



# LISBON ADDICTIONS 2019

636 - Alcohol Related Brain Damage and its relation to deshabituacion treatment response  
ARBD: Evolution and response to treatment based on  
cognitive variables

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What happens after 6 months?  
Besides loosing sample ( $n = 100$ )

# Alcohol Use Variables

	<b>Basal (DS)</b>	<b>6 meses (DS)</b>	<b>P</b>
UBEs	9,267 (5,899)	2,139 (4,299)	<0,001
GOT	39,63 (25,99)	29,54 (21,67)	0,002
GPT	37,92 (20,56)	28,41 (12,65)	<0,001
GGT	135,1 (174,3)	82,0 (135,6)	0,001
MCV	94,825 (6,431)	91,126 (7,752)	<0,001
BIS11 Cognitive	17,772 (7,976)	16,000 (5,557)	0,013
BIS11 Motor	16,267 (6,937)	15,822 (5,989)	0,531
BIS11 Non planned	19,584 (8,524)	18,663 (7,293)	0,22
BIS11-TOTAL	53,85 (19,86)	50,54 (15,80)	0,044
OCDS Obsessive	6,248 (4,803)	2,950 (3,853)	<0,001
OCDS Compulsive	10,535 (4,437)	3,851 (4,328)	<0,001
OCDS TOTAL	16,772 (8,082)	6,901 (7,867)	<0,001

And what about the cognitive evaluation, comparing patients (basal vs 6 months)?

<b>Neuropsychological test</b>	<b>Main function evaluated</b>	<b>Characteristics</b>
Symbol search (from WAIS-III)	Processing speed ( <b>IQ</b> )	Measures the ability to quickly identify the presence of figures in a series. Non verbal.
Arithmetic (from WAIS-III)	Abstract reasoning ( <b>IQ</b> )	Measures the mental solving of arithmetic problems given a time limit. Verbal.
Attention Test D2	Sustained attention / inhibition of response ( <b>Attention</b> )	Measures the ability to focus on relevant visual stimuli and ignore irrelevant ones. Non verbal.
California Verbal Learning Test (CVLT)	Immediate recall, deferred and identification ( <b>Memory</b> )	Measures the ability to remember lists of words over several attempts, with and without interference. Verbal
Digit Symbol (from WAIS-III)	Working memory ( <b>Memory</b> )	Measures speed in converting numbers into symbols according to an established sequence. Non verbal.
Digit Span (from WAIS-III)	Short-term memory ( <b>Memory</b> )	Measures the ability to remember and follow a sequence of numbers. Verbal.
FAS and semantic category of animals	Verbal fluency ( <b>executive function</b> )	Measures the ability to generate word lists by categories. Verbal.
Stroop Test (SCWT)	Divided attention and interference resistance ( <b>Executive function</b> )	Measures the ability for color recognition. Non verbal.
Wisconsin Card Sorting Test (WCST)	Abstract Reasoning and Cognitive Flexibility ( <b>Executive Function</b> )	Measures the ability to select cards based on categories. Non verbal.
Iowa Gambling Test (IGT)	Decision making and cognitive flexibility ( <b>executive function</b> )	Measures the ability to select stimuli based on short and long term rewards. Non verbal.
Implicit Association Test (IAT)	Implicit attitude to a stimulus ( <b>Automatic processing</b> )	Measures speed of matching words based on implicit attitudes related to alcohol. Non verbal.

And patients (6-months) versus  
normal population?

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To sum up, patients improve in a significant way their anterograde memory, their working memory and their resistance to interference. Though, they do not manage to improve enough in these tests to match the normal population. As expected, after 6 months of treatment, we still find the consequences of ARBD.



Why do patients improve?

# Just learning?



# A reduction in Alcohol use?

- UBEs: Arithmetic, Digit Spam, WCST, BIS-11.
- GOT: Arithmetic.
- GPT: None.
- GGT: Arithmetic, Digit Spam.
- MCV: BIS-11, SCWT, Symbol Search, Arithmetic, Digit Spam, WCST.
- OCDS: BIS-11, SCWT, Verbal Fluency, Symbol Search, Arithmetic, Digit Spam, WCST, D2.

# An impulsivity reduction?

- BIS: SCWT, Verbal Fluency, WCST, IAT.

Data shows a trend: there is a small but significant cognitive improvement related to a reduction in alcohol use and impulsivity. It might be possible that memory improvement is due to learning.

Is answer to treatment influenced  
by cognitive functioning?

# A mirror image

- UBE: IGT.
- Liver tests: None.
- MCV: SCWT, Verbal Fluency, Symbol Search, Digit Symbol, Arithmetic y Digit Spam.
- OCDS: SCWT, Verbal Fluency, Digit Symbol, Digit Spam y WCST.
- BIS-11: SCWT, Verbal Fluency, Digit Spam y WCST.

Once again, data shows a trend: Executive Function, Verbal Fluency and Working Memory are the cognitive functions that in a more significant way influenced Alcohol use and Impulsivity reduction.



# Conclusions

- ARBD is present in out-patients that seek alcohol reduction treatment.
- In these patients ARBD is an important variable when considering Alcohol use and Impulsivity reduction during treatment.
- After six months of treatment we find a small but significant improvement in some of the cognitive functions.
- This improvement seems to be related to a reduction in Alcohol use and Impulsivity.
- MCV, OCDS y BIS-11 were the best variables for measuring the relation between alcohol dependence and cognitive function.

## Cognitive functioning in patients with alcohol use disorder who start outpatient treatment

### *Funcionamiento cognitivo en pacientes con trastorno por uso de alcohol que inician tratamiento ambulatorio de deshabituación alcohólica*

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## Clinical implications of cognitive impairment and alcohol dependence

### *Deterioro cognitivo y dependencia alcohólica, implicaciones clínicas*

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**THANK YOU FOR  
YOUR ATTENTION!**

