

VITREO-RETINA

Indication and Outcome for Laser Treatment among Adult Patients in South Western Nigeria

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Introduction: LASER is an acronym for light amplification by stimulated emission of radiation^[1] has been popularized more especially in the developed countries of the world e.g. United State of America (U.S.A), United Kingdom (U.K), Canada, Japan, etc. in the last 2 decades in the management of blinding eye diseases from the anterior segment to the posterior segment of the eye. It is not far fetching from the beneficial attribute of it that in U.S.A alone 500,000 weekly LASER sessions and 24 million annual LASER sessions are carried out at the cost of \$4.6billion.^[2] LASER treatment is now a reality in Nigeria and it is playing a significant role in curtailing the menace of blindness.^[3] South Western Nigeria has several centers with LASER facilities and thousands of sessions had been carried out in the last decade; however indication and outcome of the procedure are yet to be evaluated in tandem with what is happening in the established developed world.

Design: Descriptive multicenter study^[4] was carried out in five different public (teaching hospitals) and private eye hospitals notable for their provision of LASER treatment between December 1, 2010–November 30, 2011. The calculated minimum sample size was 1459 and a total of randomly selected 1500 participants were studied. Prerequisites for indications for LASER treatment and outcomes were noted and analyzed.

Results: The most common studied age group of the subjects in the study was 60 years and above (609 [40.6%]) followed by those within the age range of 40–49 years (383 [25.53%]). Eight hundred and forty (840) were males (56%) and 660 were females (44%). The commonest indication for LASER among the study group was diabetic retinopathy (45.2%) followed by posterior capsular opacity (20%), primary open angle glaucoma (13.33%), angle closure glaucoma and painful blind eye each has (6.67%) participants. Retinal hole, retina tear and detachment were (1.53%), (0.73%), (3.73%) respectively. Nine hundred and eighty two (65.47%) of the participants had improvement in their vision after LASER treatment. 515 participants (34.33%) experienced same vision post LASER treatment. Three (0.2%) had further reduction in vision post LASER treatment. 418 (27.9%) had pain post LASER treatment. 0.586 (39%) had red eyes post LASER treatment. 227 (15.1%) had raised intraocular pressure (IOP) above 21 mmHg immediate post LASER treatment. In one month post treatment the IOP of 216 (14.4%) participants has returned to desired target pressure below 21 mmHg. 11 (0.7%) cases of the study group had IOP above 21 mmHg after 1 month post LASER treatment.

Conclusion: In this study LASER treatment was found to be effective in the treatment of diabetic retinopathy,^[5] glaucoma,^[6] and posterior capsule opacification^[6] among adult patients in South Western Nigeria. As continuing clinical research further defines the operating characteristics, indications and noted outcomes for the use of existing and newer generations of LASERS, ophthalmologists will be able to treat a broader spectrum of eye diseases with greater precision and safety.^[7] With acceptability; the use of LASERS is expected to increase in developing countries of the world.^[8]

Special Appreciation

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Partial Central Retinal Vein Obstruction Combined with Central Retinal Artery Occlusion in a Sickle Cell Disease Patient

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Introduction: The ocular manifestations of sickle cell disease are diverse and result from vascular occlusion, which may occur in the conjunctiva, iris, retina, and choroid. Central retinal vein occlusion (CRVO) and central retinal artery occlusion (CRAO) occurring simultaneously in a sickle cell disease (SCD) patient has not been previously documented to the best of our knowledge.

