Modification of Cue-Reactivity by Neurofeedback in Alcohol Use Disorder

Deutscher Suchtkongress 2019 Mainz, 16.09.2019
Model of common neural mechanisms for Alcohol Use Disorder treatments from Naqvi & Morgenstern (2015)
rtfMRI Neurofeedback Setup
rtfMRI Neurofeedback Task
Results of a VS neurofeedback training on brain activation during presentation of alcohol cues in heavy social drinkers (Kirsch et al., 2016)
Results of a VS neurofeedback training on brain activation during presentation of alcohol cues in heavy social drinkers (Kirsch et al., 2016)
Experimental groups

Ventral Striatum ↓
right IFG ↑
Auditory Cortex ↑ (Control)
Auditory Cortex ↓ (Control)
Study Design

Recruitment > Randomization > Clinical Assessment > MRI 1

MRI 2 > MRI 3

Follow-up 3 Months > Follow-up 2 Months > Follow-up 1 Month

in person > by phone > by phone > in 2 weeks

MPRAGE Resting State Neurofeedback 1
Neurofeedback 2 Transfer Run 1
MPRAGE Resting State Neurofeedback 3
Neurofeedback 4 Neurofeedback 5
MPRAGE Resting State Neurofeedback 6
Neurofeedback 7 Transfer Run 2
Neurofeedback effect on neural activation during cue-reactivity regulation

VS Contrast Estimates

rIFG Contrast Estimates

Group

16.09.2019
Patrick Halli | Clinical Psychology
Change in self-reported craving measures over NFB sessions

How strong is your desire for alcohol?
How strong is your wish not to drink alcohol?

**Change in self-report pre-post NFB session**

**How strong is your desire for alcohol?**

**How strong is your wish not to drink alcohol?**

16.09.2019  Patrick Halli  | Clinical Psychology
Descriptive presentation of preliminary follow-up data

Ratio of drinking days during follow-up periods

Days until first severe relapse or last contact

- **Ventral Striatum**: Up
- **right IFG**: Up
- **Auditory Cortex**: Up (Control)
- **Auditory Cortex**: Down (Control)
Refine Procedure
Refine Treatment Protocol
Preliminary Results
Conclusion

Follow-Up promising

Regulate Cue-Reactivity

Reduce Acute Craving
Thank you for your attention

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