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ABNORMAL EMOTIONAL RESPONSES TO PLEASANT AND UNPLEASANT VISUAL STIMULI IN FIRST EPISODE SCHIZOPHRENIA: F-MRI INVESTIGATION

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Aims: Affective deficits (flat affect, a diminished expression of emotion, anhedonia, and lowered ability to experience pleasure) are very common in schizophrenia. In emotion feeling, the crucial role of the insula, rather than of the primary somatosensory cortices, strongly suggests that the neural substrate for emotions is not merely sensorial. It is more likely that the activation of the insula representation of the visceromotor activity is responsible for feeling of disgust. A recent MRI study demonstrated specific left anterior insular volume reduction in chronic schizophrenia patients: sustainable is the suggestion that emotion of disgust or of taste may be related to the experience of pleasure, which probably is compromised in schizophrenics. We investigated fMRI brain activations in first episode schizophrenic subjects with negative symptoms and in healthy subjects elicited by pleasant and unpleasant visual stimuli.

Method: Ten first-episode schizophrenic subjects with normal IQ were recruited from the psychiatric service "SMILE" of San Salvatore Hospital and 10 healthy volunteers matched for age and education were scanned during observation of pleasant and unpleasant visual stimuli. Functional images were acquired with a 1.5T MRI scanner. Blood oxygenation level dependent (BOLD) contrast was obtained using EPI T2* weighted images.

Results: The most important result of the study was the demonstration that anterior insula was activated by the exposure to disgusting stimuli in normal subjects but not in schizophrenic subjects.

Conclusion: This failure of the neural systems used to support emotional attribution is consistent with pervasive problems in experiencing emotions by schizophrenics.