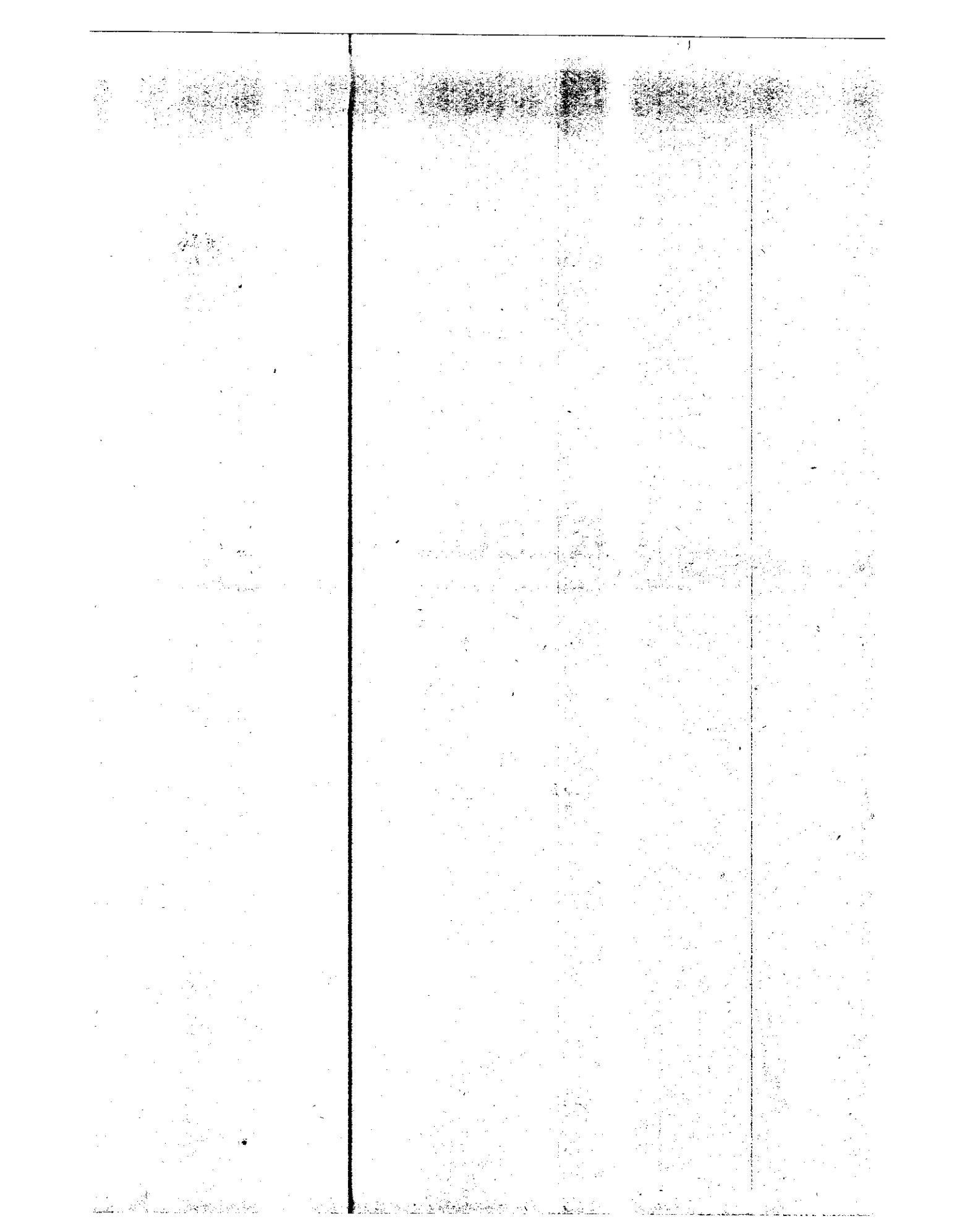
RESULTS



RESULTS

This study included 50 patients with macular edema; 34 cases (68 %) were females and 16 cases (32 %) were males. Their ages ranged from 28-70 years with a mean of $\pm$53.6 years.

out of these 50 patients; 36 patients (72%) had diabetes for more than 10 years while 14 patients (28%) had diabetes for 10 years or less.

Eighteen patients were non - insulin dependent (36 %) and 32 patients were insulin dependent (64 %).

In 43 patients (86 %) the onset of diabetes was at 35 years of age and older ie. "older onset diabetics".

While in the remaining 7 patients, (14 %) the onset was at an earlier age i.e "younger onset diabetics"

In the older onset diabetics group (43 patients) 27 were insulin dependent and 16 were non insulin dependent.

In the younger onset diabetics group (7 patients) 5 were insulin dependent and 2 were non - insulin dependent.

The studied 50 patients include 28 patients with unilateral macular edema 56% and 22 pateints (44%) with bilateral macular edema (44 eyes). So, the total number of eyes involved were 72 eyes.

out of the 72 eyes with macular edema, 31 eyes had focal macular edema and 41 eyes had diffuse macular edema.

On testing visual acuity 44 eyes had visual acuity 6/18 or more and 28 eyes with visual acuity less than 6/18.

In the group of V/A ≥ 6/18, 25 eyes had focal macular edema and 19 eyes had diffuse macular edema.

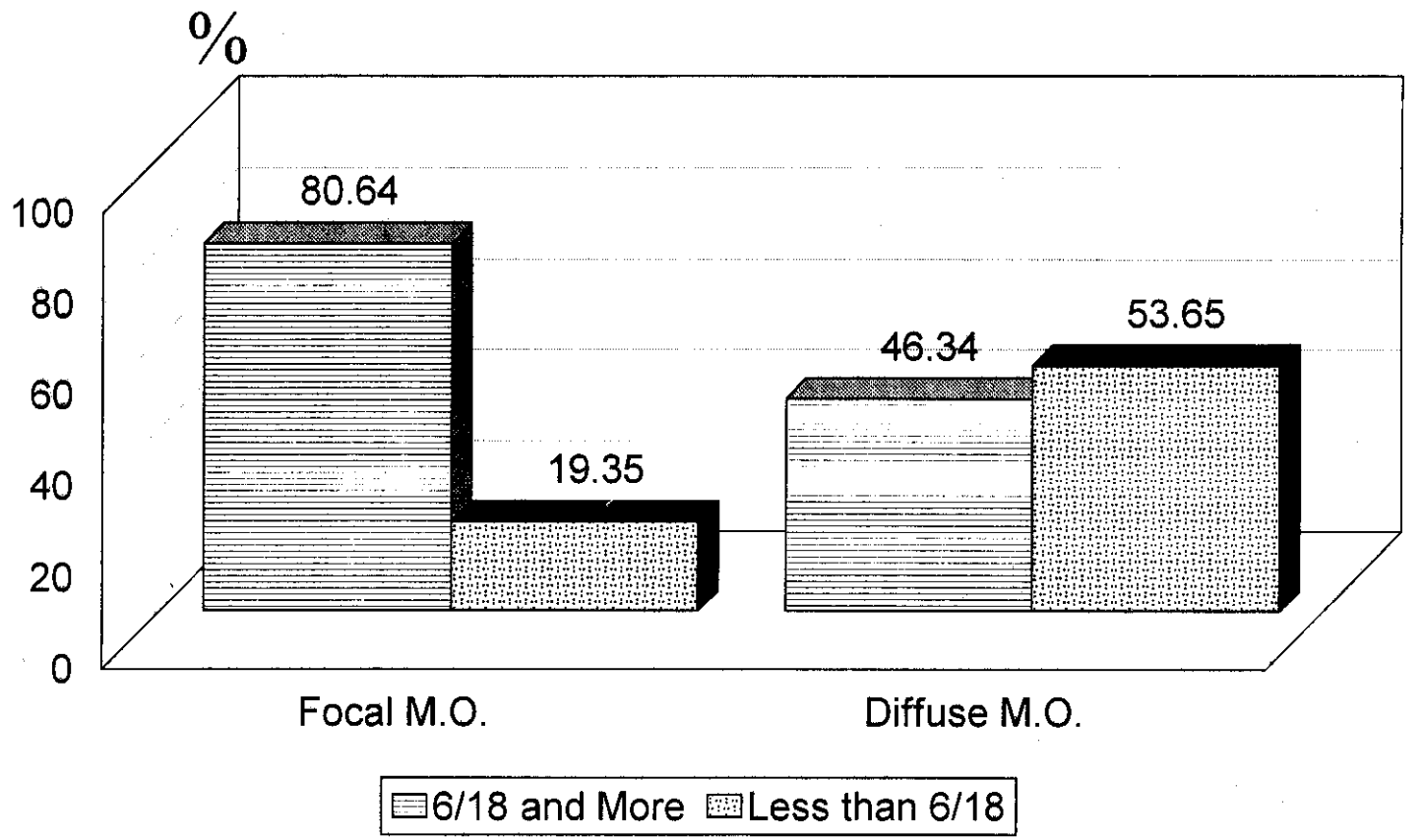
While the group of V/A < 6/18; 6 eyes had focal macular edema and 22 had diffuse macular edema. (Table 1)

