

The authors make a review about the different results in studies with cerebral SPECT in Schizophrenia, in terms of changes in cerebral regional blood flow, with and without activation tasks. They enhance the actuality and importance of this issue, and reinforce the idea that functional neuroimaging techniques may be important in identifying pathophysiologic processes in Schizophrenia.

P0365

Pet scan and schizophrenia(dementia praecox) (case study)

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Neuroimaging research has contributed to the understanding of structural and functional differences between the brains of people suffering from Schizophrenia and those of healthy people. However, the likely pathophysiological heterogeneity of Schizophrenia pose major difficulties to research, differential diagnosis (namely, with Alzheimer-type Dementia) and treatment. In this case study, regarding a female schizophrenic patient, using brain F-18 FDG (5 mCi) Positron Emission Tomography (PET) and Magnetic Resonance Imaging (MRI) scans, it is presented the identification of impaired and preserved neural system structure and function.

P0366

The neural correlates of facial affect recognition in patients with bipolar disorder, and their unaffected siblings

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Background: Bipolar disorder (BD) is characterised by emotional dysregulation; relatives of BD patients have a high rate of affective symptoms, and therefore abnormalities in emotional information processing are likely to be part of the genetic predisposition to BD. Examination of unaffected siblings of patients with BD can contribute to determining features of the BD phenotype which are related to familial predisposition as opposed to disease expression.

Aims: To identify the neural correlates of facial affect recognition in BD patients and their unaffected siblings.

Methods:

Event-related functional magnetic resonance imaging (fMRI) EPI data was collected with a 1.5T scanner. Blood oxygenation level-dependent (BOLD) data was obtained from 41 BD type I patients, 22 of their unaffected siblings and 51 matched healthy controls during recognition of fearful, angry and sad facial expressions. A random effects analysis was implemented using SPM5 (<http://www.fil.ion.ucl.ac.uk/spm>).

Results: BD patients showed reduced prefrontal cortex (PFC) activation, when compared to controls and siblings, with evidence of differentiation in location and laterality of activation maxima across different facial expressions. Regardless of valence, patients showed reduced extrastriate cortex activation. During angry faces, when compared to controls, siblings showed reduced activation in posterior cingulate gyrus, and during sad faces, enhanced activation in left ventral PFC and right parahippocampal gyrus.

Conclusions: Dorsolateral PFC (BA47) activation may represent a marker for genetic risk for BD. During sad faces, siblings showed greater activation of this region than HC, whilst BD patients showed reduced activation. This is consistent with previous findings implicating this region in BD.

P0367

Spect comparison of functional cerebral alterations between monopolar depression and comorbid alcohol dependence

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The development of human brain imaging has resulted in a number of techniques that allow unprecedented insights into the in vivo metabolic and neurochemical processes of the brain. Single positron emission cerebral tomography (SPECT) is a nuclear medicine technique that can be used for measuring perfusion and blood flow in patients affected with psychopathology. The aim of the study was to compare sole depressed patients and those with comorbid alcohol dependence in terms of the functional alterations detected by single positron emission scan (SPECT). For this, 27 SPECT imaging studies performed at Hospital Clínico Pontificia Universidad Católica, of selected patients, were collected and categorized by group. First group composed by depressed patients and second group of patients having alcohol dependence in addition to depression. Selected studies were coregistered, normalized and smoothed for standarization before statistic analysis was performed using MatLan7.1 software with SPM5 module. Mean blood flow in brain areas were compared between groups, with significant statistical difference at $p < 0.01$.

Results show significantly less blood flow in the group with alcohol dependence in Brodmann Areas 4,6,8,9,45 and 46 of the frontal lobe and Brodmann Areas 2,3,4,5,7 and 40 of the parietal lobe ($p < 0.01$). Furthermore, the group with alcohol dependence showed increased blood flow in frontal lobe's Brodmann Area 10, temporal lobe's Brodmann Areas 13,20,22, cerebellum, uncus and thalamus ($p < 0.01$). We conclude that alcohol dependence as comorbid condition in depressed patients determines an additional decrease in the mean blood flow of prefrontal and temporal lobes.

P0368

The effects of gender and COMT Val158met polymorphism on fearful facial affect recognition: An fMRI study

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The functional Catechol-O-methyltransferase (COMT Val 108/158 Met) polymorphism has been shown to have an impact on tasks of executive function, memory and attention and recently, tasks with an affective component. As estrogen may downregulate COMT, we were interested in the effect of gender, COMT genotype and the interaction between these factors on brain activations during an affective processing task. We used functional MRI to record brain activations from 74 healthy subjects who engaged in a facial affect recognition task; subjects viewed and identified fearful faces compared to neutral faces. We found a significant effect of gender on brain activations in the left amygdala and right superior temporal gyrus, where females demonstrated increased activations over males. Within these regions, female val/val carriers showed greater activity compared to met/met