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## OCT angiography: Applications and limitations

**Statement of the Problem:** Optical Coherence angiography (OCTA) is a new noninvasive imaging technique that employees motion contrast imaging to high resolution volumetric blood flow information generating angiographic images in a matter of seconds. Published studies hint at OCTA's potential efficacy in the evaluation of common ophthalmologic diseases such age related macular degeneration (AMD), diabetic retinopathy, artery and vein occlusions, and glaucoma. OCTA can detect changes in choroidal blood vessel flow and can elucidate the presence of choroidal neovascularization (CNV) in a variety of conditions but especially in AMD. The purpose of this paper is to elucidate the main applications and potential limitations comparing to Fluorescein angiography (FA).

**Methodology & Theoretical Orientation:** A review of the recent publications regarding this topic was done to define the applications and possible limitations of this new technology.

**Findings:** Optical Coherence angiography (OCTA) main applications was diabetic retinopathy, choroidal Neovascularization due to AMD, differential diagnosis with retinal telangiectasia and retinal vein occlusions. The main limitations was: restricted visual field, Inability to show leakage, artifacts during acquisition and the device are currently expensive.

**Conclusion & Significance:** This technology, despite some limitations, offer a non-invasive option of visualization of the retinal vasculature in detail.

### Recent Publications

1. Hwang T S, Gao S S, Liu L, Lauer A K, Bailey S T, Flaxel C J et. al. (2016) Automated quantification of capillary nonperfusion using optical coherence tomography angiography in diabetic retinopathy. JAMA Ophthalmol. 134(4):367-373.
2. Coscas G J, Lupidi M, Coscas F, Cagini C, Souied E H (2015) Optical coherence tomography angiography versus traditional multimodal imaging in assessing the activity of exudative age-related macular degeneration: a new diagnostic challenge. Retina. 35(11): 2219-2228.
3. de Barros Garcia et. al. (2017) Diabetic retinopathy and OCT angiography: clinical findings and future perspectives. Int. J. Retin. Vitr. 3:14
4. Chalam K V, Kumar Sambhav (2016) Optical Coherence Tomography Angiography in Retinal Diseases. J. Ophthalmic Vis Res. 11(1): 84-92.
5. Carlo T E, Romano A, Waheed N K, Duker J S (2016) A review of optical coherence tomography angiography (OCTA). J Ophthalmic. Vis. Res. 1:5.

### Biography

Carlos E Cury Jr MD FBU FBQS has graduated in medical school in 2000 at Santos Medical School São Paulo-Brazil. He has specialized in ophthalmology at Rio Preto Eye Hospital (HORP) São Paulo-Brazil (2001-2004). He received Retinal Research Fellowship from Philipps University-Marburg-Germany in 2005. He completed Master's Degree in Internal Medicine at Rio Preto Medical School (2011). He has held Retinal Researcher Fellowship at BallsBridge University, Department of Vitreoretinal Surgery of HORA Eye Hospital -Zeiss Reference Center- São José do Rio Preto-SP-Brazil.

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