Macular edema / V/A	Diffuse macular edema			Focal macular edema			Total	
	No. of Eyes	Percent		No. of Eyes	Percent		No.	Percent
		Per raw	Per column		Per raw	Per column		
≥ 6/18	19	43.18	46.34	25	56.78	80.64	44	61.12
< 6/18	22	78.57	53.65	6	21.42	19.35	28	38.88
Total	41	56.94		31	43.05		72	100

P < 0.05 significant difference

Table (1). Comparison between focal and diffuse macular edema as regard the initial visual acuity in the study population

Fig. (11) : The relation between type of macular edema and initial visual acuity



Among 50 patients with diabetic macular edema. 32 patients (64%) were IDD and 18 patients (44%) were NIDD.

Out of 32 patients who are IDD 17 patients with unilateral affection and 15 patients with bilateral affection so we have 47 eyes with IDD.

Out of 18 patients who are NIDD 11 patients with unilateral affection 7 patients with bilateral affection . So we have 25 eyes with NIDD (Fig 12)

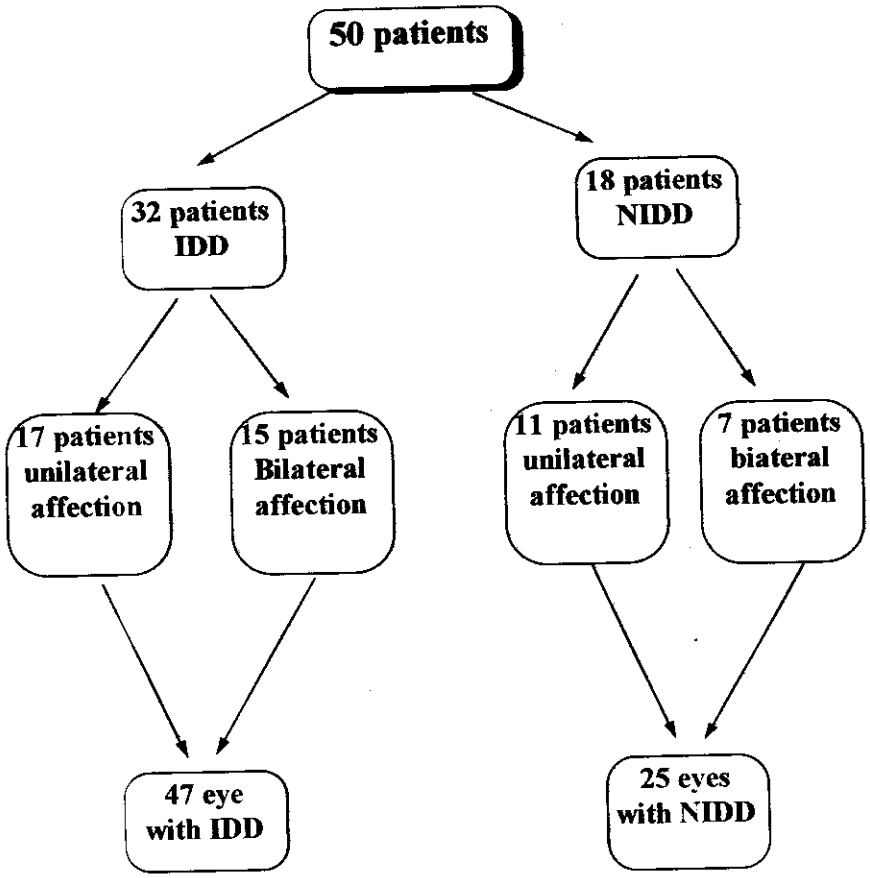


Fig. 12. Distribution of the patients according to type of Diabetes mellitus

Out of 72 eyes with macular edema 47 were IDD , and 25 were NIDD .

Among the 47 eyes who were IDD 24 had diffuse macular edema and 23 focal macular edema.

