

Abstract

Background

There is evidence that spontaneous blink rate (SBR) can reflect central dopaminergic activity. Psychosis is related to disturbed dopaminergic activities and aberrant salience. Provided that dopaminergic activity is associated with exposure to salient stimuli, the pattern of spontaneous eye blinking on exposure to salient stimuli in patients with psychosis has been proposed to be different from that in normal subjects.

Objective

This study aimed at looking for a difference in the pattern of SBR between patients with psychotic disorders and normal subjects on exposure to salient stimuli.

Method

This was an experimental study performed on 35 patients with psychotic disorders and 35 matched normal subjects. SBR was measured both by automated computer program and manually from a video recording of spontaneous eye blinking of participants while they were listening to a story with salient features. The pattern of changes in SBR in response to changes in degree of salience of consecutive

paragraphs of the story was analyzed between patients and normal subjects. Subgroup analysis of the pattern was also carried out between patients with active psychotic symptoms and patients without active psychotic symptoms.

Results

Normal subjects showed statistically significant changes in SBR with changes in the salience of the story. However, this pattern was less apparent in patients. Patients with active psychotic symptoms showed a different pattern of change in SBR with changes in salience of the story from patients without active psychotic symptoms.

Conclusion

The difference in pattern of SBR in response to salient stimulus between patients and normal subjects suggests a possible difference in dopaminergic activity in patients with psychotic disorders. The possible use of SBR as a behavioral marker to detect change in central dopaminergic activity was demonstrated in this study. Further research is required to explore the possibility of utilizing SBR as a component in the complex process of predicting the risk of onset and relapse of psychotic illness.

Keywords: Spontaneous blink rate, Salience, Psychosis