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ARTICLE

Alcohol use problems in migraine and tension-type headache

Consumo problemático de álcool na migrânea e cefaleia do tipo tensional

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ABSTRACT

Objective: The aim of this study was to assess alcohol use problems in patients with migraine and tension-type headache. **Method:** We evaluated 81 patients with migraine and 62 patients with tension-type headache. The identification of alcohol consumption problems was carried out with Alcohol Use Disorders Identification Test (AUDIT). Alcohol use problem was defined as an AUDIT score of 8 or above. The headache impact was calculated with headache impact test (HIT-6). **Results:** The proportions of alcohol use problem among patients with migraine and tension-type headache were 5.2% and 16.1%, respectively (P=0.044). The headache impact was significantly higher with migraine than with tension-type headache (P<0.0001). There was an inverse correlation between headache impact and AUDIT (P=0.043). **Conclusions:** Our results suggest that migraine patients are less prone to alcohol use problems than tension-type headache patients. One of the possible reasons is that migraine is associated with greater impact than tension-type headache.

Keywords: migraine, alcohol, tension-type headache, alcohol use disorders.

RESUMO

Objetivo: Este estudo avaliou o consumo problemático de álcool em pacientes com migrânea e em pacientes com cefaleia do tipo tensional. **Método:** Foram avaliados 81 pacientes com migrânea e 62 pacientes com cefaleia do tipo tensional. A avaliação do consumo de álcool foi realizada com o Teste para Identificação de Problemas Relacionados ao Uso de Álcool (AUDIT), sendo considerado consumo problemático quando o escore do AUDIT foi igual ou maior que 8. O impacto funcional da cefaleia foi avaliado pelo Teste de Impacto da Cefaleia (HIT-6). **Resultados:** As proporções de desordens relacionadas ao álcool entre pacientes com migrânea e cefaleia do tipo tensional foram 5,2% e 16,1%, respectivamente (P=0,044). O impacto funcional foi significativamente maior na migrânea que na cefaleia do tipo tensional (P<0,0001). Houve significativa correlação entre comprometimento funcional da cefaleia e os escores do AUDIT (P=0,043). **Conclusões:** Nossos resultados sugerem que pacientes com migrânea têm menor probabilidade de apresentar consumo problemático do álcool que pacientes com cefaleia do tipo tensional. Uma das possíveis explicações é que o impacto funcional da cefaleia é maior na migrânea que na cefaleia do tipo tensional.

Palavras-chave: migrânea, álcool, cefaleia do tipo tensional, consumo problemático de álcool.

Migraine is a common and disabling primary headache disorder[1-3]. It has been reported that alcohol ingestion may trigger headache attacks in migraine patients[5-9]. Some studies have suggested that subjects with migraine have less alcohol consumption[7,10]. One possible explanation is that alcohol triggers migraine attacks so that migraneurs tend to avoid drinking alcohol to prevent attacks[7,8]. The role of alcohol in triggering tension-type headache attacks is less studied than in migraine and it is not yet clear if alcohol consumption is reduced in patients with tension-type headache[5,8,9].

Excessive alcohol drinking has been associated with adverse social and health consequences such as a wide range of diseases and injuries in several populations[11]. Hazardous alcohol ingestion is a public health problem and its risk factors have been studied. Several factors have been associated with alcohol use disorders such as being male, single, young, and having mental disorders[12,13]. Since alcohol can trigger migraine and people with migraine tend to avoid drinking more than those without migraine it is plausible to hypothesize that migraine may reduce the risk of alcohol use disorders.

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However, to our knowledge, there are not previous studies assessing if there is a reduction of the risk of alcohol use problems in people with migraine compared with the general population[7]. Also, it is still unknown if the risk of alcohol problems is lower among patients with migraine than among patients with tension-type headache.

The Alcohol Use Disorders Identification Test (AUDIT) has been largely used to screen alcohol use disorders[14,15]. Using this instrument, we compared the percentage of alcohol use problems in patients with migraine and with tension-type headache.

