Autobiographical memory retrieval (AMR) engages a set of processes including episodic and semantic memory, visual imagery, self-reflection, emotion, and executive functions. Neuroimaging studies have shown that a large left lateral and medial neural network is associated with AMR: hippocampus and parahippocampal regions, temporo-parietal junction, retrospenial cortex, medial and lateral prefrontal cortex. Among this neural network two regions have been the main focus of interest: the hippocampus and the medial prefrontal cortex (MPFC).

Classical models suggest that the hippocampus contributes temporary to the consolidation of memory. Long-term remote memories could be accessed directly via the neocortex and independently of the hippocampus. Neuroimaging findings support an alternative model and suggest that medial temporal structure binds neocortical representation into a memory trace. The activation of hippocampal region may be independent of age of acquisition of the event but may depend on the vividness, amount of detail and emotionality of the event recalled.

Autobiographical memory and the self are closely linked. Numerous imaging studies have implicated the MPFC in self-referential processing during AMR. The MPFC could be related to the retrieval of personal semantic knowledge as well as episodic personal knowledge. The MPFC is also involved in emotion regulation, social cognition and theory of mind. Taken together these findings suggest that within the AMR network, MPFC and hippocampus are good brain targets for understanding the pathophysiology of schizophrenia.

S51.02

Evidence of long-term memory impairment in schizophrenia

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Abstract not available at the time of printing

S51.03

Long-term memory and visuospatial navigation

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Background and Aims: Long-term memory is normally assessed with traditional measures such as the Wechsler memory scale. However, these measures might not fully capture individuals' daily experiences. Long-term memory system has three separate information components: 1) encoding; 2) storage; and 3)retrieval. These three processes are thought to occur in the hippocampal formation. One of the main functions of the hippocampus is to construct and maintain spatial maps of the environment. In fact, when the hippocampus is selectively lesioned, humans present severe spatial memory deficits. The right hippocampus is involved in allocentric object location memory (objects that are part of the environment) and finding one's way through complex environments. This part of the hippocampus is activated during physical navigation. The left hippocampus is activated during the retrieval of memory of navigation. It seems that the visuospatial model requires the encoding, binding and retrieval of an event and its context. Given these findings, visuospatial navigation tasks likely explore long-term memory. In fact, visuospatial navigation can be considered as a valid surrogate for long-term memory and a good probe to activate the hippocampal formation. Neuroimaging studies have greatly improved the literature by providing confirmatory evidence that the hippocampus, together with the parahippocampal and posterior parietal cortices, are engaged in visuospatial navigation. Further, there is evidence from neuroimaging studies that the hippocampus is involved during complex navigational situations. The usefulness of visuospatial navigation as a measure of long-term memory will be discussed.

S51.04

Exploring long-term memory and the hippocampus using functional magnetic resonance imaging

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During the past few decades, the schizophrenia cognitive literature has focused mainly on executive functions, a cluster of cognitive brain functions involved in attention, planning, sequencing, decision making, initiating and inhibiting behaviors which are associated with the prefrontal cortex. Emerging evidence, however, indicates that long-term memory, associated with the temporal lobes, is an equally, if not more salient feature of the impaired cognitive profile of schizophrenia. Evidence of impaired encoding relative to spared post-encoding, and an apparent dissociation between the levels of impairment of explicit and implicit memory processes, provides further indication that the long-term memory deficits of schizophrenia are mediated primarily by the medial-temporal lobes rather than other cortical structures. Functional magnetic resonance imaging (fMRI) has been used to investigate the neurobiological basis of long-term memory deficits. Data from these studies have confirmed the role of the frontal, medial and inferior temporal regions in the memory dysfunctions observed in patients. Further, research suggests that memory strategies used by individuals with schizophrenia might be impaired as a result of the disturbance of the functional connectivity of prefrontal and temporal-limbic structures. In order to identify the unique contribution of the temporal lobes to the long-term memory deficit of schizophrenia, fMRI studies must focus on memory tasks which specifically elicit activation in this brain region.

S51.05

The clinical implications of the long-term memory impairment of schizophrenia

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W16. Workshop: IMPULSE CONTROL DISORDERS: ASSOCIATION WITH OBSESSIVE COMPULSIVE DISORDER AND IMPULSIVITY

W16

Impulse control disorders: association with obsessive compulsive disorder, addiction and impulsivity

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