

To establish the relationship between structural and functional parameters in idiopathic intracranial hypertension (IIH)

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Purpose: To quantify the relationship between optic nerve head tomography with visual acuity, perimetric sensitivity, amplitude and latency in visual evoked response (VER) and within 2 degrees radius of the multifocal electroretinography (mfERG) field in acute and established cases of papilledema in IIH at their presentation and at 6 months follow up.

Methods: 15 patients (28 eyes) with recently diagnosed papilledema in IIH were evaluated using logMAR chart, SD - OCT (Spectral Domain optical Coherence Tomography), standard automated perimetry (Humphrey visual field 30-2 sita standard) and mfERG field using **Metro** vision patented technology.

Results: At presentation, visual acuity did not show any correlation with any of the structural parameters. A negative correlation between disc height and mean deviation at baseline ($r = -0.37$) and RNFL and mean deviation ($r = -0.36$) with $p < 0.05$ were noted indicating worsening of visual field with increase in disc height and RNFL thickness. A positive statistically significant correlation was noted between latency of VER and disc height ($r = +0.39$;) and between disc height and RNFL ($r = +0.55$). At 6 months follow up, visual acuity had a positive correlation with disc height ($r = +0.38$; $p < 0.05$) reflecting the poorer visual outcome in patients with persisting disc swelling. A strong positive correlation between disc height and RNFL ($r = +0.57$; $p = 0.002$) and between amplitude of mfERG values and disc height ($r = -0.61$; $p = 0.003$) indicated the compromised inner retinal function with persisting disc swelling. Statistically significant difference between baseline and 6 month follow up values were noted in all parameters ($p < 0.001$).

Conclusions: Structural parameters did not correlate with presenting visual acuity. Therefore, visual acuity is not the best indicator to judge the extent of damage to optic nerve in IIH. Tomographic parameters along with mfERG are better indicators to assess the damage to optic nerve head in IIH.