MATERIAL & METHOD
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This study comprised of twenty five patients suffering from Diabetes mellitus. The patients were selected from eye Out Patients Department, diabetic clinic and wards of MAHARANI LAXMI BAI MEDICAL COLLEGE AND ASSOCIATED HOSPITAL, JHANSI. Only those patients formed the subject of this study, whose media of eye were clear. (i.e. whose fundus can be clearly visualised) and who had positive fundus findings on direct ophthalmoscopy or on fluorescein angiography, at least in one eye.

Biodeata of the patients were recorded in the form of Name, Age and Sex of the patients. A detailed history of the patient was recorded giving special emphasis to following points.

1) Age of the patient at the time of diagnosis of diabetes mellitus.

2) Total duration of diabetes mellitus.

3) Mode of treatment (Insulin dependent or noninsulin dependent).

4) Control of diabetes (compliance of treatment, regularity of monitoring urine and blood sugar).
v) General symptoms of patient.
vi) Ocular symptoms and any treatment if carried out.

vii) History of associated diseases like hypertension etc.

viii) Family history of diabetes mellitus or diabetic retinopathy.

Examination of the patient was carried out in detail as under.

1. General Physical Examination

General physical examination was carried out keeping in view any complications of diabetes.

2. Ophthalmic examination

Eyes of the patient were examined in detail as described below:

a) Anterior segment examination was carried out by oblique illumination to observe any change specially pertaining to new vessels on iris and lenticular opacities.

b) Aided visual acuity of both eyes was recorded.
Fundus examination was done with direct ophthalmoscope after full dilatation of pupils with phenylephrine (Drosyn) 10% eye drops.

3. **Systemic examination**

Systemic examination was done and any cardiac, renal, peripheral vascular or neurological complications were recorded.

4. Following investigations were done:

1. Blood sugar


**EQUIPMENT**

For fluorescein angiography a Carl Zeiss Fundus camera and Fluorescein Angiography unit was used. Negative film rolls of 35 mm, black and white ORWO 400 ASA were used for photography.

**PROCEDURE**

The patient was explained the whole procedure. The pupils of the patient was fully dilatated using drosyn 10% eye drops, instilling 1-2 drops every ten
minutes for three to four times.

An emergency tray containing medicines and equipment to deal with any adverse reaction to the fluorescein dye was kept ready in the F.A. Room.

The patients were subjected to sensitivity test by injecting a small drop of fluorescein dye subcutaneously before starting the actual procedure. If the patient is not sensitive to dye then the patient was seated on an adjustable stool placed next to the camera and his chin and forehead were adjusted on the frame. A fundus photograph of posterior pole of each eye was taken in the same focus a control photograph was taken with both exitus as well as barrier filters in position using flash intensity of 480 watts.

2.5 ml of sodium fluorescein (20%) was injected rapidly as a bolus through a 19 gauge needle inserted in the antecubital vein. Photographs were taken every second after the appearance of the dye in the choroidal vessels till filling of all retinal vessels. Then photographs were taken at interval of five minutes, fifteen minutes and thirty minutes. In case the patient had changes in peripheral fundus, photographs were taken after focusing the camera in that particular area.
As photographs of early phase of F.A. could not be taken simultaneously in both the eyes, they were taken from the second eye after completing the photographs of arteriovenous phase in the first eye.

Any unpleasant side effect or reaction to the dye was recorded. Patient was informed about yellowish green discoloration of urine for twenty four hours, yellowish skin staining for 12–24 hours and yellow or blue purple hue of visual fields.

Positive prints were made and these fluorescein angiograms were studied.

All the observations were summarized and the results analysed in the light of previous studies. Most of the figures were reduced to nearest round figure for discussion.

The patients were divided into two groups depending upon the type of treatment required to control diabetes in them as follows.

1. Insulin dependent diabetes mellitus (IDDM).
2. Noninsulin dependent diabetes mellitus (NIDDM).

The retinopathy observed in the eyes of these patients was divided into two types depending upon the changes in fundus as follows.
1. Simple or Background diabetic retinopathy (SBR).
2. Proliferative diabetic retinopathy (PDR).

Further the patients were divided into three groups depending upon quality and regularity in control of diabetes mellitus as follows:

1. **Good Control Group**

   Included the patient who were regular and strict in treatment compliance and observed the diet controls as advised. Their fasting and post prandial blood sugar were within normal limits and urine was free of sugar most of the times.

2. **Moderate Control Group**

   Included the patients who were not very regular in the compliance of treatment but still carried out satisfactory control of diabetes mellitus. Their fasting blood sugar was normal, but post prandial blood sugar was above normal limits mostly. Urine sugar showed variable results.
5. Poor Control Group

Included the persons who were not regular about medicines and diet controls. Their fasting blood sugar was above normal limits and urine sugar positive, in the test, they got done rarely.

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