increased VMHC in middle frontal gyrus (MFG) and caudate nucleus when compared remitted depression (RD) group to unremitted depression (URD) group. Meanwhile, when compared with NC group, the URD group presented reduced VMHC in bilateral cerebellum anterior lobe, thalamus and postcentral gyrus. Furthermore, the VHMC in media frontal gyrus, postcentral gyrus and precentral gyrus were significantly decreased in RD group. Correlation analysis suggested that reduced VMHC in bilateral pCu was negatively correlated with the baseline HAMD score of URD ($r = -0.325$, $P = 0.041$). Receiver operating characteristic (ROC) curve indicated that three regional VMHC changes could identify depressed patient with poorer treatment response: ITG [area under curve (AUC) = 0.699, $P = 0.002$, 95% CI = 0.586–0.812], MFG (AUC = 0.692, $P = 0.003$, 95% CI = 0.580–0.805), pCu (AUC = 0.714, $P = 0.001$, 95% CI = 0.603–0.825).

Conclusion The current study combined with previous evidence indicates that the subdued intrinsic interhemispheric functional connectivity might represents a novel neural trait involved in the pathophysiology of MDD.

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

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FC45

Alteration in creatine phosphate behavior in excited visual cortex of early-stage schizophrenia patients measured by phosphorus magnetic resonance spectroscopy

A. Manzhurtsev[1,*], N. Semenova[1,2,3], M. Ublinskiy[1,3], T. Akhadov[3], S. Varfolomeev[1], I. Lebedeva[4], V. Kaleda[4]

[1] *Emanuel Institute of Biochemical Physics of Russian Academy of Sciences, 501 Enzime catalysis kinetics, Moscow, Russia*

[2] *Semenov Institute of Chemical Physics of Russian Academy of Sciences, 0404 Chemical and biological processes dynamics, Moscow, Russia*

[3] *Research Institute of Children's Emergency Surgery and Trauma, Radiology, Moscow, Russia*

[4] *Mental Health Research Center State Scientific Institution, Neurovisualisation and Multimodal Analysis, Moscow, Russia*

[*] *Corresponding author.*

Introduction 31P MRS is a unique way of in vivo energy metabolism research. This method allowed revealing schizophrenia-induced disturbances of energy exchange in resting state [1]. We use 31P MRS in presence of visual stimulation that allows neuronal energy-consuming processes studying.

Objective Revealing of stimulation effects on high-energy phosphates (PCr, ATP) in early-stage schizophrenia.

Aim Discovery of energy processes contribution in schizophrenia pathogenesis.

Methods Twelve right-handed 18–26 years old male patients with early-staged schizophrenia (F20, ICD-10) and 20 age-matched healthy right-handed controls. Spectra were acquired on Philips Achieva 3.0 T using Rapid Biomed 31P/1H birdcage coil and 2D ISIS pulse sequence. fMRI was used for accurate 2D slice positioning, spectroscopy voxels containing primary visual cortex (V1) were averaged (see Fig. 1). Two 31P spectra of V1 were obtained: firstly in resting state and then during 6 minutes of continuous stimulation by 6 Hz flashing checkerboard. Spectra were processed in jMRUI.

Results Excitation reduced PCr in the norm and had no effect on schizophrenia (see Fig. 2). No excitation-induced ATP changes in both groups were revealed.

Conclusion Alteration in PCr behavior in this study witnesses for deviations in energy-consuming processes in schizophrenia. A new scheme of neuronal response to stimulation in schizophrenia is offered.

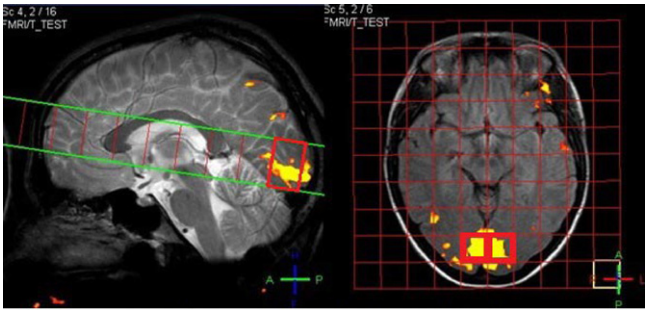

Fig. 1 fMRI-guided voxel positioning in visual cortex.

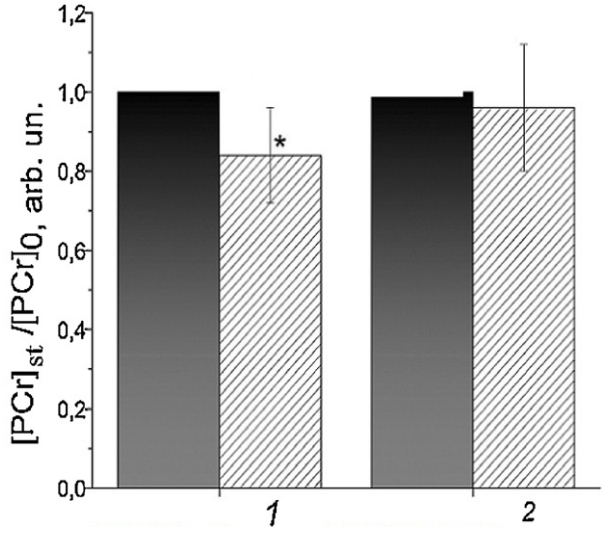

Fig. 2 PCr of visual cortex in the norm (1) and in schizophrenia (2) during continuous stimulation relative to PCr in resting state. * $P < 0.05$ by Mann-Whitney U-criteria.

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

Reference

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FC46

Trimodal approach (PET/MR/EEG) of response inhibition as a possible biomarker for schizophrenia

C. Wyss[1,*], K. Heekeren[1], A. Del Guerra[2], N.J. Shah[3], I. Neuner[3,4], K. Wolfram[1]

[1] *University Hospital of Psychiatry Zurich, Department for Psychiatry, Psychotherapy and Psychosomatics, Zurich, Switzerland*

[2] *University of Pisa, Department of Physics "E. Fermi", Pisa, Italy*

[3] *Research Centre Jülich, Institute of Neuroscience and Medicine-INM-4, Jülich, Germany*

[4] *RWTH Aachen University, Department of Psychiatry, Psychotherapy and Psychosomatics, Aachen, Germany*

[*] *Corresponding author.*

Introduction The aim of the FP7-European funded project TRIMAGE is to create a trimodal, cost-effective imaging tool consisting of PET/MR/EEG to enable effective early diagnosis of schizophrenia.

Objective In the scope of this project we are interested in the multimodal assessment of response inhibition. The loudness