Case Report: A 46-year-old known sickle cell disease (Hb SS) patient presented with a 3 day history of sudden painless loss of vision in her left eye. On ocular examination the right eye had a best corrected visual acuity (VA) of 6/6 with normal anterior segment. Funduscopy revealed a pink disc with slightly tortuous veins and a flat retina. The left eye had a VA of hand movement and funduscopy revealed a hyperemic disc with blurred margins, tortuous veins, attenuated arteries and only two intraretinal haemorrhages. The retina was edematous but there

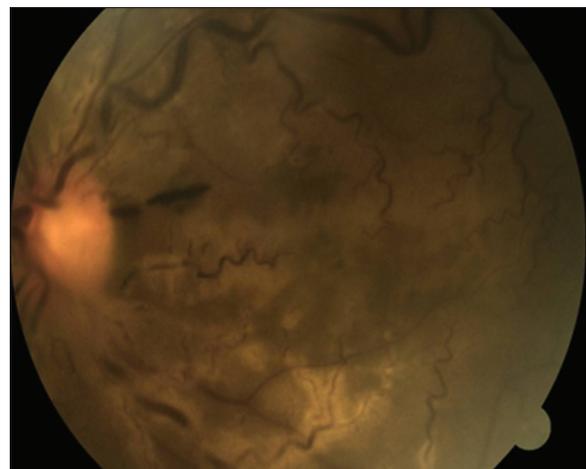


Figure 1: Left eye showing hyperaemic disc, dilated tortuous vessels, disc haemorrhage and retinal oedema

Abstracts

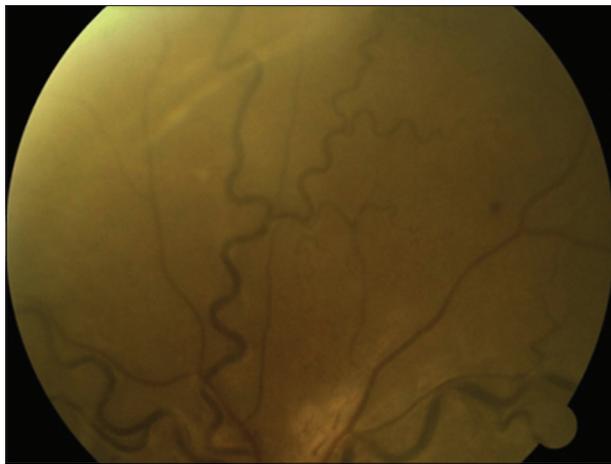


Figure 2: Superior retina in left eye showing dilated tortuous vessels, a small intraretinal haemorrhage and retinal oedema

was no cherry red spot at the macula and no intra-arterial embolus was visualized [Figures 1 and 2]. The intraocular pressures were normal in both eyes. A diagnosis of a left partial CRVO combined with CRAO was made on clinical grounds. She was given 2 doses of intravitreal injection of bevacizumab (1.25 mg/0.05 ml) 6 weeks apart. Her VA 2 weeks after the second dose of bevacizumab injection was counting fingers at 1 meter. On funduscopy the disc had become pale with attenuated vessels and the macula was the only portion of the retina still edematous.

Discussion: There have been several reported systemic and ocular associations of combined CRVO and CRAO^[1] but none in SCD. The features of combined CRVO and CRAO are acute unilateral visual loss with retinal edema with or without a cherry red spot at the macula, retinal hemorrhages, tortuous veins, delayed arterial dye filling of arteries and prolonged arteriovenous transit time in fluorescein angiography.^[2] If the CRVO is however partial, retinal hemorrhages will be few.^[3] Studies have shown that treatment of combined CRVO and CRAO using ophthalmic intra-arterial fibrinolysis with urokinase appears to be beneficial.^[4] Intravitreal bevacizumab has also been used in the management of retinal arteriovenous occlusions in a limited number of patients with promising results.^[5] The prognosis of combined CRAO and CRVO is very poor, and careful follow up over months or years is required as affected eyes tend to develop neovascular glaucoma.

