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ALCOHOL USE DISORDER AND DEPRESSION IN PATIENTS WITH ALCOHOL-RELATED SEIZURES

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Both alcohol use disorder and depression are important aspects of health in the general population and among patients with epilepsy. Depression is the most prevalent psychiatric comorbidity in epilepsy, thereby increasing morbidity as well as mortality rate. From our experience, we can see that one third of epilepsy inpatients experience seizures that are alcohol-related. There have been no studies conducted in Latvia about alcohol use disorder and depression in patients with alcohol-related seizures (ARS) and epilepsy. We recruited 108 patients with ARS, 44 of whom had comorbid epilepsy. 75% of patients in our study had depression according to the Hamilton depression scale. Higher score in the Alcohol Use Disorder Identification Test was associated with thoughts of self-harm. Greater consumption of alcohol on a typical day when drinking was associated with a higher risk of alcohol dependence. Of patients without epilepsy, 60% received antiepileptic drugs (AEDs) and 17% even used 2–3 different drugs to overcome ARS. A large part of patients had not been warned by their physician that alcohol provokes seizures. Our data could help to identify greater suicidality risk and alcohol dependence risk cases in patients with ARS, as well as improve care for this group of patients in general.

Key words: *alcohol-related seizures, depression, epilepsy, AUDIT.*

INTRODUCTION

Alcohol use disorder, related health problems, and depression are critical aspects of health in the general population and among patients with epilepsy. Excessive alcohol use doubles the risk of depression just as depression doubles the risk of alcohol use disorder (Boden and Fergusson, 2011). The bidirectional relation between depression and epilepsy was already mentioned by Hippocrates in his writings (Lewis, 1934). Anxiety and depression are typical comorbidities in patients with epilepsy (Jackson and Turkington, 2005). The prevalence of depression is over 17% in patients with epilepsy and 30% and more in patients with drug-resistant focal epilepsy (Jackson and Turkington, 2005; Tellez-Zenteno *et al.*, 2007; Wiegartz *et al*, 1999); it is the most common psychiatric comorbidity in patients with epilepsy (Hoppe and Elger, 2011; Kanner, 2016). 23.1% of patients with epilepsy have active depression (Fiest *et al.*, 2013). Compared with the general population, patients with epilepsy have a recorded 1.7 (95% CI, 1.1–2.7) times greater risk of developing depression and a 5.1 times (95% confidence interval, 2.2–11.5) greater risk of attempting suicide (Hesdorffer *et al.*, 2006). Suicide accounts for 11.5% of all deaths in patients with epilepsy compared with 1% of deaths in the general population (Mula, 2017). A study in Great Britain found that 25% of patients with epilepsy had suicidal thoughts and more than 10% had attempted suicide in their lifetime (Rai *et al.*, 2012). Of the risk factors for suicidality in patients with epilepsy, the severity of seizures is not a significant determining factor (Gandy et al., 2013) while depression itself is the main risk factor that is known (de Oliveira *et al*., 2011; Hecimovic *et al*., 2012). AED therapy increases the risk of suicide in patients with epilepsy even more (Lehrner *et al*., 1999). Timely discovered severe cases of depression with suicidal thoughts and appropriate preventive measures are the main means of decreasing the associated rate of mortality. Some aspects of depression are affected more often in patients with epilepsy than in patients without epilepsy, often coinciding with ideas of self-harm, psychomotor arousal, and agitation (Jackson and Turkington, 2005). Among other aspects of depression, the decrease in the quality of life of patients must be mentioned, especially in cases of drug resistant epilepsy (Cramer *et al.*, 2003), which can greatly affect

the patients' compliance with medical recommendations. Alcohol dependence among epilepsy patients is also a risk factor for poor control of seizures (Rathlev *et al*., 2006), increased morbidity and mortality rate (Devinsky *et al.*, 2016).

