

**A SYSTEMATIC REVIEW AND META-ANALYSIS OF OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY AS AN ADJUNCTIVE TOOL IN PARACHIASMAL NEOPLASMS**

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**PURPOSE:**

Optical coherence tomography angiography (OCTA) has been used in the evaluation of eye conditions. This study aims to evaluate the utility of OCTA in patients with chiasmal compression and to determine its role in evaluation, prognostication, and monitoring of such patients.

**METHODS:**

A search of PubMed, Embase, SCOPUS, CINAHL, and Web of Science was conducted from the inception of the databases up till July 2022 to identify studies which utilize OCTA and/or OCT for patients with neoplasms affecting the optic chiasm. OCTA outcome measures included densities of the superficial capillary plexus (SCP), deep capillary plexus (DCP) and radial peripapillary capillary (RPC). OCT outcome measures included thicknesses of the retinal nerve fibre layer (RNFL), macular ganglion cell complex (mGCC) and macular ganglion cell and inner plexiform layer (mGCIPL). Meta-analysis for standardized mean differences were conducted.

**RESULTS:**

67 studies with a total of 4900 eyes from 2612 patients (1305 males, 1307 females) and 1977 eyes from 1139 controls (510 males, 629 females) were reviewed. Comparing patients with visual deficits to controls, significant reductions were seen in SCP, RPC, RNFL, mGCC, and mGCIPL. Pre-operative RNFL, mGCIPL, and RPC were lower in patients with poor VF outcomes and potential markers for prognosis of VF recovery. Prior to the development of visual field defects in early disease, reductions in RPC density, RNFL and mGCC were noted.

**CONCLUSION:**

This systematic review and meta-analysis provides a balanced perspective of both measures and identifies OCTA as a potentially viable tool in the evaluation, prognostication and monitoring of lesions affecting the optic chiasm.

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