

## Letter to the Editor

# Impact of Cognitive Deficits in Patients with Cirrhosis and Alcoholic Hepatopathy after Reduction in Alcohol Intake

Donadon MF<sup>1</sup>, Hallak JEC<sup>2</sup> and Osório FL<sup>1\*</sup><sup>1</sup>Department of Neuroscience and Behavior, University of São Paulo, Brazil<sup>2</sup>National Institute for Translational Medicine, Brazil**DEAR EDITOR,**

The excessive use of alcohol is known to favor the occurrence of specific neurocognitive deficits affecting psychomotricity, executive and visuospatial functions like memory, and social cognition [1,2]. In addition, facial emotion recognition (FER), which is in the domain of social cognition, is a key process in social functioning that also seems to be affected by the excessive use of alcohol [3-5].

In a recent study, we assessed for the first time a sample of active alcoholics and found the same global deficits already reported in respect to alcoholics in abstinence or detoxification, as well as specific deficits that appeared as risk factors for the alcohol dependence, considering that alcohol dependence has a direct association with clinical hepatic conditions [6] and that dependence itself may cause alterations in different cognitive functions. Hepatic encephalopathy, for example, causes a number of alterations and deficits in the CNS that can be reversed in cases of successful treatment or liver transplant [7,8].

Based on the sample of subjects with alcohol dependence assessed in our previous study we investigated the associations between FER and different clinical variables including the duration and quantity of alcohol intake and the type of liver disease. From 110 subjects assessed and diagnosed through the Structured Clinical Interview of the Diagnostic and Statistical Manual of Mental Disorders (SCID-IV), 77.35% (n=85) of patients with alcohol dependence had a diagnosis of cirrhosis of the liver and 22.7% (n=25) had alcoholic hepatopathy.

We found that patients with cirrhosis of the liver had a better performance in different parameters of the FER test compared to those with alcoholic hepatopathy, namely, shorter total reaction time ( $p < 0.01$ ), and increased recognition accuracy ( $p = 0.003$ ), especially for sad ( $p = 0.09$ ) and fearful ( $p = 0.01$ ) expressions. Conversely, we found that the mean alcohol intake was lower in subjects with cirrhosis ( $X = 7.46$ ;  $SD = 4.76$ ) compared to patients with alcoholic hepatopathy ( $X = 8.24$ ;  $SD = 3.82$ ), although these differences were not statistically significant ( $U = 914.50$ ;  $p = 0.28$ ), possibly because of the sample size.

**\*Corresponding author**

Flávia de Lima Osório, Department of Neuroscience and Behavior, University of São Paulo, Avenida dos Bandeirantes 3900, Ribeirão Preto, São Paulo, CEP 14048-900, Brazil, Tel: 551636022837; Email: flaliosorio@ig.com.br

Submitted: 17 November 2015

Accepted: 29 March 2016

Published: 01 April 2016

**Copyright**

© 2016 Osório et al.

**OPEN ACCESS**

This finding is quite interesting if we consider the existing literature, since individuals with cirrhosis tend to have greater impairments in cognitive function in relation to patients with alcoholic hepatopathy, as the latter is a less severe clinical condition [9-11]. Conversely, it is noteworthy that this group of patients with liver cirrhosis who have better performance tend to use less quantities of alcohol.

Our interpretation was that alcohol hepatotoxicity, due to causing structural and functional alterations in the liver that include a decrease in enzymes that metabolize alcohol, favors lower intake rates [12,13]. This reduction in alcohol intake (although not statistically significant) may have had a positive effect on the performance of the FER task, suggesting the possibility of the reversal of cognitive impairments even in the presence of a chronic liver disease.

We believe that studies involving larger samples of patients with different liver diseases are opportune and may lend support to the findings presented. Important data could be provided through the assessment of additional clinical indicators (such as intellectual level and hepatotoxicity), as well as by cohort studies making longitudinal assessments of performance in FER tasks as a function of alcohol intake and the evolution of liver conditions.

**REFERENCES**

1. Harkness KL, Jacobson JA, Duong D, Mark A, Sabbagha. Mental state decoding in past major depression: Effect of sad versus happy mood induction. *Cognition and Emotion*. 2010; 24: 497-513.
2. Pollak SD, Sinha P. Effects of early experience on children's recognition of facial displays of emotion. *Dev Psychol*. 2002; 38: 784-791.
3. Townshend JM, Duka T. Mixed emotions: alcoholics' impairments in the recognition of specific emotional facial expressions. *Neuropsychologia*. 2003; 41: 773-782.
4. Foisy ML, Kornreich C, Petiau C, Perez A, Hanak C, Verbanck P, et al. Impaired emotional facial expression recognition in alcoholics: are these deficits specific to emotional cues? *Psychiatry Res*. 2007; 150: 33-41.
5. Uekermann J, Daum I. Social cognition in alcoholism. *International*

- Journal on Disability and Human Development. 2007; 6: 143-148.
6. Teodoro V, Bragagnolo Jr M, Lucchesi L, Kondo M, Tufik S. Evaluation of the event-related potential (ERP-P300) in patients with hepatic cirrhosis without encephalopathy. *Arq Gastroenterol.* 2008; 45: 82-86.
  7. Thomson AD, Marshall EJ. The natural history and pathophysiology of Wernicke's Encephalopathy and Korsakoff's Psychosis. *Alcohol Alcohol.* 2006; 41: 151-158.
  8. Butterworth RF. Pathophysiology of alcoholic brain damage: synergistic effects of ethanol, thiamine deficiency and alcoholic liver disease. *Metab Brain Dis.* 1995; 10: 1-8.
  9. Lida VH, Silva TJ, Silva ASF, Silva LFF, Alves VAF. Cirrhosis: morphological aspects related to its complications . A study focused on necropsies. *J BrasPatolMed Lab.* 2005; 41: 29-36.
  10. Mattarozzi K, Stracciari A, Vignatelli L, D'Alessandro R, Morelli MC, Guarino M. Minimal hepatic encephalopathy: longitudinal effects of liver transplantation. *Arch Neurol.* 2004; 61: 242-247.
  11. Saxena N, Bhatia M, Joshi YK, Garg PK, Dwivedi SN, Tandon RK. Electrophysiological and neuropsychological tests for the diagnosis of subclinical hepatic encephalopathy and prediction of overt encephalopathy. *Liver.* 2002; 22: 190-197.
  12. Maciel C, Kerr-Corrêa F. Psychiatric complications of alcoholism: alcohol withdrawal syndrome and other psychiatric disorders. *Rev Bras Psiquiatr.* 2004; 26: 47-50.
  13. De Faria SC, Junior ADFG, Diniz GAAG. Alcoholic cirrhosis. *Electronic Journal Faculty Montes Belos.* 2014; 7.

#### Cite this article

Donadon MF, Hallak JEC, Osório FL (2016) Impact of Cognitive Deficits in Patients with Cirrhosis and Alcoholic Hepatopathy after Reduction in Alcohol Intake. *J Subst Abuse Alcohol* 4(2): 1047.