

Ischemic Evidence of Transient Global Amnesia: Location of the Lesion in the Hippocampus

YoungSoon Yang

Department of Neurology, Soonchunhyang University College of Medicine, Cheonan Hospital, Cheonan, Korea

Abstract:

Background and Purpose: Transient global amnesia (TGA) is a rare amnesic syndrome characterized by the sudden onset of a selective anterograde and retrograde amnesia with a time course of up to 24 hours. Recent studies have found a high frequency of small high-signal abnormalities in the hippocampus on diffusion-weighted imaging (DWI), and accordingly ischemia has been proposed as an etiology of TGA. We hypothesized that TGA lesions occur preferentially in the CA1 region of the hippocampus, which is known to be susceptible to ischemia.

Methods: Twenty consecutive patients with a clinical diagnosis of TGA underwent DWI both within 24 hours of symptom onset and 3 days later. Twenty patients with high-signal abnormalities in the hippocampus on the initial DWI underwent subsequent DWI and T2-weighted imaging in the coronal plane to precisely localize the lesions.

Results: Seventeen patients had small high-signal abnormalities (with diameters of 1-3 mm) in the hippocampus unilaterally on DWI. One of these patients had two lesions in one hippocampus. Three of the 20 patients had lesions bilaterally in the hippocampus, 1 of whom had 3 bilateral lesions. A total of 25 lesions were identified: 5 in the hippocampal head, 19 in the body, and 1 in the tail. Six patients had unilateral lesions on the left, 11 patients had them on the right, and 3 patients had bilateral lesions.

Conclusions: In this study, lesions associated with TGA were localized mostly to the lateral portion of the hippocampus, corresponding to CA1. This finding supports the ischemic etiology of TGA, but the underlying pathophysiologic mechanism requires further investigation.

Keywords:

Transient global amnesia, CA1, Hippocampus.