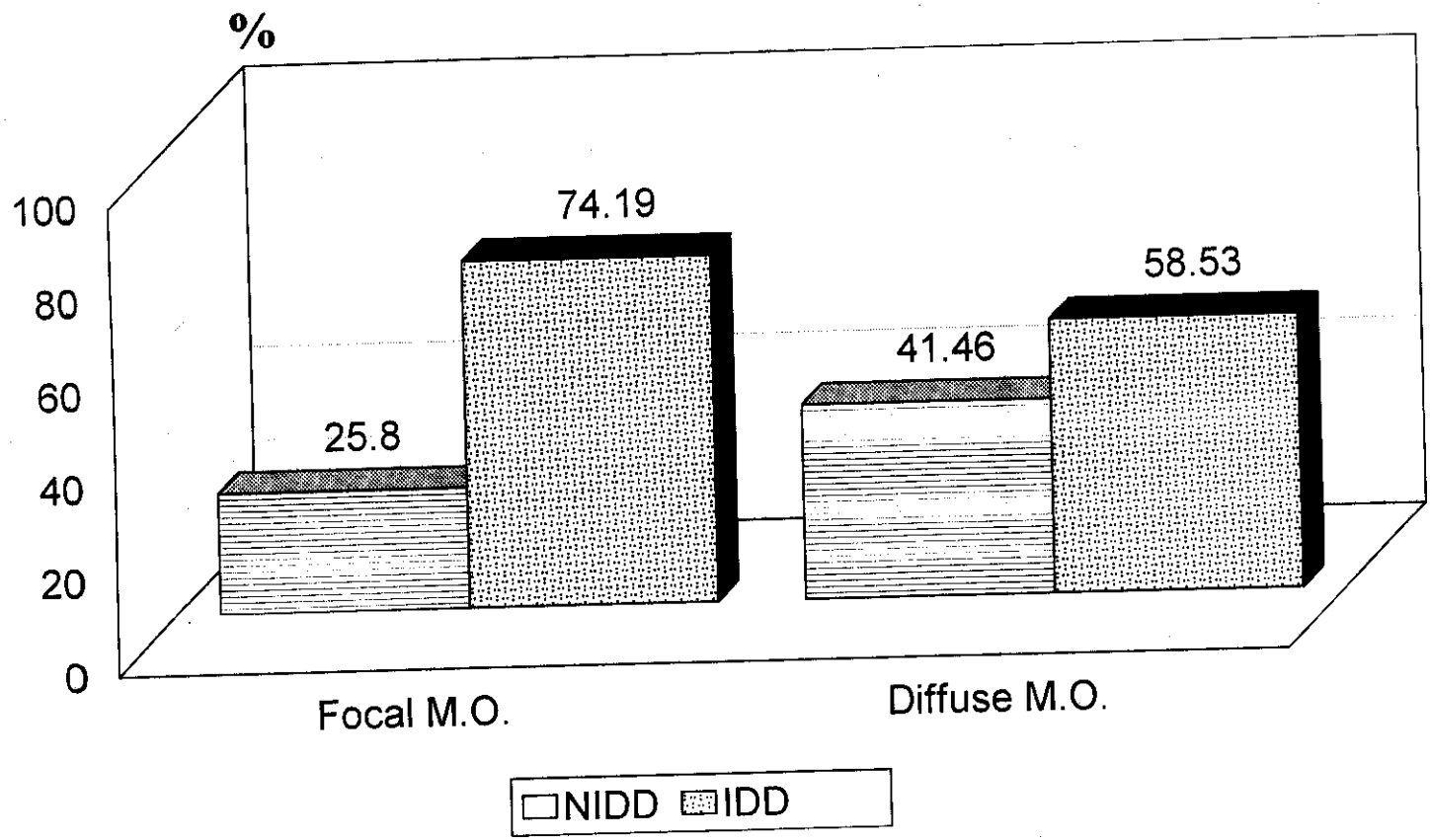
Among the 25 eyes who were NIDD 8 had focal and 17 diffuse macular edema. (Table 2)

Macular edema / Medical control	Diffuse macular edema			Focal macular edema			Total	
	No. of Eyes	Percent		No. of Eyes	Percent		No.	Percent
		Per raw	Per column		Per raw	Per column		
NIDD	17	68.00	41.46	8	32.00	25.80	25	34.72
IDD	24	51.06	58.53	23	48.93	74.19	47	65.26
Total	41	56.94		31	43.05		72	100%

$P < 0.05$ significant difference

Table (2). Comparison between focal and diffuse macular edema as regard the mode of treatment of diabetes in the study population

Fig. (13) : The relation between mode of treatment of diabetes and type of macular edema



Out of the 50 diabetic patients, 36 patients (72%) had diabetes for more than 10 years and 14 patients (28%) had diabetes for 10 years or less.

In the first group, with diabetes for more than 10 years, 18 patients had unilateral macular edema and 18 patient showed bilateral macular edema; forming 54 eyes with diabetes for more than 10 years.

While, in the second group, with diabetes for 10 years or less, 10 patient showed unilateral affection and 4, patients had bilateral affection. So we had 18 eyes with diabetes for 10 years or less. (Fig 14)

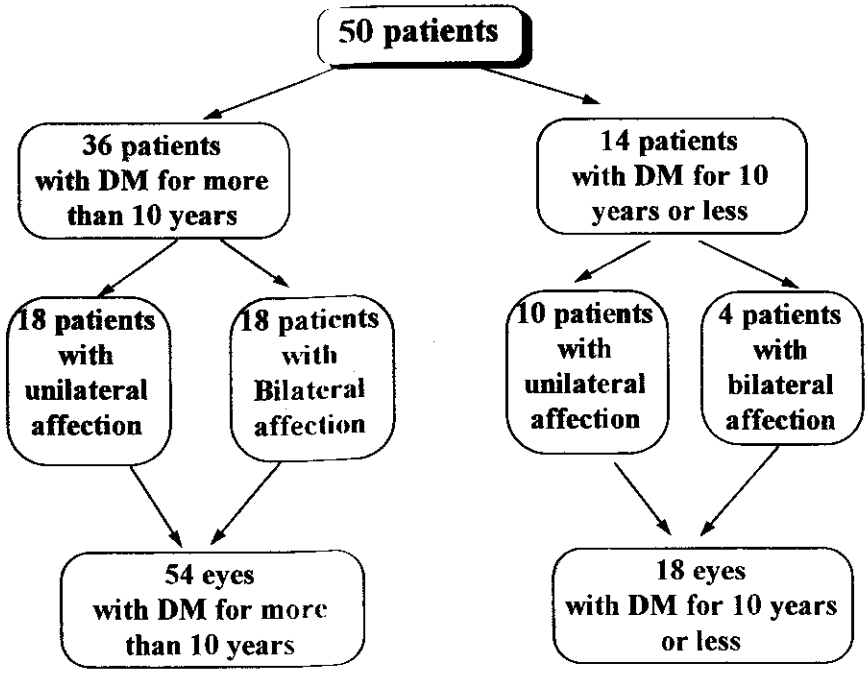


Fig. 14. Distribution of the patients according to duration of Diabetes mellitus

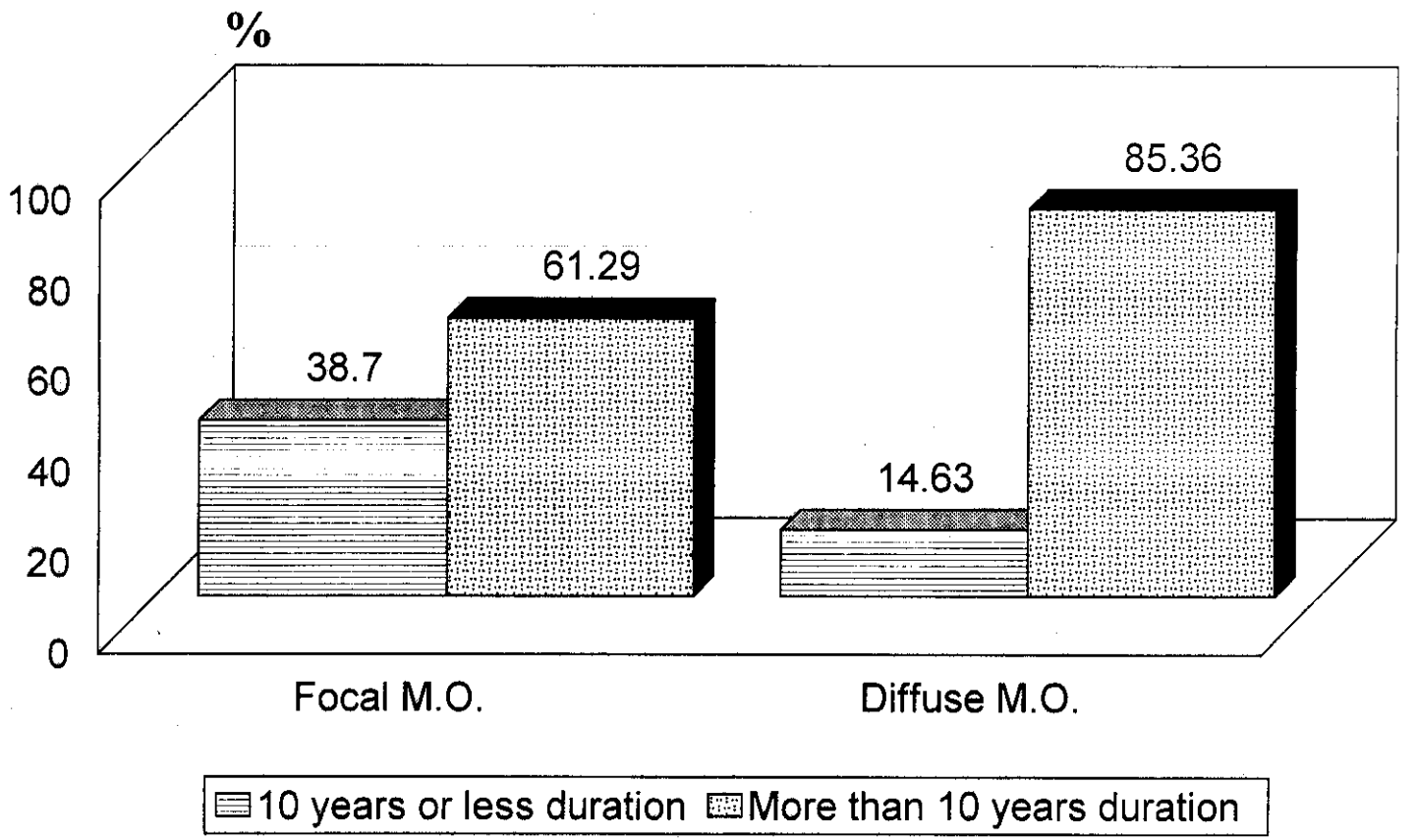
Out of 72 eyes 18 had duration for 10 years or less the remaining 54 eyes had longer duration than 10 years. (Table 3)