The relation between alcohol use and seizures is well known. Alcohol can cause epileptic seizures during intoxication and withdrawal (Thompson, 1978; Freedland and McMicken, 1993) both in patients with and without known epilepsy. Even though patients with epilepsy are permitted to use a small amount of alcohol (1–2 units of alcohol a day) without affecting frequency of seizures and concentration of AEDs (Hoppener *et al*., 1983; Mattson *et al*., 1990), abstinence from alcohol is recommended in patients with previous history of ARS or alcohol dependence (Gordon and Devinsky, 2001). The experience of our clinic shows that in about 31% of cases of seizures in epilepsy inpatients are alcohol-related (Suna *et al*, 2015). People with alcohol use disorder in the general population have frequent mood disorders, especially depression and anxiety (19–20.3% of patients with anxiety/depression have comorbid alcohol dependence) (Pirkola *et al.*, 2005; Boschloo *et al.*, 2011). The degree of alcohol use is strongly associated with the severity of depression (Graham *et al*., 2007). Alcohol use disorder has a negative effect on the course of depression and vice versa — treatment of alcohol dependence noticeably increases the possibility of remission of depression (Hasin *et al*., 1996). ARS are defined as seizures that develop in circumstances of chronic alcohol dependence (Rathlev *et al*., 2006), and the existence of these seizures in individuals with alcohol dependence is a predictor of adverse health outcome. This patient group has a four times higher mortality rate than in the general population (Brathen *et al*., 1999).

There have been no studies conducted in Latvia about alcohol use disorder and depression in patients with ARS and epilepsy. The habits and reasons for alcohol use are also not known in these populations. We aimed to determine the prevalence of depression among patients with ARS, including those with comorbid epilepsy, determining its severity, most frequently affected emotional and psychosomatic aspects, effect on the quality of sleep, correlation of depression with habits and level of alcohol use, as well as the frequency of harmful alcohol use and alcohol dependence risk in these patient groups.

MATERIALS AND METHODS

A descriptive cross-sectional study design was used to determine alcohol use habits and the prevalence of depression in patients admitted to hospital with ARS, both with or without comorbid epilepsy. Adult patients with ARS were recruited between January 2016 and December 2016 to participate in a survey at the Emergency Unit and the Neurology Clinic of Riga East Clinical University Hospital "Gaiļezers". The study included 108 patients with ARS, 44 of whom were known to have been diagnosed with epilepsy (Alocohol-related seizures with epilepsy group (AS+ group)) and 64 patients were known to have ARS, but no epilepsy or unprovoked seizures in anamnesis (Alcohol-related seizures without epilepsy group (AS- group)).

The inclusion criteria were as follows: adults aged 18–80 years, having an admission diagnosis of ARS, being fully orientated and able to give informed consent, exhibiting no signs of alcohol intoxication and requiring no additional medical intervention at the time of interview. Upon consenting to the study, participants were interviewed using a study questionnaire that contained a demographic data part and a 17-point survey, as well as the Alcohol Use Disorder Identification Test (AUDIT test) (Babor *et al.*, 2001) and the Hamilton Depression Rating Scale (HAM-D) (Hamilton, 1960, Copyright permission granted).

The study survey contained the following questions (answers are shown in results): How many years have you had epilepsy (in the AS+ group)? How many years have you had alcohol-related seizures (in the AS- group)? How many seizures have you had per month in the last year: minimum and maximum? Are you regularly under observation by a neurologist in outpatient care? Do you regularly use medication? Do you skip using medication if you have used alcohol? How many different types of antiepileptic medication have you used until now? What type of medication do you currently use (name, dosage)? How many times per month do you use alcohol? How much alcohol on average do you use at one time (type of alcohol, quantity)? Do seizures themselves impact you negatively? (If yes, please elaborate.) Do you feel depressed after the seizure recovery period? Did you use alcohol before being diagnosed with epilepsy (AS+ group)? Have your alcohol use habits changed after being diagnosed with epilepsy? The most common reason you use alcohol (more than one reason may be mentioned)? How do you subjectively evaluate the physician's attitude towards you? Do you think that the attitude of medical staff (nurses, orderlies) is worse towards you than towards other patients? Have you previously been informed that using alcohol can provoke seizures?

The AUDIT test (created in 1989 by the World Health Organization specialists as a method to help discover excessive alcohol use and help physicians to identify patients whose alcohol use habits put them at risk of developing health problems and dependency caused by alcohol use) was used to identify alcohol-use disorder in the research groups. The AUDIT test is an internationally standardised and validated screening tool. It has been approbated in Latvian and Russian languages and includes recommendations in case of different alcohol use habits. The level of alcohol use in the AUDIT test corresponds to 2 diagnoses in the International Statistical Classification of Diseases and Related Health Problems (ICD-10) classification: F10.1 alcohol abuse and F10.2 alcohol dependence. They have their own diagnostic criteria in narcological diagnostics.

