

EPP0795

Resting state fMRI connectivity of amygdala and hippocampus in women with breast cancer prior to chemotherapy.

A. D’Imperio^{1*}, C. Sicuso², M. Fiorelli¹ and C. Mainero³

¹Department Of Human Neuroscience, Sapienza University of Rome, Roma, Italy; ²Department Of Radiology, Humanitas Clinical ad Research Center, Rozzano, Italy and ³Athinoula A.martinos Center For Biomedical Imaging, Massachussetts General Hospital, Charlestown, United States of America

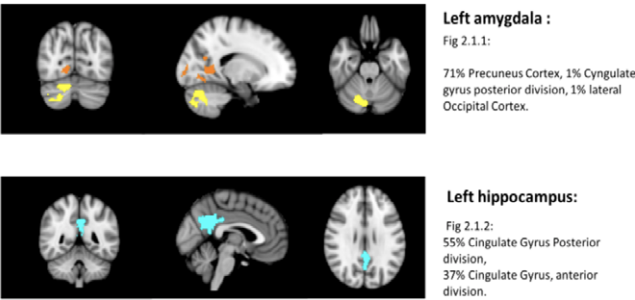
*Corresponding author.
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Introduction: Cognitive complaints and psychological distress are common in oncologic patients, in particular many studies have focused on women with breast cancer. Patients presenting the phenomenon of “chemofog” show changes after chemotherapy with regard to memory and emotional regulation.

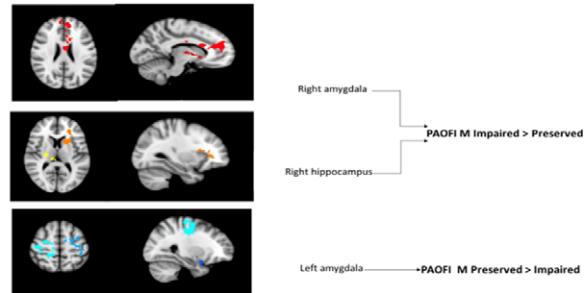
Objectives: To explore brain connectivity prior to chemotherapy that nevertheless, is understudied.

Methods: We used fMRI to investigate the resting state connectivity in 24 patients before chemotherapy and 15 controls. Patients were assessed with self-administered questionnaires, such as the Patient’s Assessment of Own Functioning Inventory (PAOFI) that quantifies the decrease in perceived functioning in memory, language and problem solving (Image 1). We used a preliminary structural analysis in order to choose which neuropsychological test was affected in correlation with a significant anatomical volume alteration, as showed in the p-value table. Therefore, patients were ranked and divided into two groups of “Impaired vs Preserved”, measured using the median of the questionnaire results. Higher scores indicate a poor cognitive self-perceived performance.

PATIENTS VS CONTROLS, group analysis results: Yellow to red contrast for clustermask number 1 and higher connectivity pattern; Light blue to blue contrast for clustermask number 2 and lower connectivity pattern.



PAOFI M IMPAIRED vs PRESERVED , group analysis results: Yellow to red contrast for clustermask number 1 and higher connectivity pattern; Light blue to blue contrast for clustermask number 2 and lower connectivity pattern.



Results: Connectivity was altered in amygdala and hippocampus, in the subgroup of patients with higher subjective cognitive complaints i.e with a high PAOFI Memory score. More specifically, we found an association between memory impairment and the increase of the resting state connectivity of both right structures, as opposed to a reduction in left amygdala (Image 3).

ANATOMICAL STRUCTURES

A significant p-value is found for both amygdala and hippocampus volumes

Correlations (p values)	Cortical thickness	Thalamus	Hippocampus	Amygdala
Cognitive index	0.378 (0.033)	0.525 (0.002)	0.340 (0.057)	0.130 (0.480)
Beck Depression Index	0.118 (0.321)	-0.232 (0.263)	-0.056 (0.790)	-0.306 (0.137)
Impact of event scale	-0.044 (0.845)	-0.013 (0.954)	-0.141 (0.533)	-0.191 (0.306)
Multiple fatigue scale	0.394 (0.047)	-0.175 (0.393)	0.208 (0.308)	0.048 (0.817)
STAI state	-0.305 (0.139)	-0.368 (0.070)	-0.464 (0.020)	-0.333 (0.104)
STAI trait	0.018 (0.930)	0.137 (0.514)	0.029 (0.880)	0.308 (0.134)
PAOFI memory	0.034 (0.868)	-0.124 (0.548)	-0.590 (0.002)	-0.396 (0.045)
PAOFI language	0.042 (0.837)	-0.148 (0.460)	-0.344 (0.085)	-0.116 (0.573)
PAOFI sensory	-0.112 (0.586)	-0.299 (0.138)	-0.001 (0.995)	-0.134 (0.514)
PAOFI executive	-0.011 (0.957)	-0.302 (0.133)	-0.317 (0.115)	-0.370 (0.063)
PSQI	0.234 (0.283)	-0.162 (0.461)	-0.200 (0.361)	-0.173 (0.431)

Conclusions: These findings may suggest a potential effect on brain functional connectivity of the psychological awareness and stress of cancer itself. We found connectivity alterations for both amygdala and hippocampus, two structures belonging to the limbic system, that is involved in the interplay between cognition and emotions, such as anxiety and fear.