Macular edema / Duration	Diffuse macular edema			Focal macular edema			Total	
	No. of Eyes	Percent		No. of Eyes	Percent		No.	Percent
		Per raw	Per column		Per raw	Per column		
≤ 10 years	6	33.33	14.63	12	66.66	38.70	18	25.00
> 10 years	35	64.81	85.36	19	35.18	61.29	54	75.00
Total	41	56.94		31	43.06		72	100%

$P < 0.05$ significant difference

Table (3). Comparison between focal and diffuse macular edema as regard the duration of diabetes in the study population

Fig. (15) The relation between incidence of macular edema and the duration of diabetes



Eyes with focal macular edema (31 eyes), visual improvment occured in 7 eyes, 18 showed visual stabilization and 6 showed deterioration.

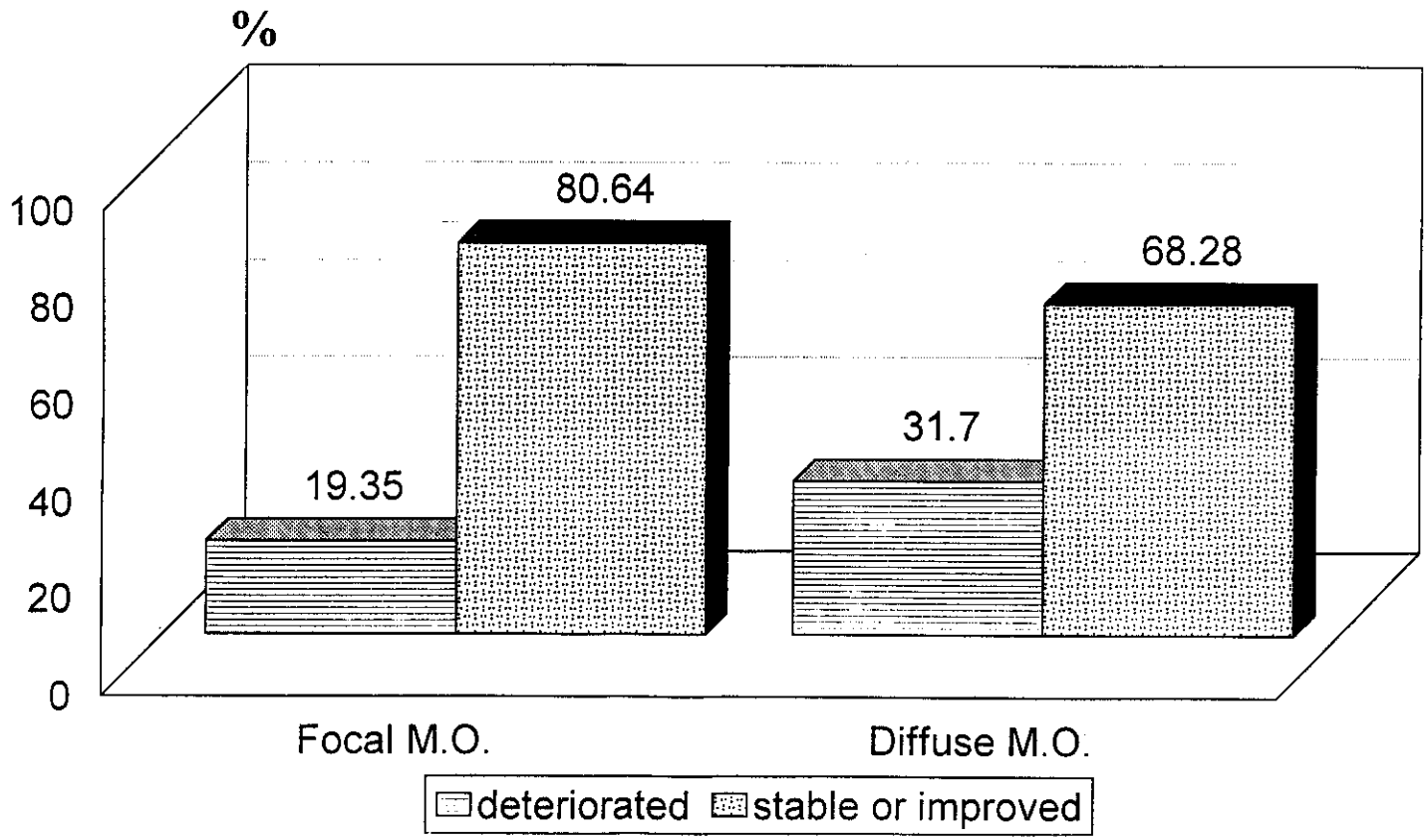
Eyes with diffuse macular edema (41 eyes), visual improvment occured in 6 eyes, stabilization occured in 22 eyes and deterioration occured in 13 eyes. (Table 4)

Macular edema / V / A	Diffuse macular edema			Focal macular edema			Total	
	No. of Eyes	Percent		No. of Eyes	Percent		No.	Percent
		Per raw	Per column		Per raw	Per column		
Stable	22	55.00	53.65	18	45.00	58.06	40	55.55
Improved	6	46.15	14.63	7	53.84	22.58	13	18.05
Deteriorated	13	68.42	31.70	6	31.57	19.35	19	26.38
Total	41	56.93		31	43.05		72	100%

$P < 0.05$ significant difference

Table (4). Comparison between focal and diffuse macular edema as regard visual results in the study population