According to the AUDIT scale, the following levels of alcohol use are differentiated: a) low risk of alcohol-related problems (0–7 points); b) hazardous alcohol use (8–15

points); c) harmful alcohol use (16–19 points); and d) alcohol dependence (20 points). "Low risk of alcohol-related problems" describes alcohol use that does not cause alcohol-related problems. "Hazardous alcohol use" (Babor *et al.,* 1994) — is defined as alcohol use habits with a risk of consequences of using alcohol. The level does not correspond with the diagnoses of ICD-10 classification, but has a great practical purpose in the screening process (Anonymous, 2015). The recommendation is to give patients a simple advice focused on the reduction of hazardous drinking. "Harmful alcohol use" (Anonymous, 1993; Babor *et al.,* 1994) is defined as alcohol use habits that cause physical or mental health problems such as depression after using alcohol. Patients are recommended to undergo brief counseling and continued monitoring. "Alcohol dependence" — this parameter indicates possible alcohol dependence and warrants further diagnostic evaluation for alcohol dependence (Babor *et al.*, 2001; Anonymous, 2015).

In order to conduct the AUDIT test, quantities of different types of alcoholic drinks were recalculated into grams of absolute alcohol and shown as units of alcohol. In Latvia, according to recommendations by the Centre for Disease Prevention and Control (Anonymous, 2015), one unit of alcohol corresponds to 12 grams of absolute (100%) alcohol.

The HAM-D scale is used to provide an indication of depression and to quantify the severity of symptoms. It is one of the most widely used and accepted instruments for assessing depression. It contains 17 items rated on 3- to 5-point scale, with the sum of all items making up the total score. Each item represents a symptom of depression. The proportion of patients matching each grading of every symptom of HAM-D scale was calculated for both groups of patients. The data were statistically analysed using the IBM SPSS (Version 22) software package (IBM Corporation, New York, USA). Descriptive statistics included frequencies for categorical variables (shown in absolute numbers and percentages) and mean/median, and standard deviation for numerical variables. An assessment of the normality of data was done by the Shapiro-Wilk test. Continuous variables with normal distribution were presented as mean (±standard deviation); non-normally distributed variables were reported as median (range). Pearson's correlation coefficient was calculated to assess correlations, and associations between variables among patients were assessed using the Chi-square test.

The study was approved by the Medical and Biomedical Research Ethics Committee of the Rīga East Clinical University Hospital.

RESULTS

Demographic data. There were 36.4% (n = 16) women and 63.5% (n = 28) men in the AS+ group. The mean age was 45.9 ± 11.51 with a median 10.5 (1-47) years of epilepsy. The AS- group consisted of 28.1% (n = 18) women and 71.9% (n = 46) men with a mean age of 46.4 ± 10.13 years and a median 3 (1-28) years of seizures. The frequency of seizures in the AS+ group within the last year was 0-6 seizures a month, with 75% of all patients experiencing 0–1 seizures a month. During the worst months there were 1–14 seizures, with 70.5% experiencing 1–4 seizures a month. In the AS- group, the frequency of seizures varied little from 0–2 seizures, with 95.3 % of all patients experiencing 0–1 seizures a month. During the worst months there were 1–6 seizures, with 84% experiencing 1–2 seizures a month.

Habits of alcohol use. A fifth, or 20.5% (n = 9), of AS+ group patients used alcohol once a month, a quarter of patients (25.0%, n = 11) twice a month, 22.7% (n = 10) three times a month, 15.9% (n = 7) four times a month, the remaining 15.9% (n = 7) 5–23 times a month. The most commonly used types of alcohol were beer (38.6%, n = 17) and vodka (20.5%, n = 9). It is known that according to their own subjective judgment, 56.85% (n = 25) of patients used too much alcohol even before being diagnosed with epilepsy and for 47.7% (n = 21) of patients their habits of alcohol use did not change after being diagnosed with epilepsy, while 20.5% (n = 9) started using alcohol more frequently, but only 27.3% (n = 12) consumed alcohol less frequently. Only two patients (4.5%) stopped using alcohol and had been admitted to hospital after isolated periods of alcohol abuse during an extended period of abstinence.