METHOD

The patients of this study were enrolled from the outpatient headache clinic of the Santa Casa de Misericórdia de Vitória School of Medicine, Brazil. All patients were recruited during their first attendance at the clinic. Patients previously using pharmacological preventive treatments for headache were excluded. All patients were evaluated and diagnosed by a neurologist specialized in the care of patients with headache. Headache diagnoses were based on the International Headache Classification (ICHD-2)[16]. The minimal age for the inclusion of patients was 18 years old.

The assessment of alcohol use problems was carried out with the Portuguese validated version of the AUDIT and a score between 0 (minimum) and 40 (maximum) was obtained[12-15]. The test contains 10 questions assessing recent use of alcohol, dependency, and alcohol-related problems. The answers are given scores from 0 to 4 with higher scores indicating worse problems. The AUDIT scores were compared in the two groups (migraine and tension-type headache). The AUDIT scores were defined into two groups: a) below 8 – not diagnosable alcohol problem, b) 8 or above: alcohol use disorder[12-15]. The proportions of patients with and without alcohol use problem were compared in the two groups.

The Portuguese validated version of Headache Impact Test (HIT-6) was used to assess the impact of headache. HIT-6 scores ranges from 36 (lower impact) to 78 (higher impact)[17]. The correlation between HIT-6 and AUDIT was assessed.

The data were analyzed with the GraphPad Prism statistical software version 5.0 (GraphPad Software Inc., San Diego, CA, USA). The confidence interval was of 95% and the significance level was set at $P<0.05$. The Fisher's exact two-tailed test test was used to compare the proportion of migraine and tension-type headache patients with alcohol use problems. The correlation between AUDIT and HIT-6 scores was evaluated with Spearman test. Verification of normal distribution of data was performed using the Kolmogorov-Smirnov. Mann-Whitney test were used for the comparison of median HIT-6 scores between patients with migraine and tension type headache.

This study received full approval by the Ethics Committee on Research of the Escola Superior de Ciências da Santa Casa de Vitória (EMESCAM), Vitória, Brazil and informed consent was obtained from each participant.

RESULTS

Demographical data including gender, age, marital status, and years of school completed are presented in Table 1. The median headache impact was 63.5 (ranging from 36 to 78) among patients with migraine and 51 (ranging from 36 to 76) among patients with tension-type headache ($P<0.0001$).

The proportions of alcohol use problems among patients with migraine and patients with tension-type headache were 5.2% and 16.1%, respectively ($P=0.044$) (Figure 1). A significant correlation between AUDIT and HIT-6 was found ($P=0.043$) (Figure 2).

Table 1. Demographical data of patients with migraine and patients with tension-type headache.

	Migraine (n=81) n (%)	Tension-Type Headache (n=62) n (%)	p
Gender			0.10
Male	7 (8.6)	11 (17.7)	
Female	74 (91.4)	51 (82.3)	
Age (mean±SD)	40.7±14.34	38.72±18.32	0.29
Marital status			0.17
Single	32 (39.5)	35 (56.4)	
Married	36 (44.4)	17 (27.4)	
Divorced	6 (7.4)	4 (6.5)	
Widowed	7 (8.7)	6 (9.7)	
Years of school completed			0.38
0-7 years	30 (37)	21 (33.9)	
8-11 years	27 (33.3)	16 (25.8)	
>11 years	24 (29.6)	25 (40.3)	

SD: standard deviation; N: number of cases.

DISCUSSION

We found significantly a lower proportion of alcohol use problems in patients with migraine when compared with patients with tension-type headache. This finding is consistent with previous studies showing lower alcohol consumption among patients with migraine when compared to subjects without migraine[7]. This is possibly due to the fact that alcohol may trigger migraine attacks. Some hypotheses have been raised to explain why alcohol triggers migraine[8]. It is possible that alcohol provokes neurogenic inflammation, calcitonin gene related protein (CGRP) release, or cortical spread depression[8]. It is also uncertain whether alcohol per

