

**" A CROSS-SECTIONAL STUDY TO DETERMINE THE ROLE OF
IRIS FLUORESCEIN ANGIOGRAPHY IN CHRONIC DIABETIC
PATIENTS BEFORE CATARACT SURGERY "**

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BACKGROUND OF STUDY

Diabetic Iridopathy (DI) has long been known as the silent thief of vision as it is often overlooked in the background of obvious and common Diabetic Retinopathy (DR). The dense brown melanocytes seen in our population and lack of appropriate technology to study the pattern of flow of blood through the iris vasculature has lead to slit lamp examination of the iris as one of the sole clinical gateway for detecting abnormal iris vasculature. However, slit

lamp confesses only the severe and obvious degrees of iris vasculature abnormalities many a times only at the penultimate stage of neovascular glaucoma.

In our study, we try to re-establish the long forgotten role of Iris Fluorescein Angiography (IFA) in early detection of iris vasculature abnormalities and thus be of more help in predicting the retinal status (alterations in the blood retinal barrier) in diabetic patients with dense cataract precluding the direct fundus examination. In diabetic patients it is important that we establish what type of retinopathy is behind either cataract or other types of dioptric media opacities, because serious complications can develop in a patient operated on without this knowledge.

AIM OF THE STUDY:

- 1) To determine the role of iris fluorescein angiogram in detecting iris vessel abnormalities in diabetic patients.
- 2) To compare the fluoroscopic changes seen in iris with stage of diabetic retinopathy in diabetic patients with mature cataract .

METHODOLOGY:

50 patients with diabetes mellitus and mature cataract who were admitted in to the wards of Department of ophthalmology ,GRH Madurai ,between January and June 2017 ,satisfying the inclusion exclusion criteria and who obliged with written consent were taken up for this study.

A detailed , complete ocular examination was made in all subjects for both eyes. After hypersensitivity test and under anaesthetist monitoring iris fluorescein angiogram was

performed using standard model zeiss fundus camera with dual filter system and objective settings for anterior segment photography. Diabetic iridopathy and diabetic retinopathy was classified based on abbreviated modified Airle House classification .Cataract extraction was performed by phaco emulsification and within 2 weeks from the date of IFA routine fundus colour photography was taken and wherever necessary Fundus Fluorescein Angiography (FFA) was performed.

The observations made were recorded in the master chart and the data analysis was done with the help of computer by using Graphpad prism7software and mean , Standard deviation and 'p' value were calculated through Fisher's exact test , pearson correlation and p value of <0.05 was taken as significant.

RESULTS:

The prevalence of Diabetic iridopathy was 32% in our study. Fluorescein dye leakage (Age Related Dye leak) which was transient and trivial with no specific pattern along the pupillary border is considered physiological after 50 years of age and thus included in the grade 0 Diabetic iridopathy group. Some recognisable patterns of abnormal iris vasculature were observed viz. loops, bifurcations and sprouts. But such patterns showed no significant correlation to the severity of iridopathy nor were they specific for diabetic iridopathy.

According to our study IFA is found to have a low sensitivity (15%) and excellent specificity (96.07%) in predicting absence or presence of lower grades of Diabetic Retinopathy. However, the sensitivity (67%) and specificity (100%) of IFA in predicting higher grades of NPDR is substantially high which thus reinforces its role in heralding the occurrence of proliferative DR well ahead of clinical fundus changes.

The two-tailed p value was calculated with the Fisher's exact test with and was found to be 0.0416, thus being statistically significant. The coefficient of correlation is 0.6119 and the

coefficient of determination being 0.3744. This means that the clinically seen correlation between the Diabetic Retinopathy and Iridopathy in our study is also statistically significant proving the usefulness of Iris Fluorescein Angiography in predicting DR again.

Thus, iris fluorescein angiography yields valuable information on status of retinopathy and is a helpful basis for avoiding complications (like vitreous hemorrhage, retinal hemorrhage, iris bleed or hemorrhage at angle, uveitis, post operative rise in IOP) when scheduling eyes with dioptric media opacities for cataract surgery.

CONCLUSION:

Using iris angiography we were able to detect severe form of DR by staging the Diabetic Iridopathy - that is, those most likely to present major complications during and following surgery.

Clinically, when iris neovascularisation is detected in an eye in which it is impossible to evaluate retinopathy because of opacity in the lens or other media, concomitant serious retinopathy must be presumed, and therefore great care must be taken in the management of the eye. Before cataract extraction or vitrectomy, either cryocoagulation, transscleral photocoagulation or intravitreal Anti VEGF must be seriously considered to destroy the non-perfused peripheral areas of the retina. Sometimes endophotocoagulation carried out in the course of pars plana vitrectomy, or photocoagulation done in the early post op can produce good results.

Above all, iris fluorescein angiography being a valuable diagnostic, non-invasive procedure, also provides more information regarding integrity of blood retinal barrier even in an opaque media.

Our study thus proves that iris fluorescein angiography is more sensitive, specific and precise than slit lamp examination in revealing iris vasculature abnormalities.