A third of patients, or 32.8% (n = 21), in the AS- group used alcohol two times a month, 17.2% (n = 11) three times a month and just as many patients — four times a month, the remaining 29.7% (n = 19) used alcohol 5–20 times a month. The most commonly used types of alcohol were vodka (35.9%, n = 23) and beer (23.4%, n = 15). On a typical day when drinking a patient from the AS- group used a median 12 (1.5–37.5) units of alcohol while in the AS+ group that number was 3 (0.6–37.5).

Description of medical care. Only 31.8% (n = 14) of patients in the AS+ group were in outpatient care with a neurologist and of patients who had been recommended antiepileptic drug therapy (n = 38), 60.5% (n = 23/38) used it regularly, 39.5 % used it irregularly (n = 15/38), and 13.6% (n = 6/44) stated that medication had never been recommended by the doctor. Of all the patients in the AS+ group who experience ARS, 43.2% (n = 19) received 2 AEDs, 22.7% (n = 10) received three drugs, and 20.5% received monotherapy, while 13.6% (n = 6) did not receive therapy. 71.05% (n = 27/38) of patients admitted to occasionally forgetting to take their AEDs and further 44.4% (n = 12/27) regularly forgot to take their medication. Of those receiving antiepileptic therapy (n = 21/38), 55.2% did not use medication while using alcohol.

Only 15.6% (n = 10) of patients in the AS- group were in outpatient care with a neurologist and 54.7% (n = 35/64) of patients from this group used antiepileptic drug therapy, where 11.4% (n = 4/35) used 2 AEDs and 5.5% (n = 2/35) used 3 AEDs. 40.6% (n = 26) of patients in this group claimed to never have been warned by a doctor that alcohol can cause seizures, compared to 34.1% (n = 15/44) of pa-

tients in the AS+ group. Of those who receive antiepileptic therapy, 60% (n = 21/35) did not use medication while using alcohol.

Emotional state of patients. A fifth of respondents (20.5%, n = 9) in the AS+ group claimed that seizures did not negatively affect their emotional or physical wellbeing, while seizures had a negative impact physically for 47.7% (n = 21) and emotionally for 11.4% (n = 5) of respondents, but a fifth of patients (20.5%, n = 9) had both negative physical and negative emotional impact. From the AS+ group, 18.2% of patients (n = 8) thought that the attitude of medical staff (nurses and orderlies) was worse towards them than towards other patients, however 72.7% (n = 32) described the attitude of the physician to be very good. In the AS+ group, 6.8% (n = 3) of respondents had evaluated the physician's attitude as negative.

In the AS- group, 17.2% (n = 11) claimed that seizures did not have any negative emotional or physical effect on their wellbeing. Of all the patients, 28.1% (n = 18) had a negative physical effect from the seizures and 12.5% (n = 8) had a negative emotional effect, but 42.2% (n = 27) of patients experienced both physical and emotional negative effect. 67.2% (n = 43) claimed to feel depressed after each seizure. Of the AS- group, 14.1% of patients (n = 9) thought that the attitude of medical staff (nurses and orderlies) was worse towards them than towards other patients, however 60.9% (n = 39) described the physician's attitude as good or very good. Only 6.3% (n = 4) of patients had evaluated the physician's attitude as negative.

Description of alcohol use. The median number of AUDIT points in the AS+ group was 16 (1-29). The mean number of AUDIT points in the AS- group was 20.17 ± 6.77 (6-36). According to the AUDIT scale, only 4.7% (n = 3) of patients in the AS- group received 0–7 points, representing a "low risk of alcohol-related problems", but that number was 22.7% (n = 10) for patients in the AS+ group ($p = 0.005$). It may also be noticed that it was statistically significantly more common for patients in the AS- group to receive 20–40 points according to the AUDIT scale, warranting a consultation with an alcohol dependence specialist, alcohol dependence diagnosis and therapy (56.3%, n = 36 vs. 27.3%, n = 12, $p = 0.005$). "Hazardous alcohol use" was observed in practically the same number of patients in both groups — 25% of AS+ group patients (n = 11) and 20.3% (n = 13) of AS- group patients. "Harmful alcohol use" according to the AUDIT scale was observed in 18.8% (n = 12) of AS- group patients and 25% (n = 11) of AS+ group patients.

Description of depression. According to the Hamilton depression scale, the median HAM-D score was 13 (2-23) in the AS+ group. In the AS- group, the mean HAM-D score was 13.08 ± 5.46. 65.9% (n = 29) of AS+ group patients had a score according to the Hamilton depression scale that indicated depression compared with 81.3% (n = 52) of patients in the AS- group ($p = 0.07$). Thus, depression was observed in 75% (n = 81/108) of the study population. The results are displayed in Table 1.

