

THE ROLE OF OCT IN GLAUCOMA

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Introduction: Optical coherence tomography (OCT) is a non-invasive optical technique used for in vivo cross-sectional imaging of the optic nerve head and retina. OCT represents a commonly used imaging technology in the evaluation of glaucomatous structural damage.

Purpose: To emphasize the fact that OCT is a valuable clinical tool for glaucoma diagnosis and detection of progression.

Material and methods: There are different types of OCT. AS-OCT is a non-contact procedure and is more user-friendly when compared to UBM. Time domain (TD)-OCT creates cross-sectional images of anterior segment structures and it is used also in glaucoma and retina diagnosis. TD-OCT also provides measurement tools to document and follow changes in the cornea, angle and anterior chamber. Spectral domain (SD)-OCT - glaucoma assessment over the earlier generation of time domain (TD)-OCT due to increased axial resolution and faster scanning speed that lead to lower susceptibility to eye movement artefacts. SD-OCT is used for glaucoma diagnosis, screening and detection of progression. The clinical utility of SD-OCT in glaucoma has focused on the evaluation of retinal nerve fiber layer (RNFL) parameters and allows for the assessment of macular parameters (the highest concentration of retinal ganglion cells-RGC in the retina = 50%).

Results: Visual Field (VF) remains the most important test to monitor progression of glaucoma. OCT of optic disc/RNFL/macula using the same instrument with the software-based analysis can be useful. OCT progression analysis cannot replace VF progression analysis. At present OCT progression analysis is not age-corrected. Apparent OCT progression and VF progression are not always correlated.

Conclusion: OCT of optic disc/RNFL/macula can be useful, but the diagnosis of glaucoma cannot be made on the basis of OCT alone.