Predictors of severe alcohol withdrawal syndrome in hospitalized patients

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Background and goal of the study: Alcohol addiction is present in up to 20% of hospitalized patients [1] and alcohol withdrawal syndrome (AWS) may often complicate hospitalization course. The goal of this study was to determine predictors of severe AWS course in hospitalized AWS patients. This may decrease incidence of AWS undertreatment as well as overtreatment.

Materials and Methods: 336 patients were admitted to this observational prospective study. Inclusion criteria were as follows: age from 18 to 75 years; a diagnosed state of alcohol withdrawal in accordance with the DSM IV criteria (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition criteria); an informed consent to participate in the study, signed by the patient or his legal representative. Exclusion criteria were as follows: age under 18 and over 75 years; inability to obtain an informed consent from the patient or his legal representative; a state of withdrawal of other psychoactive substances; pregnancy or lactation. Multivariable binary regression models with stepwise selection procedures were conducted providing odds ratio (OR) estimates.

Results: In the multivariable regression, significant predictors of severe AWS were: history of AWS [OR: 29; 95% confidence interval (CI): 14-68; p=0,001]; history of AWS seizures [OR 4; 95% CI: 1,3-16; p=0,008]; history of other psychoactive drugs (e.g. benzodiazepines, opioids) used [OR 3; 95% CI: 1,3-10; p=0,04];

previous alcohol rehabilitation treatment [OR 3; 95% CI 1,8-5; p=0,0001]; tachycardia [OR 5; 95% CI: 3-11; p=0,0001]; thrombocytopenia [OR 3; 95% CI: 1,5-7]; liver cirrhosis class B [OR 8; 95% CI: 1,1-344; p=0,04] or C by Child-Pugh [OR 4; 95% CI: 1,1-21; p=0,03].

Severe AWS predictors, Y/N	Gr. 1 n=200	Gr. 2 n=126	OR (95% CI)	P
Previous AWS	145/200	9/126	29 [14; 68]	p=0,0001
Previous AWS seizures	24/200	4/126	4 [1,3; 16]	p=0,008
History of drug abuse	21/200	5/126	3 [1,3; 10]	p=0,04
Previous alcohol rehabilitation treatment	87/200	25/126	3 [1,8; 5]	p=0,0001
Systolic AP≥160 mm Hg	33/200	15/126	1,4 [0,7; 3]	p=0,42
Pulse≥110 beats/min	72/200	12/126	5 [3; 11]	p=0,0001
Hyperthermia≥38°C	20/200	6/126	2 [0,9; 7]	p=0,097
Saliva alcohol level: 0‰	162/200	103/126	0,95 [0,5;2]	p=0,9
Saliva alcohol level: 0,2‰	20/200	13/126	0,97 [0,4;2]	p=1,0
Saliva alcohol level: : 0,5‰	18/200	10/126	1,2 [0,5;3]	p=0,84
Trombocytopenia<100×10 ³ mk/L	45/200	10/126	3 [1,5; 7]	p=0,001
Liver cirrhosis class A	9/200	3/126	1,9 [0,5; 11]	p=0,5
Liver cirrhosis class B	12/200	1/126	8 [1,1; 344]	p=0,04
Liver cirrhosis class C	18/200	3/126	3,8 [1,1; 21]	p=0,03
Arterial hypertension	24/200	10/126	1,6 [0,7;4]	p=0,27
Chronic Heart Failure, NYHA, class I-II	21/200	12/126	1 [0,5;3]	p=0,85
Diabetes	9/200	4/126	1,4 [0,4;7]	p=0,7
COPD	8/200	5/126	1 [0,3;4]	p=1,0
Obesity	34/200	21/126	1 [0,5;2]	p=1,0

Conclusions: In this large prospective study we determined the predictors of severe AWS course in hospitalized patients: history of previous AWS or AWS seizures, history of other psychoactive drugs (e.g. benzodiazepines, opioids) used, tachycardia (over 110 beats p.m.) or thrombocytopenia (under 100*10³mk/L) on admission, liver cirrhosis class B or C by Child-Pugh. These patients require early hospital admission, careful AWS symptoms assessment and timely start of symptom triggered therapy.

References:

1. Rayner SG, Weinert CR, Peng H, Jepsen S, Broccard AF. Dexmedetomidine as adjunct treatment for severe alcohol withdrawal in the ICU. Ann Intensive Care 2012; 2(1):12.