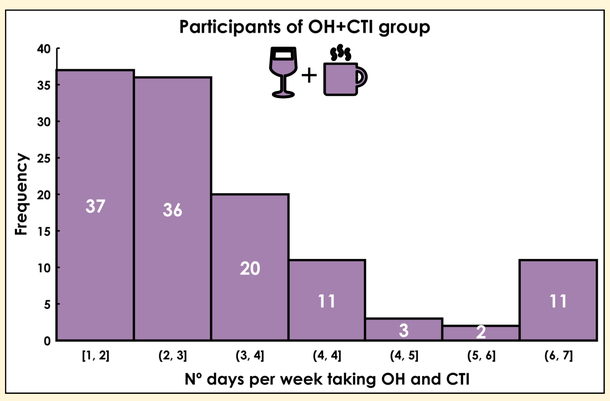

Figure 2. N° of days per week taking OH and CTI in OH+CTI group.

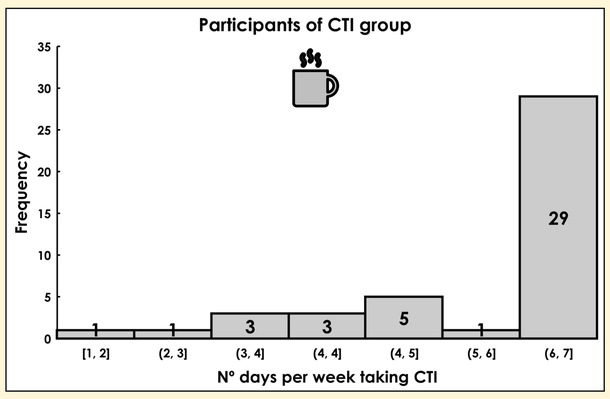

Figure 3. N° of days per week taking CTI in CTI group.

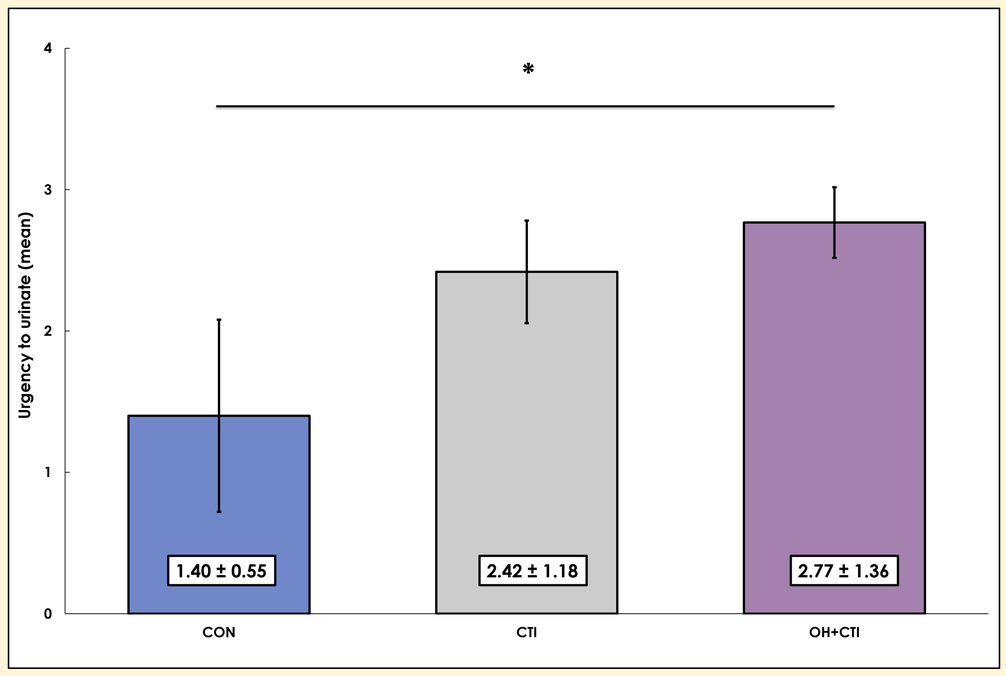

Figure 4. Mean and standard deviation for urinary urgency according to study groups. * p<0.05 compared to CON group.

CONCLUSION

Intake of diuretic beverages is high in this population and is positively related to urgency symptom. In fact, alcohol plus caffeine, tea or infusions group had significantly more urinary urgency than control group.

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REFERENCES

1. Martínez E., et al. (2009). *Act. Urol. Esp., 33(2): 159-166.*
2. Callan, L., et al.(2015). *J Wound Ostomy Continence Nurs.*, 42(6), 614–620.
3. Maroto-Sánchez, B., et al. (2015). *Nutr. Hosp.*, 32 Suppl 2, 10314.