



Sildenafil Associated threatened Ischemic Stroke Reversed with Alteplase

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Abstract

A 68-year-old male presented with a threatened ischemic stroke after ingesting sildenafil. Signs and symptoms promptly reversed with alteplase administration, and subsequent studies disclosed no other likely etiology for stroke. Although ischemic stroke owing to sildenafil has been reported, to our knowledge this is the first demonstration of reversal by alteplase.



Case Report

A 68-year-old male with no prior history of hypertension, cardiac disease or stroke was transported to the emergency department after developing lower extremity weakness and slurred speech 30 minutes after ingesting of 40 mg of sildenafil. He was noted to be normotensive, in sinus rhythm, and to have dysarthria and a right facial droop, suggestive of left hemispheric ischemia. A non contrast CT scan of the head disclosed no evidence of hemorrhage, 6.7 mg of alteplase (TPA) was administered followed by infusion of 60.3 mg, during which all neurologic signs and symptoms abated, and he returned to his normal baseline. EKG showed normal sinus rhythm, CT angiogram of the head and neck, echocardiogram with bubble study, transcranial Doppler with micro-embolus detection and laboratory studies were all normal. His only risk factor for stroke was mild hyperlipidemia, controlled on 5 mg of rosuvastatin daily. There was no family history of stroke.

Discussion

Sildenafil is a competitive inhibitor of the cyclic guanosine monophosphate degrading enzyme phosphodiesterase type 5 and has been used for the treatment of both erectile dysfunction and pulmonary hypertension for approximately 15 years. Although there have been several reports of ischemic stroke associated with sildenafil use^[1-4], this adverse effect is not widely

appreciated, the drug is generally considered extremely safe^[5-7], and there have been no prior reports of aversion of threatened stroke with alteplase treatment. The underlying pathophysiologic mechanisms contributing to ischemic cerebral events have not been elucidated and have been postulated to reflect hypoperfusion distal to critical artery stenosis^[8], unrecognized transient arrhythmia^[2,4], cardioembolism or a hypercoagulable state^[8-10]. None of these mechanisms appears to have been operative in the above case.

Conclusion

The vasoactive^[11] effects of this agent are well recognized, and cerebral vasodilation has been proposed as a mechanism for headaches which can occur as a side effect of the medication, although findings have been inconclusive, and sildenafil has been suggested as a neuroprotective treatment for acute stroke^[12,13]. It appears possible that the ingestion of a sildenafil in this case may have resulted in an area of hypoperfusion and thrombosis which rapidly responded to the administration of alteplase.

Conflicts of Interest: None of the authors have any conflicts to disclose.

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