B28

Nicholas Stratigakis B.S. Advisor(s): Ilya Leskov M.D.

Co-author(s):

Use of Optical Coherence Tomography Angiography in Hypertensive Patients of African and Afro-Caribbean Descent: A Systematic Review

Systemic hypertension poses significant risks for ophthalmologic pathologies through its impact on microvasculature. Optical Coherence Tomography-Angiography (OCT-A) has emerged in recent years as a noninvasive tool capable of detecting microvascular abnormalities associated with hypertension, offering potential for early diagnosis and management. Despite extensive research on OCT-A's applications, there seems to be a critical gap in its use for hypertensive individuals of African descent, a population with disproportionately high prevalence and severity of microvascular disease. This study aims to address this health equity gap by surveying the existing research for such studies.

A systematic literature search was conducted across PubMed, Scopus and Web of Science using keywords related to OCT-A and hypertension. Three blinded reviewers assessed eligibility of studies and performed data extraction. Data on study design, OCT-A parameters, and participant demographics were extracted and analyzed.

Out of 1,412 identified reports, 930 were screened by title and abstract after duplicate removal. Of these, 48 articles were further assessed for eligibility via full-text review and 29 met the criteria for qualitative analysis. Two of the 29 studies included patients of African or Afro-Caribbean descent. Both studies featured small sample sizes and limited analysis of racial differences in OCT-A findings, highlighting a critical underrepresentation of these populations in OCT-A research.

While OCT-A shows great promise as a noninvasive tool for evaluating retinal microvascular changes, this review highlights a critical gap in representation of patients of African or Afro-Caribbean descent. Studies on these populations remain limited, with small cohorts and incomplete analysis of racial or ethnic differences. Future research must aim to broaden the scope of OCT-A studies to ensure equitable application of this technology in identifying and managing at-risk populations.