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Macular Thickness Measurements using Stratus Optical Coherence Tomography in Healthy Nigerian Eyes

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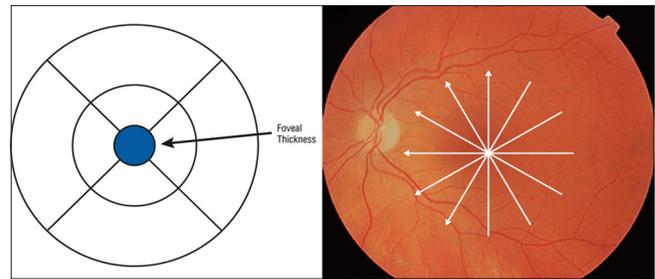


Figure 1: OCT macular map

Background: Macular thickening and accumulation of fluid in the macular region cause profound visual loss. The advent of optical coherence tomography (OCT) enables clinicians to detect and measure these changes and to monitor interventions. It is pertinent to have knowledge of the normal parameters of macular measurements using OCT for the proper evaluation of these conditions.

Objectives: To determine the normal macular thickness measurements in healthy eyes using the Stratus OCT and examine the relationship of these parameters with age, gender, and axial length.

Methodology: This study was a cross-sectional observational study. Subjects were randomly selected from the ophthalmology OPD of the ABU teaching hospital Shika-Zaria. 45 eyes of 45 healthy subjects aged between 18 and 73 underwent macular thickness measurement consisting of a 6-mm radial scan centered on the fovea (stratus OCT, fast macular scan protocol). The macular parameters were correlated with age, gender and axial length. The statistical analyses used were Pearson's coefficient of correlation, linear regression, and paired t-test with the analyze-it[®] software for Excel.

Results: The mean age of the subjects was 35.7 years (±13 years). Mean Foveal thickness (MFT) was 170.6 μm standard deviation (SD 17.5 μm), mean minimal Foveal thickness (MMFT) was 142.8 μm (SD 20.6 μm) and mean foveal volume (MFV) was 0.135 mm³ (SD 0.014 mm³). There was no correlation between any of the above parameters with age and axial length. MFT was higher in males (176.6 μm) than females (167.9 μm) but this difference was not statistically significant.

Discussion: There was no correlation between axial length and MFT and CFT. This was similar to Wakitani *et al.*'s findings but differed from Duan *et al.* in their Handan study who found a positive correlation between the mean CFT, MFT and axial length. Mean foveal thickness was higher in males (176.6 μm) as compared to females (167.9 μm) as was Mean CFT but this difference was not statistically significant. This agreed with findings by Chan and Adhi in their studies but Lawal and Duan both found statistically significant gender differences

Conclusion: This study provides normative Macular thickness values for Nigerian eyes in diagnosis and investigation of macular disorders. Age, Gender and Axial length have no significant effect on macular thickness parameters.

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Normal macular thickness measurements using optical coherence tomography in healthy eyes of adult Chinese persons: the Handan Eye Study. *Ophthalmology* 2010;117:1585-94.

Posterior Segment Eye Diseases in Ijebu, Nigeria

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Introduction: Posterior segment eye diseases (PSEDs) and the individual diseases they are made of are a major cause of blindness in sub-Saharan Africa (SSA).^[1] Grouped together, it is the second commonest cause of blindness after cataract ranging from 13% to 37%.^[1] In the Nigeria national blindness and visual impairment survey, PSED is the second largest cause of bilateral blindness.^[2] Presently many centers have the facilities and personnel to treat PSEDs unlike in the past in Nigeria and other developing countries.^[3-5] In Ogun state,

Eye Foundation Centre has these facilities and manpower and it is a major referral center.^[6]

Aims/Objective: To review cases of PSEDs seen at the Eye foundation Centre Ijebu, Nigeria in a 5 year period for planning purposes.^[6-8]

Materials and Methods: Data was collected from patients' case notes from January 2006 to December 2011. A systematic sampling of 468 patients from 1173 case notes of patient with (PSEDs) was done. Information retrieved was: age, sex, town of residence and diagnosis. All patients were examined by the Glaucoma and the vitreoretinal specialist as the case may be. They had visual acuity, refraction, slit lamp examination (including intraocular pressure (IOP) with Goldman applanation tonometer), and dilated fundoscopy with BIO, slit lamp using 20 D, 78 D and 90 D respectively. The glaucoma patients in addition had central visual field, CCT, fundus photograph and in some cases OCT done in addition to the above.