Fig. (16) : The relation between type of macular edema and visual results



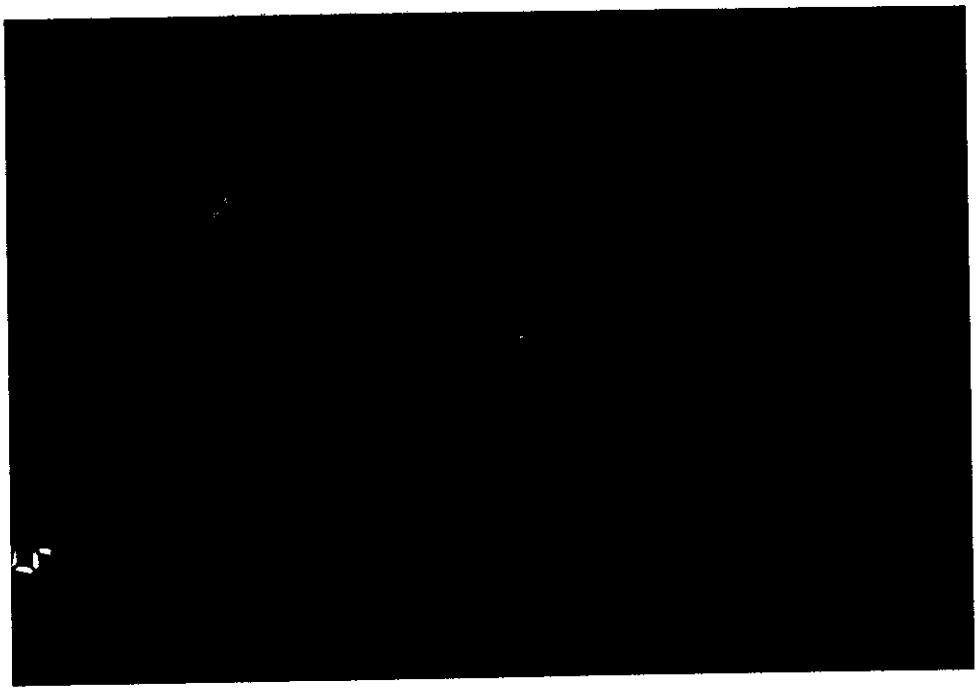


Fig 17 : Colored fundus photography of a case of focal macular edema

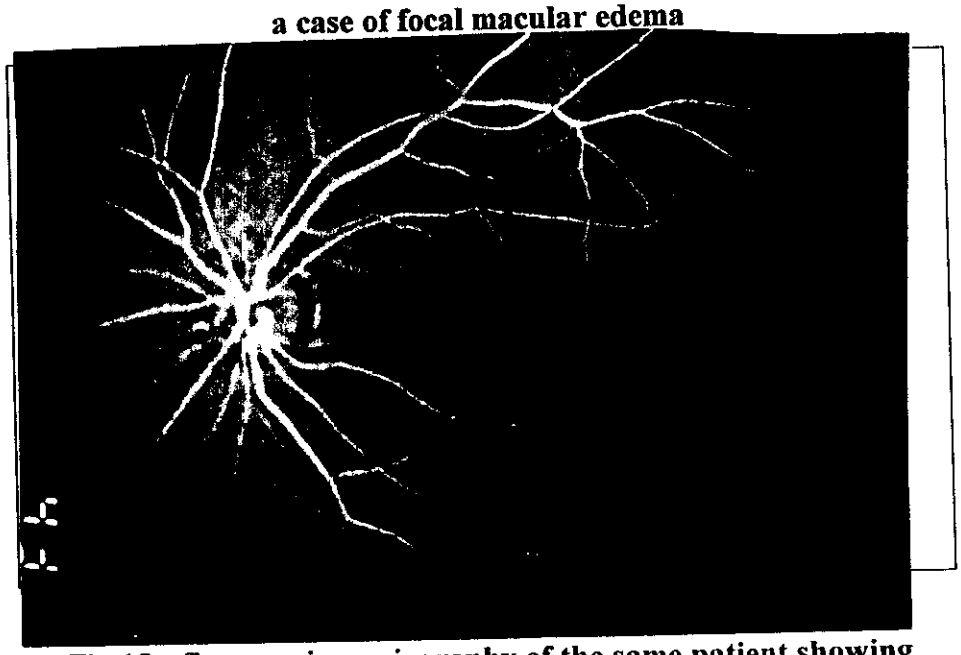


Fig 18 : fluorescein angiography of the same patient showing leaking Microaneurysms