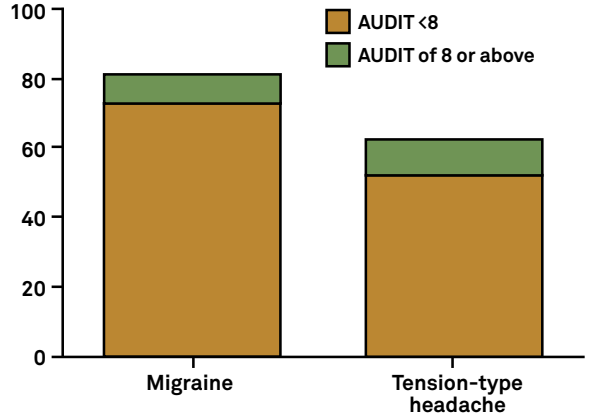

Figure 1. Proportions of patients with alcohol use problems AUDIT of 8 or above in the group of patients with migraine and in the group of patients with tension-type headache (P=0.044).

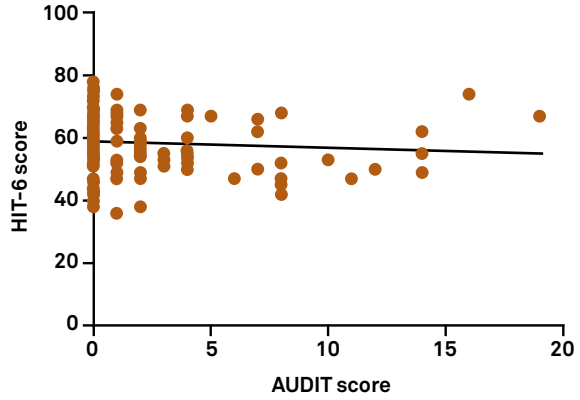

Figure 2. Correlation between alcohol use AUDIT and HIT-6 (P=0.043).

se or other components in alcohol beverages that trigger migraine attacks. Although the relationship between alcohol consumption and tension-type headache is less clear than with migraine, the present study suggests that patients with migraine and patients with tension-type headache have different levels of susceptibility to alcohol.

In the present study an inverse correlation between headache impact and alcohol consumption was found, suggesting that patients with higher headache impact tend to drink less. Migraine was associated with a higher headache impact than tension-type headache. The higher impact of migraine may have been associated with lower alcohol consumption. However, it is not possible to rule out that other factors besides headache impact may have contributed to the different patterns of alcohol consumption between migraine and tension-type headache. For instance, it is possible that the different pathophysiological mechanisms involved in migraine and tension-type headache may contribute to differences in alcohol susceptibility in these two headache disorders.

The excessive drinking can cause substantial risk or harm to the individual. Alcohol-related problems represent an immense economic loss to many communities around the world[11-13]. AUDIT was developed by the World Health Organization (WHO) to screen for excessive drinking[14,15]. AUDIT has been validated in many countries and has showed good levels of sensitivity and specificity for alcohol use disorders[12-15]. Our study suggests that migraine reduces harmful alcohol consumption and alcohol-related problems in comparison with tension-type headache. Future studies are still needed to assess the risk of alcohol use problems in migraine in comparison with the general population.

Our study has several limitations. Our study did not address the patterns of consumption of different types of alcohol beverages. The population of the study originated from a headache clinic and there have been studies demonstrating differences in headache patterns in the community and in specialized clinical settings[18]. The sample size was small and, as expected, there was a higher proportion of women. It is well known that both migraine and tension-type headache and migraine are more frequent among women while alcohol use problems are more frequent among men. Future studies should address the risk of alcohol use problems separately in male and female patients with primary headache disorders. We used a validated and widely used questionnaire; however, the psychiatric evaluation, not performed in our study, is the most reliable marker of alcohol-related disorders.

Excessive drinking is a significant public health problem[11]. The knowledge of risk factors of alcohol use disorders is essential to guide public health policies against alcohol use problems. Our study suggests that migraine reduces the risk of alcohol use problems potentially reduces alcohol related problems; however, larger and population studies are still required to more precisely assess the impact of having migraine and other primary headaches on the risk of developing alcohol use disorders.

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