Data analysis. Data analysis found no correlation either in the AS+ group or the AS- group between the number of HAM-D points (severity of depression) and alcohol units used, length of seizure anamnesis in years, and points in the AUDIT scale. However, when treating all study particiants as a whole, a statistically significant association was observed: patients with a greater AUDIT score more often corresponded to the parameter of "wishing he/she were dead or any thoughts of possible death to self" from the HAM-D scale. A positive correlation was observed between the amount of alcohol consumed on a typical day when drinking and points in the AUDIT scale ($p < 0.005$, r = 0.403). An association was found in patients in the AS+ group between the number of drugs used and the frequency of depression (80% of patients who received 3 AEDs and were admitted with ARS suffered depression according to the HAM-D scale). There was a tendency ($p = 0.068$) that patients who did not undergo outpatient observation with a neurologist had severe or very severe depression more often (19% vs. 0%). Outpatients who were not under neurologist's observation had a significantly higher score according to the AUDIT scale (greater risk of alcohol dependency) — 50% of patients who were not under observation by a neurologist were alcohol dependent according to the AUDIT scale, while alcohol dependency existed in 20% of patients who were under such observation ($p = 0.003$).

DISCUSSION

Epilepsy patients should not exceed a permitted alcohol amount that does not increase the risk of ARS, but patients do not abide by this recommendation, since a third of patients with epilepsy who were admitted to hospital had ARS. We found that over one half of the epilepsy patients used alcohol excessively even before being diagnosed with epilepsy and increasing seizure frequency was not a determining factor in the changing of alcohol use habits. Patients of the AS+ group consumed noticeably less alcohol on a typical day when drinking, did it less frequently and chose drinks with lower alcohol content, however, the motivation for such behaviour is not clear. According to our data, no correlation was found between alcohol use habits and level of depression, contrary to what was previously described (Graham *et al.*, 2007). It was observed that patients who consumed more alcohol on a typical day when drinking had a higher risk of alcohol dependency; therefore, this parameter could be used for prognostic purposes.

Patients with ARS were seldomly under observation by a neurologist and over one half of patients with ARS, but without epilepsy, received AED therapy. This indicates that a solution to the alcohol use problem is not achieved, but seizures that would not occur, if alcohol was not used, are being treated, which accentuates the necessity of educational work and motivation to be under observation by a physician. Attention should be given to the fact that 17% of patients without epilepsy used as many as 2–3 AEDs to overcome the ARS. It should be noted that a great number of patients in the study had not been previously warned by a physician that alcohol provokes seizures, and this lack of

Table 1

HAMILTON DEPRESSION RATING SCALE (HAM-D)

