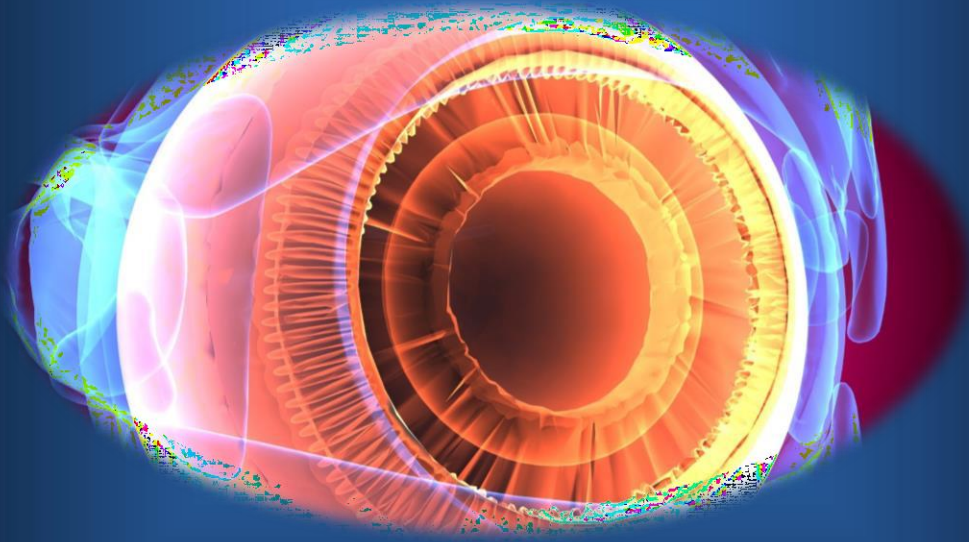


ophthal Focus

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Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you 'Ophthal Focus' which contains latest and interesting news in the field of Ophthalmology.

This issue contains

- Selective Laser Trabeculoplasty in Young Patients with Primary Open-Angle Glaucoma and Ocular Hypertension
- A case report of Choroidal lymphoma
- The EYE-RISK Consortium integrates metabolomics, genomics and disease pathways in AMD

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Best Regards,

Medical Team, Micro Labs Limited

Selective Laser Trabeculoplasty in Young Patients with Primary Open-Angle Glaucoma and Ocular Hypertension

Selective laser trabeculoplasty (SLT) has become an established method for lowering intraocular pressure (IOP) in open-angle glaucoma (OAG) and ocular hypertension (OHT). Few studies have evaluated the efficacy of SLT in young OHT and juvenile glaucoma patients, and little is known about the efficiency and safety of SLT for these patients. Since some studies have suggested that ALT is statistically less effective in younger

patients than in older patients it is not known if the effect of SLT in young patients is different from that in older patients. The main aim was evaluation of the ocular hypotensive effect of SLT. The second goal was assessment of the

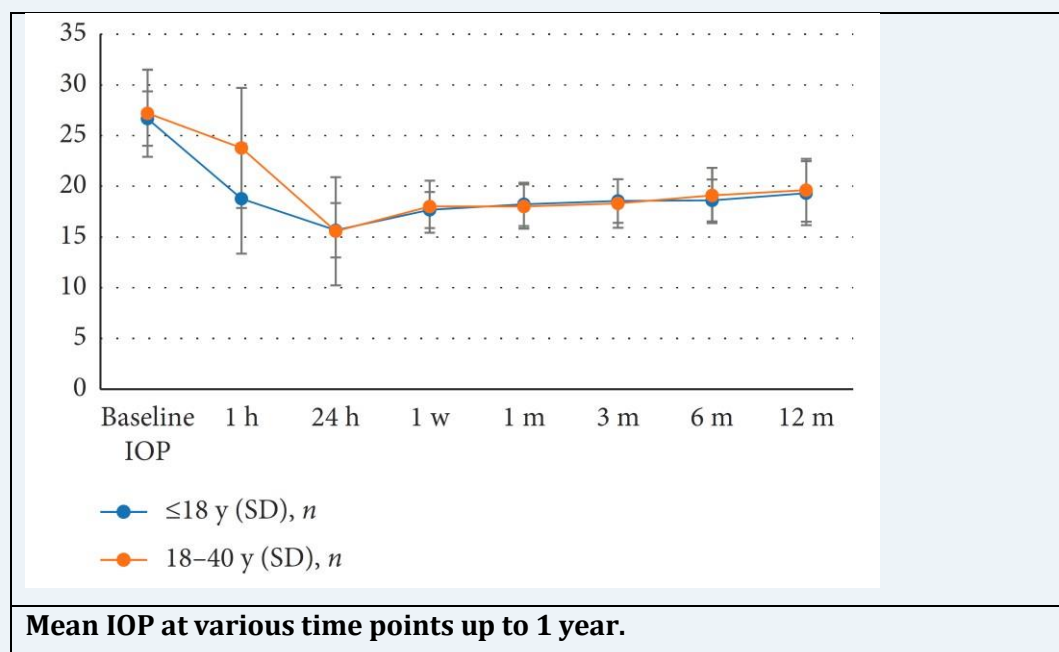
predictive factors of success after SLT treatment in these young patients.

SLT can be an effective and safe treatment for young patients with POAG and OHT. High baseline IOP predicted high SLT success.

