

Results EEG power analysis showed that FTD group had increased frontal and temporal theta as compared to the BD group. There were no consistent group differences for other bands.

Conclusion Based on this result we conclude that quantitative EEG may help differentiating BD from FTD and may eliminate diagnostic uncertainty.

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

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EV0692

The effects of medication on default mode network (DMN) connectivity in attention deficit/hyperactivity disorder (ADHD): Bibliographic review

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Introduction ADHD is a neurodevelopmental disorder comprising brain structural and functional alterations, especially in default mode network (DMN), as MRI studies have recently shown. However, it is not clear in which extent medication for ADHD may influence the activity of these networks.

Objectives The main purpose is to look up published evidence about the effects of ADHD medication on the connectivity of DMN in patients as measured with functional-MRI.

Methods A review was conducted with Pubmed, using search terms 'default mode network'+ 'ADHD'+ 'medication'/'methylphenidate'/'atomoxetine'/'stimulant'/'lisdexanfetamine'. Original research studies in English using f-MRI to assess DMN connectivity in ADHD patients were included in a more comprehensive review.

Results The searches found 124 articles, 8 meeting the review criteria. A total size of 146 ADHD patients was comprised (mean size: 18.25 patients). Three studies used specific resting-state f-MRI. Seven were drug trials, 3 of them short-term, randomized and controlled ones. Six included methylphenidate, 2 atomoxetine, 1 lisdexanfetamine and 3 amphetamines. Two also assessed drugs clinical effects. Evidence seems heterogeneous, but mostly consistent with normalizing drug effects on DMN in patients (in some studies also compared with healthy controls), associated with a measured clinical improvement in one study with amphetamines and one with atomoxetine. One trial found little differences on DMN activity.

Conclusions Psychostimulant drugs and atomoxetine are clinically effective medications; DMN connectivity may partially explain their action mechanisms and constitute a potential response predictor. Further f-MRI studies might more deeply assess the imaging-clinical relationships for each drug.

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

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Dynamic of NAA and BOLD after single short stimulus in motor cortex of Schizophrenia patients

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Introduction The aim of this study was the analysis of dynamics of motor cortex metabolite in the norm and in early stage of schizophrenia in period of BOLD response to event related single stimulus.

Objectives The patients group consisted of 9 mails of 16–28 years old in initial stage of schizophrenia and in remission. The group of 9 age matched healthy mails was used as a control.

Methods Phillips Achieva 3.0T scanner was used for the study. Volume of interest in motor cortex was localized on the base of fMRI. 1H MR spectra were run using synchronization of FID signals acquisition (PRESS, TE = 30 ms TR = 3000 ms) with dynamics of BOLD response at the same paradigm.

Results The BOLD signal in both groups demonstrated maximum at the 6th s after target stimulus, however its value was reliably lower in schizophrenia in comparison with the control. The only [NAA] in normal motor cortex was changed after stimulation. The stable values of [NAA], [Cr] and [Cho] were observed in dynamic of resting state as well. [NAA] in normal cortex statistically significantly decreased at the 12th s after stimulus presentation and returned to initial value at the 15th s.

Conclusion Different behavior of [NAA] in the norm and schizophrenia might be related with a difference in location (or activity) of aspartoacylase (ASPA). Decreased expression of glutamate transporters in schizophrenia could also reduce consumption of NAA as a source of acetate in synthesis of AcCoA which is used for restoration of ATP.

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

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Normal pressure hydrocephalus as a possible reversible cause of dementia, neuroimaging findings

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Introduction Normal pressure hydrocephalus (NPH) occurs in 0.5% of persons over 65 years old. The etiology of NPH is still unknown. Clinically NPH is characterised by cognitive deterioration, gait impairment and urinary incontinence. NPH is a possible reversible cause of dementia. Neuroimaging techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) allow to assess typical brain changes in this disorder.

The objectives are to present the typical findings of NPH on CT and MRI and to demonstrate differences between NPH and central brain atrophy in neuroimaging.

Results The imaging features of NPH include: supratentorial ventriculomegaly with callosal angle less than 90°, tight sulci at the vertex and considerable out of proportion enlargement of Sylvian fissures. In case of central brain atrophy there may be a predominance of ventriculomegaly and/or widened sulci without crowding of the gyri at the vertex and callosal angle greater than 90°. In both entities, the decrease of density in periventricular region may be seen: in NPH could be a sign of transependymal oedema or in brain atrophy as an accompanying leukoaraiosis. Additionally, it is possible to assess changes in flow of cerebrospinal fluid (CSF) on MRI: in NPH an increased pulsatile CSF circulation in aqueduct as flow void sign may be observed.

Conclusions Correct diagnosis of NPH on CT or MRI in relation to clinical data is very important. Treatment with ventriculoperitoneal shunt or third ventriculostomy may partially improve the