Item (Symptom), score	AS+ group (n = 44) vs. AS- group (n = 64), *p*-value
1. Depressed mood:	
0 = Absent	29.5% vs. 20.3%, n.s.
1 = These feeling states indicated only on questioning	18.2% vs. 45,3%, 0.004
2 = These feeling states spontaneously reported verbally	29.5% vs. 29.7%, n.s.
3 = Communicates feeling states non-verbally	22.7% vs. 4.7%, 0.004
4 = Patient reports virtually only these feeling states in his spontaneous verbal and nonverbal communication	-
2. Feelings of guilt:	
0 = Absent	11.4% vs. 23.4%, 0.031
1 = Self-reproach, feels he/she has let people down	45.5% vs. 48.4%, n.s.
2 = Ideas of guilt or rumination over past errors or sinful deeds	18.2% vs. 21.9%, n.s.
3 = Present illness is a punishment. Delusions of guilt	25.0% vs. 6.3%, 0.031
4 = Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations	-
3. Suicide:	
0 = Absent	38.6% vs. 35.9%, n.s.
1 = Feels life is not worth living	20.5% vs. 40.6%, n.s.
2 = Wishes he/she were dead or any thoughts of possible death to self	38.6% vs. 12.5%, 0.002
3 = Suicidal ideas or gestures	0% vs. 10.9%, n.s.
4 = Attempts at suicide	2.3% vs. 0%, n.s.
4. Insomnia – early:	
0 = No difficulty falling asleep	29.5% vs. 21.9%, n.s.
1 = Complains of occasional difficulty falling asleep	52.3% vs. 73.4%, 0.024
2 = Complains of nightly difficulty falling asleep	18.2% vs. 4.7%, 0.029
5. Insomnia – middle:	
0 = No difficulty	54.5% vs. 35.9%, n.s.
1 = Patient complains of being restless and disturbed during the night	29.5% vs. 57.8%, 0.004
2 = Waking during the night — any getting out of bed rates 2	15.9% vs. 6.3%, 0.103
6. Insomnia – late:	
0 = No difficulty	34.1% vs. 43.8%, n.s.
1 = Waking in early hours of the morning but goes back to sleep	34.1% vs. 40.6%, n.s.
2 = Unable to fall asleep again if he gets out of bed	31.8% vs. 15.6%, 0.137
7. Work and activities:	
0 = No difficulty	22.7% vs. 4.7%, 0.046
1 = Thoughts and feelings of incapacity, fatigue or weakness related to activities, work or hobbies	59.1% vs. 40.6%, n.s.
2 = Loss of interest in activity; hobbies or work — either directly reported by patient, or indirect in listlessness, indecision and vacillation	6.8% vs. 26.6%, 0.009
3 = Decrease in actual time spent in activities or decrease in productivity	11.4% vs. 18.8%, n.s.
4 = Stopped working because of present illness	0% vs. 9.4, n.s.
8. Retardation: psychomotor:	
0 = Normal speech and thought	27.3% vs. 23.4%, n.s.
1 = Slight retardation at interview	65.9% vs. 50.0%, n.s.
2 = Obvious retardation at interview	4.5% vs. 25.0%, 0.005
3 = Interview difficult	2.3% vs. 1.6%, n.s.
4 = Complete stupor	-
9. Agitation:	
0 = None	86.4% vs. 57.8%, 0.001
1 = Fidgetiness	13.6% vs. 40,6%, 0.006
2 = Playing with hands, hair, etc.	0% vs. 1.6%
3 = Moving about, can't sit still	-
4 = Hand wringing, nail biting, hair-pulling, biting of lips	-
10. Anxiety (psychological):	
0 = No difficulty	29.5% vs. 62.5%, .005
1 = Subjective tension and irritability	68.2% vs. 26.6%, .005
2 = Worrying about minor matters	0% vs. 9.4%, n.s.
3 = Apprehensive attitude apparent in face or speech	2.3% vs. 1.6%, n.s.
4 = Fears expressed without questioning	-
11. Anxiety – somatic:	
0 = Absent	52.3% vs. 32.8%, 0.043
1 = Mild	15.9% vs. 42.2%, 0,004
2 = Moderate	27.3% vs. 21.9%, n.s.
3 = Severe	4.5% vs. 1.6%, n.s.
4 = Incapacitating	0% vs. 1.6%, n.s.

Table 1 (continuation)

12. Somatic symptoms (gastrointestinal):	
0 = None	86.4% vs. 57.8%, 0.002
1 = Loss of appetite but eating without encouragement from others.	11.4% vs. 40.6%, 0.001
2 = Difficulty eating without urging from others. Marked reduction of appetite and food intake	2.3% vs. 1.6%, n.s.
13. Somatic symptoms general:	
0 = None	54.5% vs. 40.6%, n.s.
1 = Heaviness in limbs, back or head. Backaches, headache, muscle aches. Loss of energy and fatigability	43.2% vs. 56.3%, n.s.
2 = Any clear-cut symptom rates 2	2.3% vs. 3.1%, n.s.
14. Genital symptoms:	
0 = Absent	84.1% vs. 85.9%, n.s.
1 = Mild	13.6% vs. 14.1%, n.s.
2 = Severe	2.3% vs. 0%, n.s.
15. Hypochondriasis:	
0 = Not present	88.6% vs. 75%, n.s.
1 = Self-absorption (bodily)	11.4% vs. 21.9%, n.s.
2 = Preoccupation with health	0% vs. 3.1%, n.s.
3 = Frequent complaints, requests for help, etc.	-
4 = Hypochondriacal delusions	-
16. Weight loss:	
0 = No weight loss	81.8% vs. 64.1%, 0.045
1 = Probably weight loss associated with present illness	15.9% vs. 34.4%, 0.033
2 = Definite (according to patient) weight loss	2.3% vs. 1.6%, n.s.
17. Insight:	
0 = Acknowledges being depressed and ill	50% vs. 26.6%, 0.013
1 = Acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.	36.4% vs. 62.5%, 0.007
2 = Denies being ill at all	13.6% vs. 10.9%, n.s.
Total score:	
0–7 = Normal	34.1% vs. 18.8%, 0.07
8–13 = Mild Depression	22.7% vs. 28.1%, n.s.
14–18 = Moderate Depression	29.5% vs. 37.5%, n.s.
19–22 = Severe Depression	11.4% vs. 10.9%, n.s.
> 23 = Very Severe Depression	2.3% vs. 4.7%, n.s.