This was a retrospective clinical study. Fifty-six eyes from 56 young (age ≤ 40 y) patients with POAG or OHT treated with SLT were included. According to age, patients were divided into group 1 and group 2. Patients in group 1 were younger than 18 years old, and patients in group 2 were between 18 and 40 years old. Patients were evaluated before treatment and at 1 hour, 1 day, 1 week, 1 month, 3 months, 6 months, and 1 year after treatment. We also collected older patients (age ≥ 60 y) who received SLT during the same period for comparison at 1-year follow-up. Possible factors affecting the success of SLT, including baseline IOP, age, sex, diagnosis (POAG or OHT), and whether or not use of antiglaucoma medication before treatment, were analyzed.

SLT treatment produced significant reduction in IOP in the young patients with POAG or OHT during the 1-year follow-up period $P < 0.05$. Mean IOP at 1 hour after SLT was lower in group 1 than in group 2 ($P < 0.01$) but at other follow-up time points, IOP values were not different $P > 0.05$. IOP reduction and success rate were not significantly different between young and old patients at 1 year after

treatment. IOP measurements over a 24-hour period were recorded before and after the SLT in 20 young adult patients. IOP values were significantly lower in the treated patients at all time points than at pre-treatment $P < 0.05$, and 24-hour mean IOP, peak IOP, valley IOP, and fluctuation in IOP were also lower in SLT-treated patients ($P < 0.05$). Baseline IOP was found as a predictor of SLT success in young patients (OR = 1.895), whereas age, gender, diagnosis, and whether or not use of antiglaucoma medication were not correlated with SLT success ($P = 0.725$, $P = 0.750$, $P = 0.061$, and $P = 0.201$ respectively).



This study identified selective laser trabeculoplasty as an effective and safe treatment for young patients with primary open-angle glaucoma and ocular hypertension. The treatment can reduce intraocular pressure and pressure fluctuations for these patients and can be used as primary or adjunct therapy. High pretreatment intraocular pressure is a predictor of success with selective laser trabeculoplasty.

Source: Liu D et al. J Ophthalmology. 2020 June. 5742832. <https://doi.org/10.1155/2020/5742832>

A case report of Choroidal lymphoma

A 54-year-old asymptomatic Caucasian woman with a history of psoriasis and chronic obstructive pulmonary disease (COPD) under treatment with topical and oral corticosteroids was referred for suspicion of choroidal lymphoma in both eyes (OU). The referring physician recommended treatment with rituximab, an anti-CD20 monoclonal antibody. On examination, best-corrected visual acuity was 20/20 in the right eye (OD) and 20/25 in the left eye (OS). The intraocular pressure, extraocular movements, and slit-lamp examination were normal OU. There was no conjunctival lymphoid infiltration OU. On fundusoscopic examination, there was a uniform mottled appearance of the choroid OU.

Funduscopically, the patient had diffuse subtle, yellow, mottled spots deep to the retina OU [Fig. 1 a and b], suggesting possible choroidal lymphoma. However, on autofluorescence [Fig. 1 c], there was localized hypo- and hyperautofluorescence OD (arrows) in the temporal macula, suggesting focally damaged retinal pigment epithelium (RPE), not typical for choroidal lymphoma which more often shows generalized RPE alterations. By OCT [Fig. 1 d], subretinal fluid (SRF) and pachychoroid were documented, measuring 310 μm , suggestive of central serous chorioretinopathy. Furthermore, there was no sign of choroidal infiltration with lymphoma as the choroidal vascular pattern was intact and lacking a “seasick” surface undulation. The case was diagnosed to be of *Central serous chorioretinopathy*.

Central serous chorioretinopathy (CSCR) is a disorder involving choroidal vascular thickening and dilation of choriocapillaris with leakage of fluid under the RPE, producing RPE detachment and fluid accumulation under the retina. In a meta-analysis of 1098 cases of CSCR, 21% occurred in females, often with corticosteroid use.

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Source: Arias DC et al Indian J Ophthalmol 2020 June. 68:961.

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The largest genome-wide association study (GWAS) to date identified 52 genetic variants at 34 loci that are significantly associated with AMD.

In the current study, we aimed to perform the largest metabolomics study in AMD to date, using data collected from 2,307 AMD cases and 4,294 control individuals of five cohorts. In addition, we aimed to determine the effect of AMD-

Biological interactions between the main AMD disease pathways, and suggests that multiple pathways may need to be targeted simultaneously

associated genetic variants on metabolite levels, and to investigate associations between the identified metabolites and activity of the complement system, one of the main AMD-associated disease pathways.

Metabolomics was performed using a high-throughput H-NMR metabolomics platform, which allows the quantification of 146 metabolite measurements and 79 derivative values. Metabolome-AMD associations were studied using univariate logistic regression analyses. The effect of 52 AMD-associated genetic variants on the identified metabolites was investigated using linear regression. In addition, associations between the identified metabolites and activity of the complement pathway (defined by the C3d/C3 ratio) were investigated using linear regression.

We identified 60 metabolites that were significantly associated with AMD, including increased levels of large and extra-large HDL subclasses and decreased levels of VLDL, amino acids and citrate. Out of 52 AMD-associated genetic variants, seven variants were significantly associated with 34 of the identified metabolites. The strongest associations were identified for genetic variants located in or near genes involved in lipid metabolism (ABCA1, CETP, APOE, LIPC) with metabolites belonging to the large and extra-large HDL subclasses. In addition, 57 out of 60 metabolites were significantly associated with complement activation levels, and these associations were independent of AMD status. Increased large and extra-large HDL levels and decreased VLDL and amino acid levels were associated with increased complement activation.

