Purpose: To evaluate macular asymmetry using spectral domain Optical Coherence Tomography (SD-OCT) as an indicator of early glaucoma. Design: Prospective, cross sectional, case-control study.

Methods: Total, superior and inferior macular thickness were measured in 20 patients selected by criteria of early glaucoma (Hodapp classification) and 16 control subjects by posterior pole analysis of SD-OCT (Spectralis; Heidelberg Engineering)®. Macular thickness asymmetry between superior and inferior hemifield was analyzed. Results: Total, superior and inferior macular thickness were lower in POAG (Total: 278.35 vs 287.25 µm, p= 0.029; Superior: 281.80 vs 287.69 µm, p=0.123; Inferior: 275.05 vs 286.50 µm, p=0.014). The area under ROC curve for macular thickness asymmetry was 0.863 (p<0.001).

Conclusions: Evaluation of macular asymmetry can be useful in the diagnosis of early glaucoma. Inferior macular thickness may be more vulnerable to early glaucomatous damage than superior. Further studies are needed to evaluate the potential of macular asymmetry parameters.