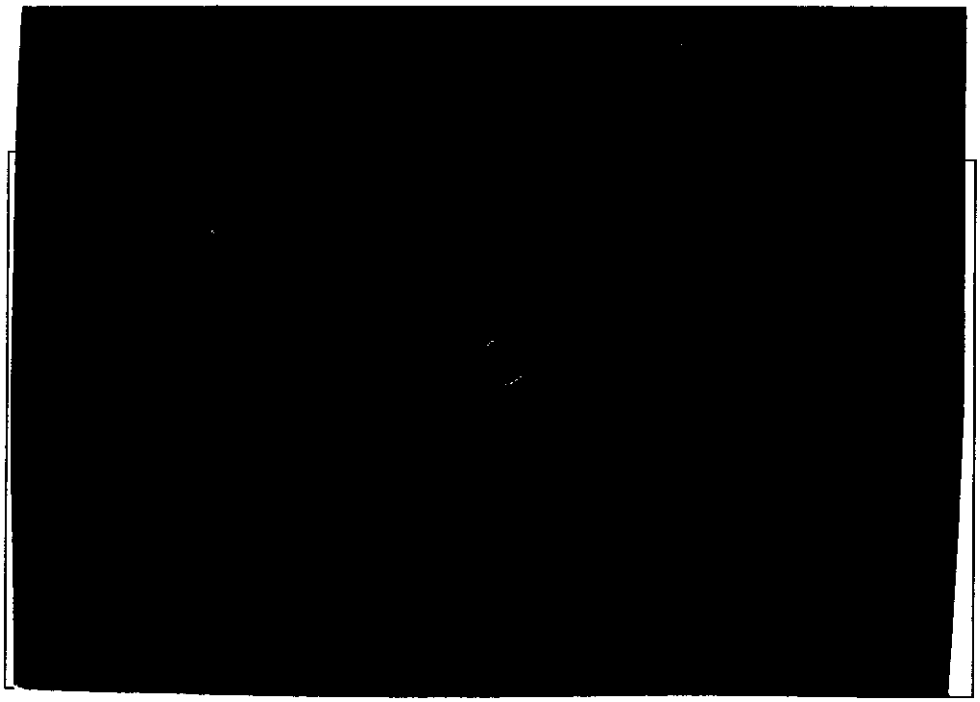


Fig 19 : The same patient (Fig. 17) after laser treatment showing laser marks

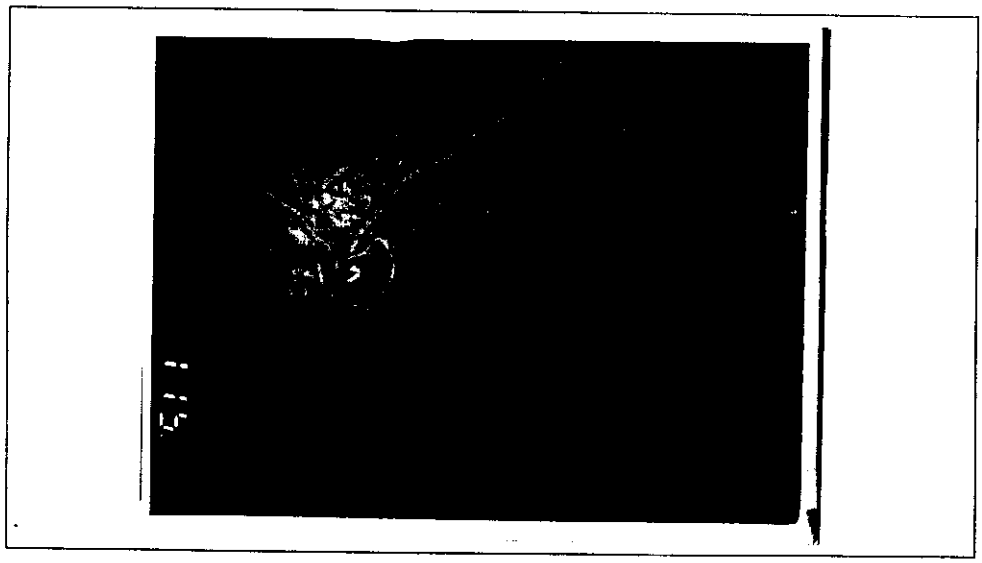


Fig 20 : Flourescein angiography of the same patient showing laser marks and disapearance of leaking foci

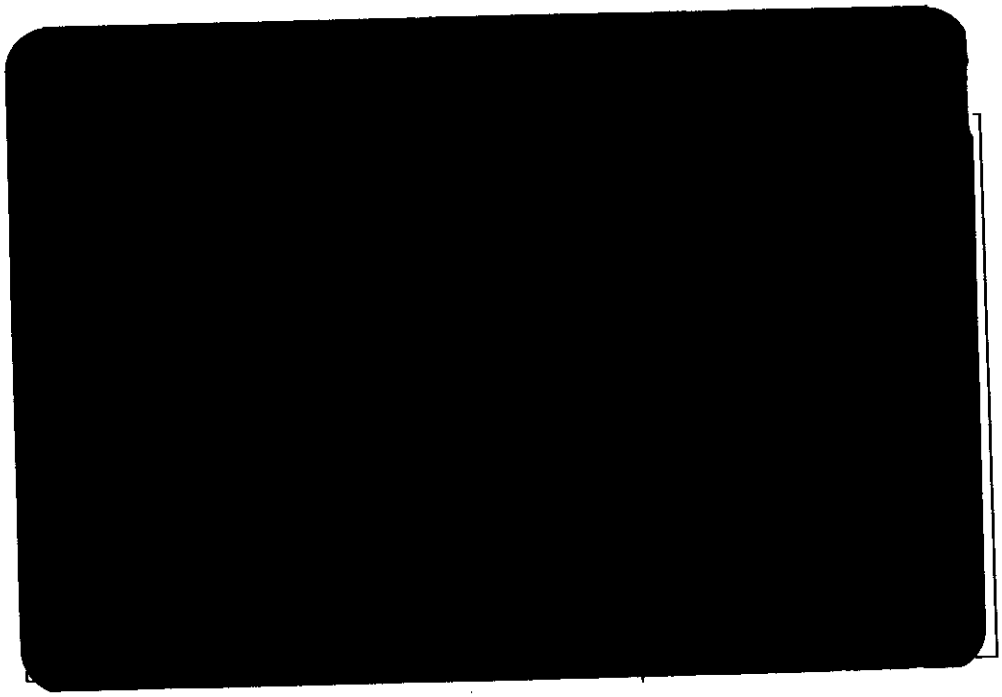


Fig 21 : Colored fundus photography of a case of focal macular edema

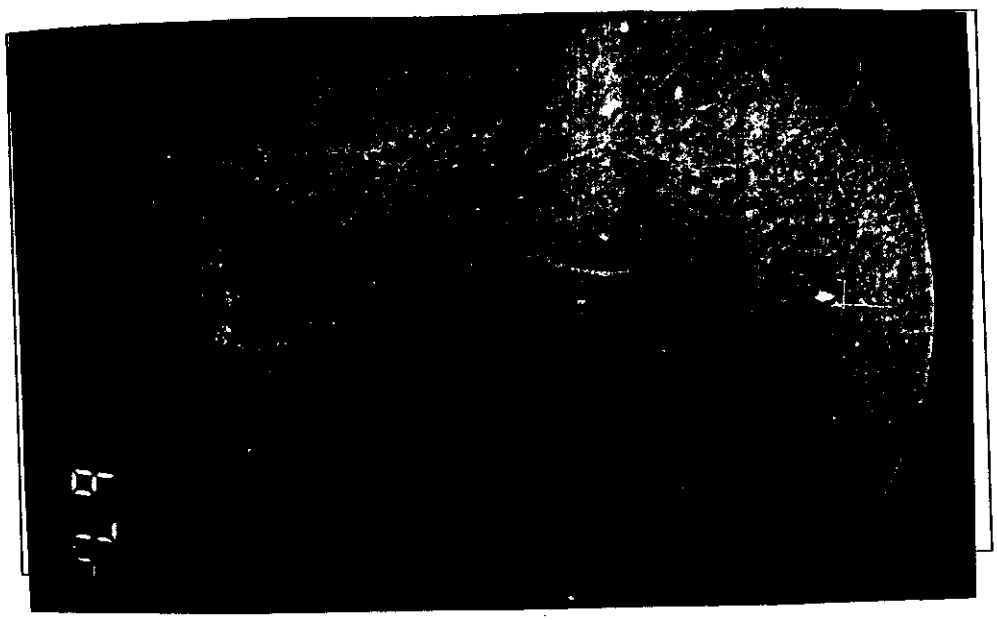


Fig 22 : Flourescein angiography of the same patient showing microaneurysms

Fig 23 : The same patient (Fig. 21) after laser treatment showing decrease of the hard exudates

Fig 24 : Flourescein angiography of the same patient showing laser marks and decrease of leaking foci

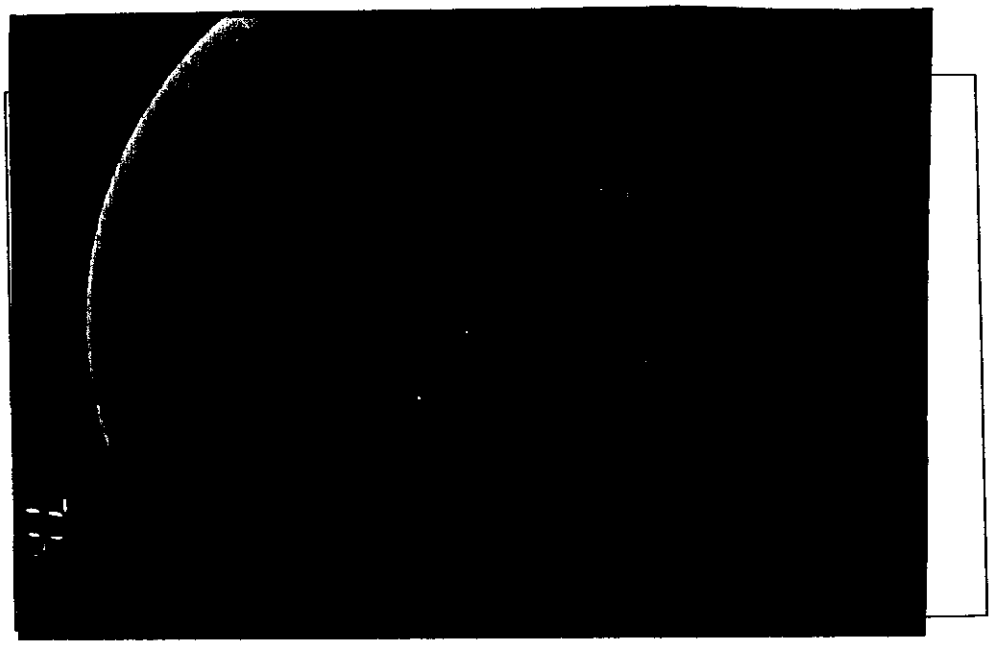


Fig 25 : Flourescein angiography of a case of focal macular edema showing microaneurysms

