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## Epidemiology of Retinal and Choroidal Diseases Evaluated by Fundus Fluorescein Angiography

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**F**undus Fluorescein Angiography (FFA) has been firmly established as one of the crucial diagnostic aids for detecting ocular pathophysiologic mechanisms and monitoring the treatment of retinal vascular and macular diseases. The pioneers responsible for the significant innovation are Maumenee, Flocks and Coworkers, Chao and Miller. It was introduced into clinical use in 1961 by Novotny and Alvis. In our study we have analyzed the epidemiology of posterior segment diseases in patients undergoing FFA.

### Materials and Methods

60 patients of any age group undergoing FFA were studied in Department of Ophthalmology, M.Y. Hospital, Indore in the Year 2003-2005.

The epidemioloigal characteristics studied were:

(i) Incidence of various diseases, (ii) Relation with following demographic profile of patient

Age (from 20-80 years), both sexes, occupation (agriculture worker, labourers, office workers, student, miscellaneous).

**Table 1: Incidence of various posterior segment diseases, sex ratio and laterality**

Disease	No. of patients	Percentage	M : F	No. of unilateral or bilateral patients
Diabetic retinopathy	27 (including 13 CME)	45%	2 : 1	All bilateral
Hypertensive retinopathy	6 (including 3 DR, 1 BRVO, 1 BRVO with CME, 1 CRAO)	10%	1 : 2	All bilateral
BRVO	9 (including 2 diabetic and 1 with CME)	15%	4 : 5	All unilateral
CRVO	2	3.33%	Both male	Both unilateral
CRAO	1	1.66%	Male	Unilateral
Sickle cell retinopathy	1	1.66%	Male	Unilateral
Eales disease	4	6.67%	3 : 1	3 unilateral, 1 bilateral
AMD	6	10%	2 : 1	1 unilateral, 5 bilateral
Lamellar hole	5	8.33%	All male	Unilateral
Active choroiditis	6	10%	1 : 1	4 Unilateral, 2 bilateral
CME	18	30%	5 : 4	14 unilateral, 4 bilateral

**Table 2: Incidence of retinal and choroidal diseases with respect to different age groups (From 20-80 years)**

Disease	20-30 years	30-40 years	40-50 years	50-60 years	60-70 years	70-80 years
DR	-	-	5	12	7	3
HT	-	-	-	4	-	2
BRVO	-	-	-	2	1	6
CRVO	-	-	-	-	-	2
CRAO	-	-	1	-	-	-
Sickle cell retinopathy	-	1	-	-	-	-
Eales disease	3	1	-	-	-	-
CME	-	-	1	11	4	2
Lamellar hole	2	3	-	-	-	-
ARMD	-	-	-	2	4	-
Active choroiditis	-	1	4	1	-	-

**Table 3: Incidence of diseases with respect to occupation**

Disease	Agriculture worker	Labourer	Office worker	House wife	Student	Misc.
DR	-	-	12	9	-	6 retired
HT	-	-	2	4	-	-
BRVO	-	-	-	5	-	4 retired
CRVO	-	-	-	-	-	2 retired
CRAO	-	-	1	-	-	-
Sickle cell retinopathy	-	-	1	-	-	-
Eales disease	1	1	-	-	2	-
ARMD	-	-	2	-	-	4 retired
Lamellar hole	1	3	-	-	-	-
CME	-	-	-	-	-	-
Active choroiditis	-	-	3	3	-	-

## Results

Diabetic retinopathy was most common presentation followed by CME and BRVO. 50-60 years age group showed maximum incidence of diabetic retinopathy, hypertensive retinopathy and CME. BRVO and CRVO were common in 70-80 years age group. ARMD was common in 60-70 years, active choroiditis in 40-50 years age group and Eales and lamellar hole in younger age groups. More often affected group were males except for hypertensive retinopathy and BRVO. Few diseases like BRVO, CRVO, CRAO, sickle cell retinopathy and lamellar hole were

totally unilateral. Office workers and housewives were the most affected groups.

## Discussion

According to WESDR (Wisconsin Epidemiological Study of Diabetic Retinopathy) 4 year incidence of diabetic retinopathy was 40.3% (1984).<sup>1</sup> Hayrey SS and Zimmerman found venous occlusion to be common in 6<sup>th</sup> decade and to be unilateral in majority of patients.<sup>2</sup> In our study BRVO and CRVO were common in 70-80 years age group. Seeing the trend of diseases in various occupational groups, the sedentary lifestyle can be held responsible for it.

### References

1. Klein R, Klein BEK, Mass SE. The Wisconsin Epidemiologic Study of Diabetic Retinopathy III. Prevalence and risk of diabetic retinopathy when age at diagnosis is 30 years or more. *Arch Ophthalmol* 1984;102:527.
  2. Hayrey SS, Zimmerman MB, Podhajsky P. Incidence of various types of retinal vein occlusion and their recurrence and demographic characteristics. *AMJ Ophthalmol* 1994;117:429.
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