

**Aim** To explore if emotional instability is a useful construct in adults with autism spectrum disorder (ASD) and intellectual disability (ID).

**Method/approach** The current diagnostic criteria for ASD and ID will be outlined and related to any relevant literature on emotional instability in those with ASD or ID. Recent cross-sectional studies in a clinic and a prison of adults with ASD and/or ID using standardised screening and diagnostic tools will be described.

**Findings** Current literature indicates there is little research on emotional instability in adults with ASD and ID. Studies across clinic and forensic settings indicate high levels of comorbidity such as attention-deficit hyperactive disorder (ADHD) and mood disorders in adults with ASD and ID.

**Conclusion** At present emotional instability as a construct may not have validity for adults with ASD and ID but may do in the context of other comorbid conditions such as ADHD.

**Disclosure of interest** The author has not supplied his declaration of competing interest.

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## Thought and language disorders: Phenomenology and neural pathophysiology

### S107

#### How increasing the effect of rTMS in the treatment of auditory hallucinations in schizophrenia?

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Repetitive transcranial magnetic stimulation (rTMS) shows a high inter-subjects variability in the efficacy of treatment of auditory verbal hallucinations (AVH) in schizophrenia. The aim of this presentation is to demonstrate the involvement of several factors in the efficacy of rTMS such as the frequency of stimulation, the placebo effect and the brain morphology underlying the target of stimulation.

**Methods** A meta-analysis was conducted to determine the effect sizes of placebo effect in 21 controlled studies on rTMS in the treatment of AVH in schizophrenia. MRI was also acquired in patients treated by rTMS to evaluate the scalp to cortex distances (SDCs) and the gray matter densities (GMDs) at the target of stimulation. Finally, we evaluated the efficacy of high (20 Hz) frequency stimulation in a controlled placebo study.

**Results** Weak or no placebo effect in the control groups led to reveal a superiority of active rTMS over sham rTMS in the treatment of AVH. Clinical efficacy of rTMS was also correlated with the SCD or the GMD at the region of the target stimulation. Finally, we also demonstrated that more responders were observed after 2 weeks in the active group treated by 20 Hz than in the placebo group.

**Conclusion** We clearly demonstrated that several factors such as high frequency, the placebo effect, anatomical cortical variations can impact on the efficacy of rTMS. These results fundamentally inform the design and the method of further controlled studies, particularly with respect to studies of rTMS in the treatment of AVH.

**Disclosure of interest** The authors have not supplied their declaration of competing interest.

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### S108

#### Phenomenology and neural correlates of formal thought disorder

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Speech and language disorders, such as concretism and formal thought disorder (FTD) are core symptoms of Schizophrenia, but do occur to a similar extent in other diagnoses such as bipolar disorder and major depression. We will review clinical rating scales of FTD and introduce a new, validated scale, the TALD. Further, structural and functional brain imaging data will be reviewed and own novel findings presented, relating speech and language dysfunctions to neural networks, within schizophrenia and across the “functional psychoses”. The impact of genetic variance and NNDA receptor blockage on brain function will be addressed with a particular focus on speech and language (dys-) function. We demonstrate, from the genetic to the brain structural and functional level, that particular aspects of the neural language system are disrupted in patients with FTD across traditional diagnoses.

**Disclosure of interest** The author has not supplied his declaration of competing interest.

**Further reading**

Kircher T, Krug A, Stratmann M, Ghazi S, Schales C, Frauenheim M, et al. A rating scale for the assessment of objective and subjective formal Thought and Language Disorder (TALD). *Schizophr Res* 2014;160(1–3):216–21.

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### S109

#### Language, psychosis and the brain: Novel insights from a dimensional approach

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The brain mechanisms related to formal thought disorders (FTD) and auditory verbal hallucinations (AVH) appear to be closely linked to structural and functional abnormalities of the language system.

In particular, functional imaging data indicate that several components of the language system are involved in the generation of both, FTD and AVH. Co-activation of the primary auditory cortex (Heschl's gyrus) during verbal thoughts appears to be crucial for the subjective perception of an externally generated voice, and DTI studies indicated that the intrahemispheric fronto-temporal connectivity of the language system is specifically increased in hallucinating patients. On the other hand, FTD are significantly correlated to a gray matter reduction in Wernicke's region along with a hyperactivation of frontal and temporal components of the language system.

AVH are intimately related to a dysfunction of the left hemispheric language system, including the primary auditory cortex and the fronto-temporal fibre tracts connecting Broca's and Wernicke's regions. Co-activation of the primary auditory cortex during verbal thoughts appears to be the basis of the pathological network dynamics during AVH, while FTD are linked to a pathological hyperactivity of central components of the language system. Both phenomena are related to functional imbalances of the language system, and phenomenological differences may depend on the different contributions of the system components.

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