Fig 26 : The same patient after laser treatment with disappearance of microaneurysms

Fig 27 : Colored fundus photography of a case of diffuse macular edema

Fig 28 : Fluoresceine angiography of the same patient

Fig 29 : The same patient in (Fig. 27) after laser treatment with absorption of the hard exudates

Fig 30 : Fluorescein angiography of the same patient after laser treatment showing laser marks and dimineshed leaking foci

Fig 31 : A case of diffuse macular edema

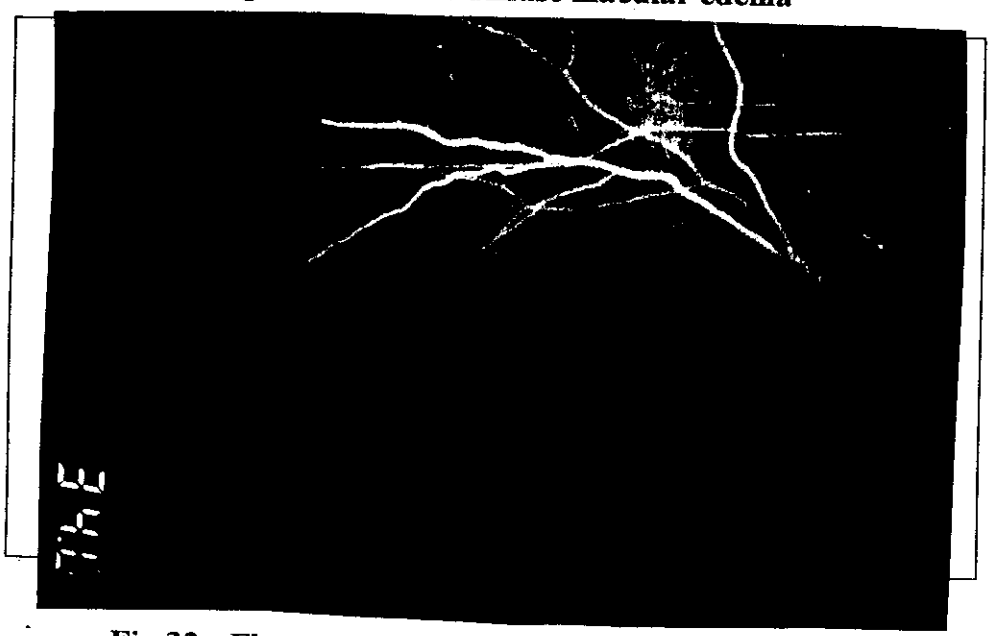


Fig 32 : Fluorescein angiography of the same patient

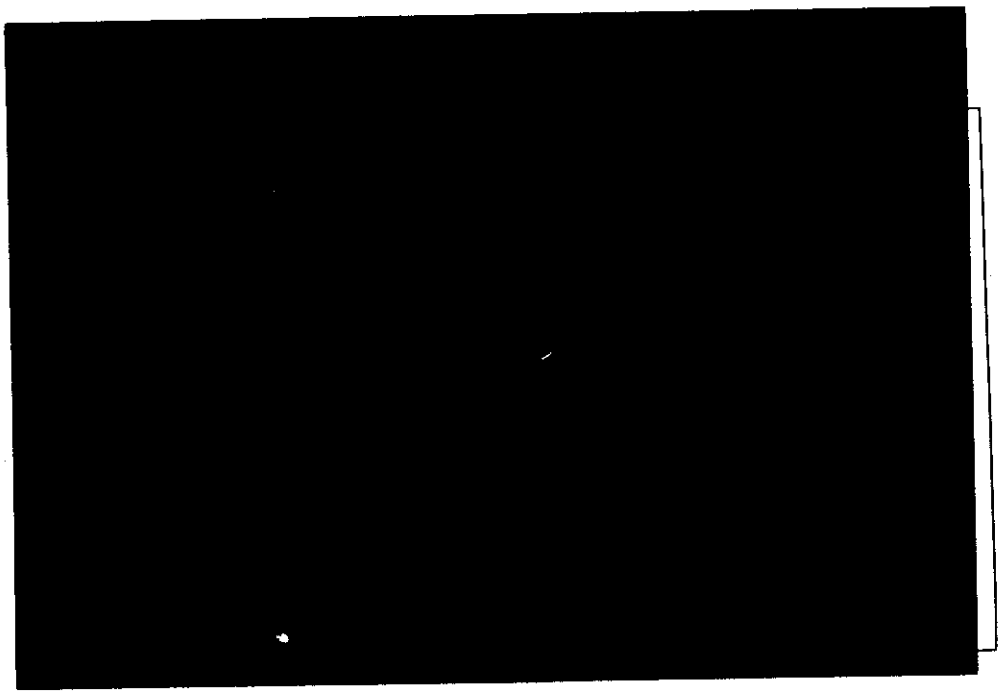


Fig 33 : The same patient in (Fig. 31) after laser treatment with persistance of the hard exudates

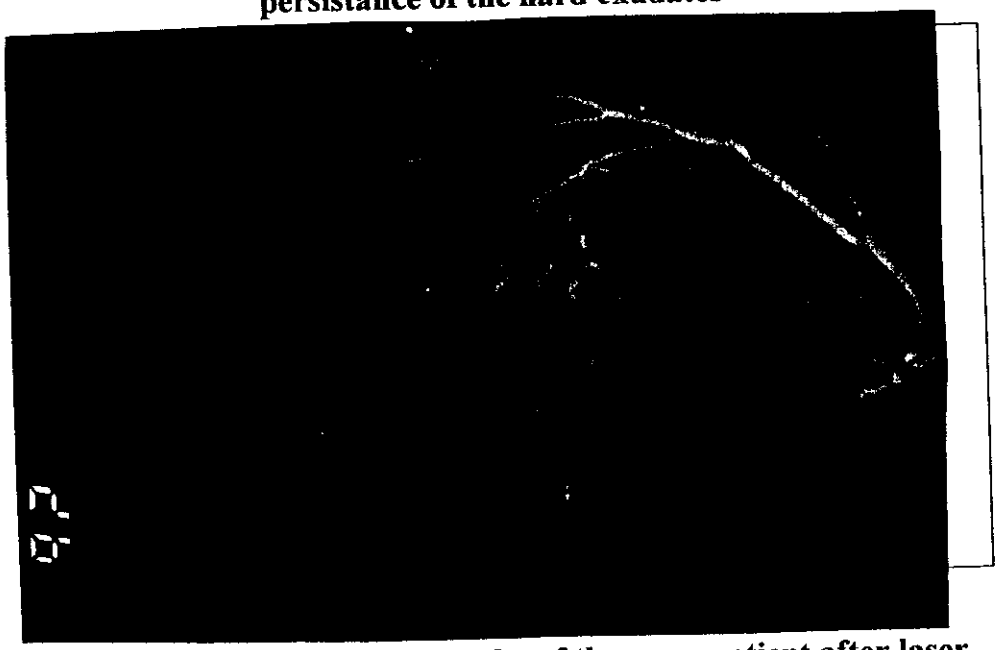


Fig 34 : Fluorescein angiography of the same patient after laser treatment showing laser marks and dimineshed microaneurysms