Keywords: Resting state fMRI; amygdala and hippocampus connectivity; PAOFI-Memory; subjective cognitive impairment

EPP0795

Psychiatric manifestations of huntington’s disease: Two case reports

D. Göy*, Ö. Şahmelikoğlu Onur and N. Karamustafalıoğlu
Psychiatry, Bakirkoy Research & Training Hospital for Psychiatry, Neurology and Neurosurgery, İstanbul, Turkey
*Corresponding author.
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Introduction: Huntington’s disease (HD) is a progressive neuro-psychiatric and degenerative disorder that shows an autosomal dominant inheritance pattern. The principal symptoms of HD are progressive movement disorders, cognitive deterioration, dementia, and certain psychiatric manifestations, which may occur in many different forms, such as depression, psychosis, personality changes.

Objectives: In this presentation, two female HD patients with psychotic components complicated with suicidal and homicidal thoughts will be reported to better illustrate psychiatric components of HD.

Methods: Hospitalization records of these two patients with genetically verified HD diagnosis indicated that their psychiatric health precipitously deteriorated in the last decade.

Results: While the first patient suffered from severe depression, anxiety, suicidality; persecution ideas, suspiciousness, hostility were noted more prominently in the latter. Moreover, both cases had a positive family history for psychiatric diseases which is one of the

hallmarks of HD. Anti-psychotic drug olanzapine, which has minor side-effects on EPS, was found to be highly effective on our HD patients, alleviating the behavioral and psychiatric symptoms of the disease.

Conclusions: In conclusion, HD should be one of the differential diagnoses if patients with psychiatric complaints have accompanying neurological findings such as movement disorders and impaired memory, and great attention should be paid to the extrapyramidal system (EPS) sensitivity of the chosen treatment regime when treating the HD patients,

Keywords: Huntington's Disease; bipolar disorder; Depression; Movement Disorder

EPP0797

A surface-based morphometry study of risk and resilience markers associated with supramarginal thickness in schizophrenia

A. Tomyshv^{1*}, M. Omelchenko², V. Kaleda³ and I. Lebedeva¹

¹Laboratory Of neuroimaging And Multimodal Analysis, FSBSI Mental Health Research Center, Moscow, Russian Federation; ²Department Of Youth Psychiatry, FSBSI Mental Health Research Center, Moscow, Russian Federation and ³Department Of Endogenous Mental Disorders, FSBSI Mental Health Research Center, Moscow, Russian Federation

*Corresponding author.

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Introduction: Conventional structural neuroimaging methods can identify changes in cortical thickness but cannot relate these changes to specific cortical layers due to a lack of sensitivity. However, several indirect measures sensitive to changes specifically occurring in supragranular cortical layers were developed recently (github.com/kwagstyl/schizophrenia_gyralsulcal).

Objectives: The aim was to assess the ability of these novel measures to detect cortical layers thickness characteristics potentially associated with risk or resilience to developing schizophrenia.

Methods: 43 first-episode schizophrenia (FES) male patients, 29 non-converted individuals at ultra-high risk of psychosis (ncUHR, mean follow-up period – 6.5 years), and 43 matched healthy controls (HC) underwent structural MRI at 3T Philips scanner. Images were processed via FreeSurfer and MATLAB to derive two markers specific to supragranular thickness change: gyral-sulcal thickness differences (GSTD) and gyral-sulcal intrinsic curvature differences on pial surface (GSCD).

Results: GSCD measures were increased in temporal, parietal and occipital cortices, whereas both GSTD and GSCD were increased in the right frontal cortex in FES compared to HC. No GSTD or GSCD were changed in ncUHR compared to HC, and GSCD was decreased in the frontal cortex compared to FES.

Conclusions: Our findings from the indirect measures indicate a potential predominance of supragranular thinning in FES and suggest that a supragranular thinning in the right frontal lobe might be associated with precipitating risk and/or illness effects of schizophrenia. At the same time, no clear supragranular markers directly associated with resilience or risk mechanisms were identified. The work was supported by RFBR grant 20-013-00748.

Keywords: schizophrenia; Supragranular thinning; Ultra-high risk of psychosis; Risk and resilience

EPP0800

Neuropsychiatric symptoms as first manifestation of olfactory groove meningioma - importance of neuroimaging evaluation

I. Vaz* and D. Maia

Psiquiatria, Centro Hospitalar de Trás-os-Montes e Alto Douro, Vila Real, Portugal

*Corresponding author.

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Introduction: Neuropsychiatric symptoms may be the first and only manifestation of brain tumours, while classic neurological symptoms and signs may be minimal or absent at first. These patients will often receive psychiatric treatments for prolonged periods before correct diagnosis.

Objectives: To report the case of a patient with olfactory groove meningioma presenting with neuropsychiatric symptoms as a basis for discussion.

Methods: Retrospective review of clinical notes, neuroimaging results and house photos. Literature review.

Results: A 66-year-old woman was brought by police to the psychiatric emergency department. Her neighbours had notified authorities of a bad smell, and police found the house was loaded with garbage. The patient reported depressive symptoms in the last 6 months, including apathy, anhedonia, social isolation, decreased appetite and insomnia; loss of basic skills such as cooking or cleaning; she also reported dizziness and two episodes of urinary and faecal incontinence in public. The patient had a history of being medicated for depression between 2000 and 2006. Currently she was taking only alprazolam 1 mg daily. During evaluation she was conscious, oriented and cooperative, with evident hypomimia, psychomotor inhibition and indifferent attitude. Cranial nerve function was preserved except for anosmia. Cranial CT and MRI showed a solid extra-axial tumour of 5.2x3.5x4.9 centimetres compatible with meningioma of the olfactory groove, and she was referred to Neurosurgery for surgical intervention.

