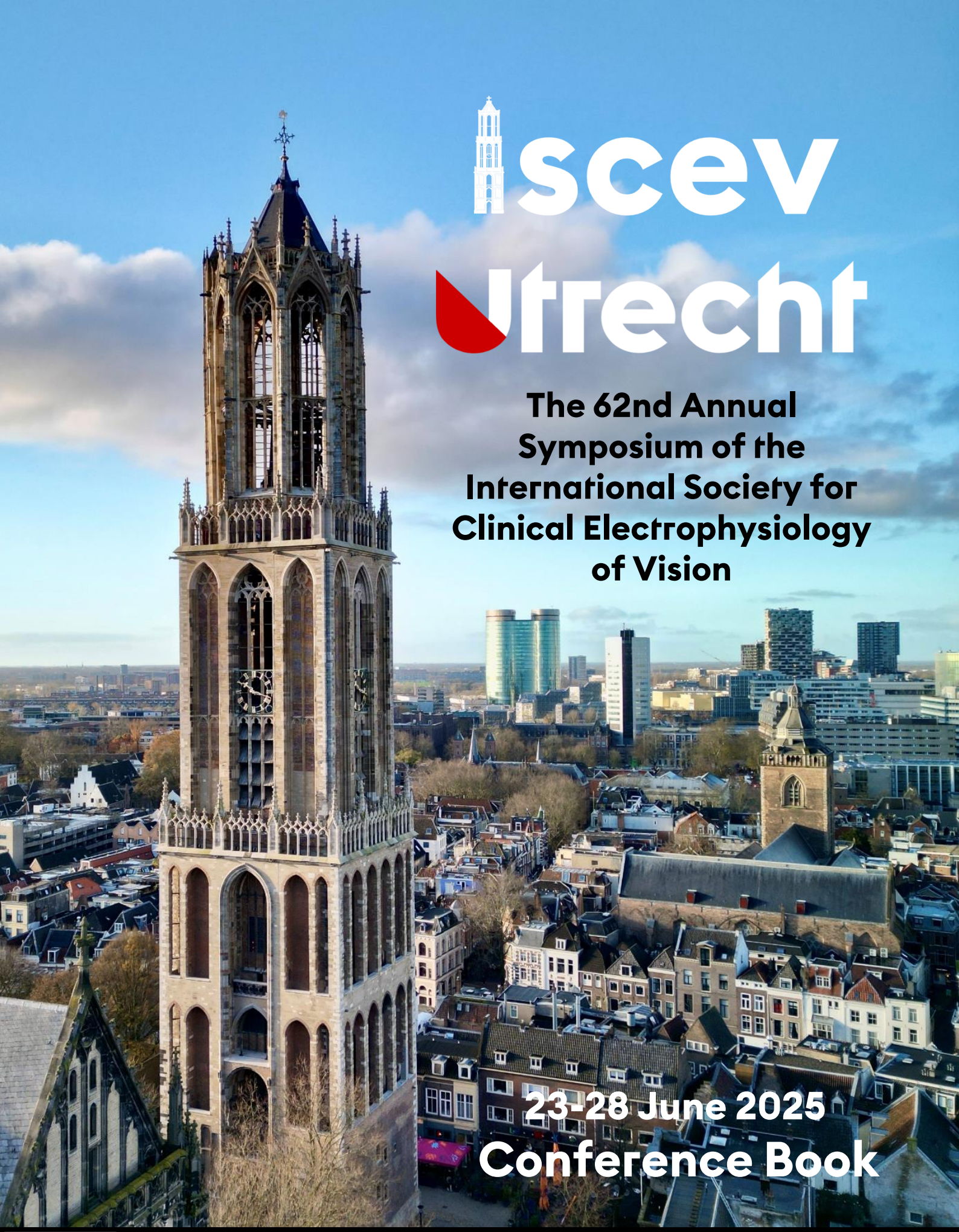

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**O7-5**

**Evaluation of retinal neuronal and vascular alterations using photopic negative response and optical coherence tomography angiography in optic pathway glioma.**

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**Purpose** Optic pathway gliomas (OPGs) are low-grade pilocytic astrocytomas that can lead to significant visual loss. Although magnetic resonance imaging (MRI) is commonly used for follow-up, it does not always correlate with clinical progression. Therefore, complementary tests such as VEP and optical coherence tomography (OCT) have gained increasing importance. In this study, we aimed to investigate the relationship between posterior segment findings assessed by OCT and OCT-angiography in patients with OPG and their electrophysiological parameters, including VEP and photopic negative response (PhNR) values.

**Methods** This retrospective study included 25 eyes from 19 patients with OPG, and 30 healthy controls. Only patients diagnosed with optic nerve involvement were included. Data collected from patient records included best-corrected visual acuity (BCVA), central macular thickness (CMT), retinal nerve fiber layer (RNFL) thickness, superficial and deep capillary plexus (SCP, DCP), foveal avascular zone (FAZ) area, peripapillary vascular density (PVD), and choriocapillaris vascular density (CVD), as well as flash VEP, pattern VEP, and PhNR values.

**Results** The mean age was 12.96 ± 11.0 years in OPG group and 12.20 ± 12.0 years in controls ($p=0.97$). Bilateral OPG was present in 6 patients, and unilateral in 12. Family history was positive in 11 patients, and NF1 gene mutation was identified in 13. BCVA was significantly lower in the OPG group than controls ($p=0.002$). Mean CMT was 241.64 ± 19.29 µm in the OPG group and 237.97 ± 17.11 µm in controls ($p=0.46$). CMT was significantly thinner in the superior, inferior, temporal, and nasal quadrants in OPG group (all $p<0.01$). Mean RNFL thickness was also significantly reduced in the OPG group (77.76 ± 30.05 µm) than controls (102.93 ± 10.50 µm, $p=0.003$), with all quadrants showing statistically significant thinning ($p\leq0.001$ for all). Foveal SCP was similar between groups ($p=0.34$), but it was significantly reduced in all SCP quadrants in the OPG group ($p<0.001$ for all). DCP was significantly lower only in the foveal region in the OPG group ($p<0.001$), with no significant differences in other quadrants. Superficial and deep FAZ areas were significantly smaller in the OPG group ($p<0.01$ and $p=0.03$, respectively). PVD was significantly decreased in all quadrants in the OPG group ($p<0.001$), while CVD was significantly lower only in the temporal and nasal quadrants ($p<0.001$). Electrophysiological findings in the OPG group were as follows:N2 latency: 66.39 ± 14.70 msec, N2 amplitude: -2.21 ± 3.33 µV; P2 latency: 115.93 ± 18.26 msec, P2 amplitude: 21.8 ± 12.36 µV; N75 latency: 77.40 ± 22.73 msec, N75 amplitude: -1.47 ± 3.34 µV; P100 latency: 118.18 ± 23.75 msec, P100 amplitude: 15.21 ± 9.57 µV; PhNR latency: 68.81 ± 30.57 msec, PhNR amplitude: -27.68 ± 13.79 µV; B-wave latency: 30.99 ± 1.55 msec, B-wave amplitude: 84.14 ± 30.58 µV. Statistically significant correlations were observed between electrophysiological measurements and posterior segment parameters in OPG patients.

**Conclusion** These findings suggest that PhNR, along with OCT and OCTA parameters, may serve as valuable adjuncts to standard electrophysiological tests (flash VEP, pattern VEP) in the follow-up of OPGs. Furthermore, the results indicate that OPGs may involve both neuronal and vascular alterations in the posterior segment, which may correlate with electrophysiological findings.