Results: Males were much more than females 295 (63%) to 173 (37%). Mean (SD) of the age is 59.98 (17.67) years and the range is 5-95 years. The frequency of the diseases increased with age peaking at 70 years and above. Glaucoma is the commonest cause of attendance 276 (59%) followed by diabetic retinopathy and macular diseases (cystoid macular edema, macular scars and holes 29 (6.19% each) and retinal detachment 20 (4%) mainly.

Discussion: Facilities are much more available now both in private and public hospitals in Nigeria to diagnose and treat PSEDs. Same applies to personnel. Therefore more diagnosis of PSEDs is expected to increase unlike before. The result from the eye foundation center in Ijebu is not comparable with results from most centers in Nigeria because most of the hospital-based studies done are on retinal diseases. Not including glaucoma which is in most cases treated as a single entity. There is no waiting list. Glaucoma is the commonest cause of PSEDs, followed by diabetic retinopathy and macular diseases. This is comparable in the absence of cataract to the causes of blindness and visual impairment in the Nigerian National survey.^[2,9] and review of population based studies of PSEDs in SSA.^[1]

Conclusion: Glaucoma, diabetic retinopathy and macula diseases were noted as the commonest PSEDs in Ijebu division in south-western Nigeria.

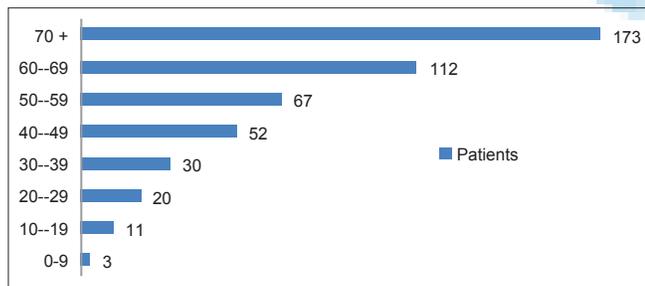
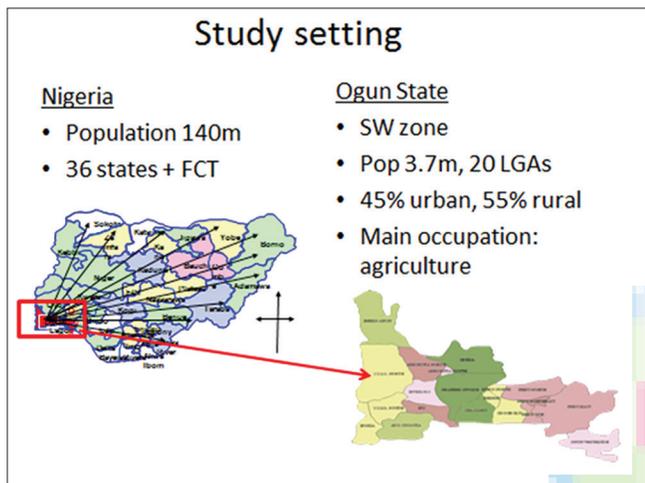


Figure 1: Distribution of patients by age group

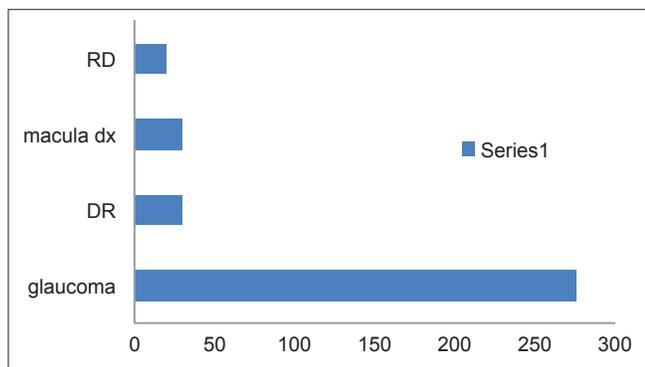


Figure 2: Major PSEDs Ijebu, Nigeria

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