

## Tadalafil-Induced Transient Global Amnesia

*To the Editor:* Transient global amnesia is a syndrome of sudden onset short-lived anterograde and variable retrograde memory impairment. Its main precipitants are sexual intercourse and physical exertion. It was seldom linked to phosphodiesterase type 5 inhibitors (PD5), widely used in erectile dysfunction, with the caveat of confounding simultaneous sexual activity.

### Case Report

A 48-year-old man presented with sudden memory impairment. His medical history was relevant for mild dyslipidemia and long-standing impotence. Tadalafil had been prescribed for the first time the day before. After taking a 25 mg pill, and not getting an erection, he decided to sleep. He was not anxious, did not hyperventilate, and did not undergo any physical activity before sleeping. He woke up the next morning unable to remember things from the week before—such as the previous day's medical consultation, that he had been installing new lamps in the house, or that a tree fell in his yard—seeming surprised and irritated every 5 minutes, and repetitively questioning his wife about this. He was otherwise normal, capable of dressing, cooking breakfast, and even driving to the hospital. When observed he was fully alert, cooperative and orientated. He could not recall any event from the previous

week until that moment, not remembering getting up, dressing, or driving. He retrieved 1 word from 5 after a 5-minute delay and could not recall the doctor's name.

Semantic and autobiographic memories were normal, as was the whole physical and remaining neurological examination. EEG and brain MRI showed no abnormality, with normal diffusion weighted imaging (DWI) and apparent diffusion coefficient (ADC) sequences. Memory abnormality started to gradually fade, with almost complete recollection of past events by the 8th hour after symptom onset, leaving a memory gap for this period. Two days later there was only inability to recall what occurred in that morning. MRI again failed to depict any abnormality.

### Discussion

There are two English-language reports of transient global amnesia after sildenafil<sup>1,2</sup> and one after tadalafil use.<sup>3</sup> In all but one, sexual intercourse ensued, confounding the real role of the PD5I, as sexual activity and exertion are the main recognized transient global amnesia precipitants. In the case of Savitz and Caplan,<sup>1</sup> symptoms preceded and obviated sexual activity, but it is not clear if the patient got an erection, was already engaged in foreplay, or exertion and hyperventilation occurred.

PD5I causes relaxation of vascular smooth muscle, which is prominent, but not exclusive, in corpus cavernosum vessels. As PD5I can induce migraine and was associated with transient ischemic attack

and stroke, it is believed that it can induce vascular changes in the brain.<sup>1,3</sup> It has been proposed that its vasodilator properties can promote venous congestion, decrease blood flow through atherosclerotic narrowed arteries or even provoke self-limited cardiac arrhythmia.<sup>1,3</sup> As previously noted by Roach,<sup>4</sup> transient global amnesia probably results from altered cerebral vasomotor control, and some circumstantial factor, as tadalafil exposure in our patient, can act as a trigger to secondary excessive vasoconstriction or to cortical-spreading depression initiation.

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