

# Prevalence and Trend in Alcohol Use Disorders in Japanese Diabetic Patients

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### Introduction

Consumption of alcoholic drinks is decreasing in Japan and the percentage of people with alcohol drinking habits (drinking alcohol more than 3 days in a week and more than 180 ml in a day) is 43.7% of males, 15.2% of females according to the Ministry of Health, Labor and Welfare<sup>1</sup>. The percentage of people drinking alcohol quantity that increases the risk of lifestyle diseases (net alcohol intake of 40 g or more in males and 20 g or more in females per day) is 15.8% in males and 8.8% in females<sup>2</sup>. There are many diabetic patients with drinking habits, drinking alcohol is considered to have a serious impact on the management of blood glucose, but there are no systematic studies and evidence on the impact of drinking alcohol on diabetic patients in Japan. The purpose of this study is to identify the proportion of patients with hazardous or harmful alcohol consumption pattern among the diabetic patients and to reveal the effect of drinking behavior on the blood glucose management of diabetic patients.

### Ethical consideration

The present study was conducted after obtaining approval from the ethical review board at the author's university.

### Methods

The continuous alcohol use disorder identification test (AUDIT: The Alcohol Use Disorder Identification Test)<sup>3</sup>, a self-written questionnaire was distributed after explanation to diabetic patients who visited the Division of Endocrinology, our hospital, for medical examination on specific days of the week during a specific period. A chart to convert standard drinks to alcoholic beverages was distributed along with the questionnaire. The questionnaires were scored and a comparative study was carried out with the patient's attributes, clinical findings and test values of the blood sample and urine collected on the day when the questionnaire was distributed.

### Results

#### 1. Patient attributes

286 questionnaires were distributed in 3 months and 168 questionnaires were collected (collection rate 58%). The age of patients who responded was 67 ± 11 years with 103 males and 65 females. The overall percentage of alcohol consumption was 56.3% (95 people) with 66.7% (68 people) males and 41.5% (27 people) females. If alcohol consumption of more than twice a week with a consumption of more than 30 gm a day is considered as drinking habit, the total percentage was 23.2% (39 people), 31.4% (32 people) males and 10.8% (7 people) females (Table 1). The AUDIT score was 3.6 ± 5.1 (mean ± standard deviation). Clinical findings were BMI 25.1 ± 5.1 Kg/m<sup>2</sup>, HbA1c 7.4 ± 1.0%, LDL 100 ± 28 mg/dl, TG 154 ± 106 mg/dl, γGTP 45 ± 73 U/l, MCV 93 ± 6 fl, and UA 5.6 ± 4.3 mg/dl.

#### 2. Stratification according to AUDIT score

The percentages for different AUDIT scores cut-off indicates that 25.5% (26 people) males and 6.3% (4 people) females correspond to 8 points or more (hazardous use of alcohol), 10.8% (11 people) males and 4.7% (3 people) females correspond to 12 points or more (suspicion of alcohol dependence), 7.8% (8 people) males and 4.7% (3 people) females correspond to 15 points or more and only 2.9% (3 people) males correspond to 20 points or more (Table 2).

#### 3. Relation between AUDIT score and clinical findings

The clinical findings between the group (AUDIT points 0) that did not consume alcohol and group corresponding to the problematic drinking index (group with AUDIT points 8 or more, group with AUDIT points 12 or more, group with AUDIT points 15 or more, and group with AUDIT points 20 or more) were compared. There were no significant differences in the values of BMI, HbA1c, LDL, and TG between the group that did not consume alcohol and group corresponding to the problematic drinking index (Table 3).

### Discussion

The average points for AUDIT in this study was 3.6, which is lower than the national survey of 4.1 points conducted on the general residents in Japan<sup>4</sup>.

AUDIT score of 8 or more points that indicates the possibility of hazardous or harmful alcohol usage was 24.8% in this study. AUDIT score of 8 or more points has been reported as 24.9% in a survey for patients with type 1 diabetes in Brazil<sup>5</sup>. A simple comparison is not possible because of the differences in culture, type of diseases of target patients, and study method, but the resulting similar percentages is of interest.

Patients with a score of 20 or more (level required to visit specialists for alcohol dependence evaluation and treatment) AUDIT points who were identified. Screening tests such as AUDIT for drinking behavior and alcohol dependence should be conducted for patients suspected of alcohol-related problems even during routine care of diabetes.

A significant correlation between drinking behavior of diabetic patients and factors involved in controlling blood glucose could not be identified.

Table 1. Ratio of the drinking habit

Age	Male	Female
Total	31.4	10.8
40-49	14.3	0.0
50-59	40.0	12.5
60-69	42.9	16.7
70-79	15.2	13.6
80-89	40.0	0.0
90-99	0.0	0.0

Table 2. Stratification according to AUDIT score

AUDIT Point	Male	Female
8 ≤	25.5%	6.3%
12 ≤	10.8%	4.7%
15 ≤	7.8%	4.7%
20 ≤	2.9%	0.0%

AUDIT: The Alcohol Use Disorder Identification Test

Table 3. biochemical examination of blood between the group that did not consume alcohol and group corresponding to the problematic drinking index

AUDIT Point	BMI (Kg/m <sup>2</sup> )	HbA1c (%)	LDL (mg/dl)	TG (mg/dl)	γGTP (mg/dl)	MCV (fl)
non consume alcohol (0)	25.6	7.5	98	136	29	93
8~11	24.8	7.3	99	198	102	96
12~14	26.1	7.2	94	246	148	95
15~19	25.5	7.3	93	273	177	92
20~	24.0	7.9	101	235	148	90

### References

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