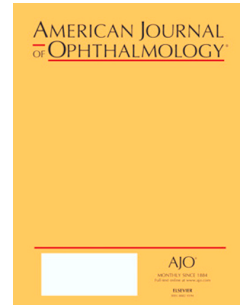


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Stroke risk and risk factors in patients with central retinal artery occlusion

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**Stroke risk and risk factors in patients with central retinal artery occlusion**

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**Abstract**

**Purpose:** Central retinal artery occlusion (CRAO) is mechanistically similar to a stroke. Current guidelines recommend a standardized and systematic evaluation of risk factors for patients who have had a stroke. This study evaluates the yield of this evaluation in patients with CRAO and frequency of stroke in this population.

**Design:** Cohort study.

**Methods:** We evaluated the diagnostic yield of an expedited inpatient evaluation of cerebrovascular risk factors in a cohort of patients presenting with an acute CRAO within the period from 2009-2017 at an academic hospital. Vital signs, laboratory parameters including low-density lipoprotein level, hemoglobin A1c fraction, erythrocyte sedimentation rate, C-reactive protein level, platelet count and troponin level were collected. Echocardiography, cardiac telemetry, magnetic resonance imaging, and cerebrovascular imaging were obtained to screen for strokes and vascular risk factors. All new diagnoses and clinical treatments stemming from the inpatient evaluation were documented. Outcomes included the frequency of stroke on MRI, hypertensive emergency, critical carotid disease, or critical cardiac disease including high-grade valvular lesions, new myocardial infarction or arrhythmias. We documented the frequency of a change in medication, acute surgical intervention or new diagnosis of systemic disease as a result of the inpatient evaluation. Finally, we evaluated the rate of symptomatic stroke, myocardial infarct and death risk in the 24 months after CRAO.

**Results:** In this cohort of 103 patients with CRAO and systematic risk factor screening, 36.7% of patients had critical carotid disease, 37.3% had coincident acute stroke, 33.0% presented with hypertensive emergency, 20.0% had a myocardial infarction or critical structural cardiac disease, 25% underwent an urgent surgical intervention and 93% had a change in medication as a result of the inpatient evaluation. Patients with CRAO had similar risk of subsequent stroke, myocardial infarction and death as patients with high-risk transient ischemic attack.

**Conclusions:** Patients with CRAO are at significant risk of future cardiovascular and cerebrovascular events and often have undiagnosed risk factors that may be modifiable.

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