being informed did not depend on whether the patient was or was not under observation by a neurologist. According to our data, patient practice of using AEDs at the same time as alcohol, which can have a negative effect on control over seizures, needs consideration. The study found that the negative physical or emotional impact of seizures is not a factor for the patients to change their alcohol use habits. Most patients described the physician's attitude towards them as good or very good, which shows great potential for mutual collaboration. We can conclude from the AUDIT test that 95.3% of patients with withdrawal seizures only and 77.3% of epilepsy patients with ARS are already alcohol dependent or use a quantity of alcohol that creates a risk of consequences on health or a risk of alcohol dependency. This finding indicates that the existence of ARS should warrant a consultation with a narcologist. The prevalence of depression in our studied population was greater than in data from literature on epilepsy (Jackson and Turkington, 2005; Tellez-Zenteno *et al.*, 2007; Wiegartz *et al*, 1999), but that can be explained by the specific selection of patients with ARS, which does not represent all epilepsy and excessive alcohol use patients. The frequency of depression in the AS+ group compared with the prevalence of it in a regular epilepsy population leads us to think that alcohol use is an additional risk factor in developing depression in epilepsy patients who use alcohol. Even though the frequency of depression did not statistically differ between the study groups, the aspects of depression were different. Depression in epilepsy patients with ARS was characterised by a more frequent feeling of guilt, namely that epilepsy is a punishment. They more often wished they were dead or had thoughts of possible death to self, which was partly described before (Jackson and Turkington, 2005). Sleep disorders and psychomotor retardation were more common in the AS- group.

Among the practical aspects of our research we can stress the necessity for screening of depression and alcohol use disorder in patients admitted with alcohol-related seizures, since the vast majority of this population is affected by both conditions associated with risk of adverse health outcome, suicidality and mortality.

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ALKOHOLA ATKARĪBA UN DEPRESIJA PACIENTIEM AR ALKOHOLA PROVOCĒTĀM LĒKMĒM

Alkohola atkarība un depresija ir nozīmīgi veselības aspekti vispārējā populācijā un epilepsijas pacientiem. Depresija ir epilepsijas biežākā psihiatriskā blakus slimība, kas pasliktina epilepsijas norisi un palielina mirstību. Mūsu klīnikas pieredze liecina, ka trešdaļai no stacionētajiem epilepsijas pacientiem lēkmes ir saistītas ar alkohola lietošanu. Latvijā nav veikti pētījumi par alkohola atkarību un depresiju pacientiem ar alkohola provocētām lēkmēm un epilepsiju. Pētījumā tika iekļauti 108 pacienti ar lēkmēm pēc alkohola lietošanas, no tiem 44 bija zināma epilepsijas diagnoze. 75% pacientu bija atbilstība depresijai pēc Hamiltona depresijas skalas. Tika novērots, ka pacientiem ar lielāku punktu skaitu AUDIT testā ir asociācija ar paškaitnieciskām domām. Pacientiem ar lielāku vienas reizes alkohola patēriņu bija augstāks alkohola atkarības risks. Pacienti bez epilepsijas diagnoses, kam vēroja vienīgi ar alkohola lietošanu saistītas lēkmes, 60% gadījumu saņēma pretepilepsijas līdzekļus, pie kam 17% lietoja pat 2 līdz 3 medikamentus, lai pārvarētu ar alkohola lietošanu saistītas lēkmes. Liela daļa visu pētījuma pacientu iepriekš nebija brīdināti, ka alkohols provocē lēkmes. Pētījuma dati varētu palīdzēt identificēt gadījumus ar palielinātu risku suicidalitātei un alkohola atkarībai pacientiem ar alkohola provocētām lēkmēm, kā arī uzlabot šīs pacientu grupas aprūpi kopumā.