Fig 35 : Colored fundus photography of Diffuse Macular edema

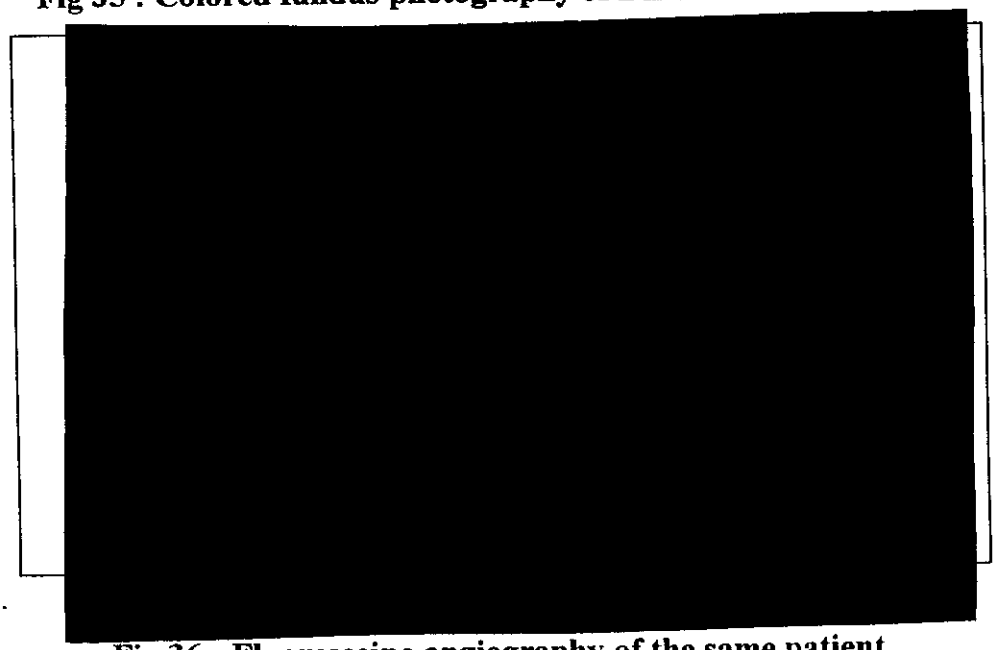


Fig 36 : Fluoresceine angiography of the same patient showing microaneurysms

Fig 37 : Same patient in Fig. (35) after laser treatment shows persistance of the macular edema and increase of hard exudates

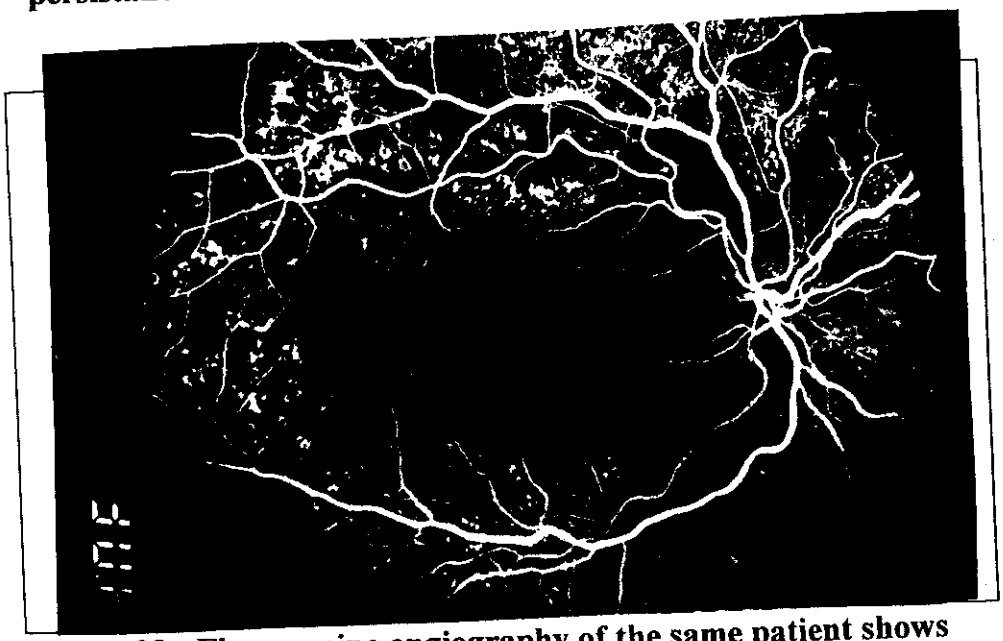


Fig 38 : Fluoresceine angiography of the same patient shows persistance of leaking microaneurysms

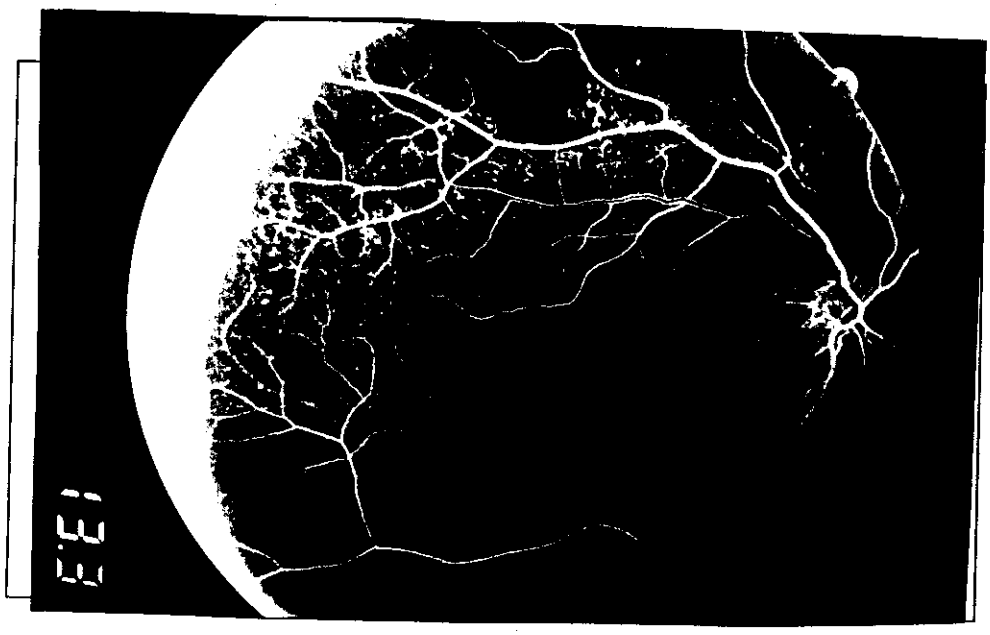


Fig 39 : Fluorescein angiography showing multiple leaking microaneurysms

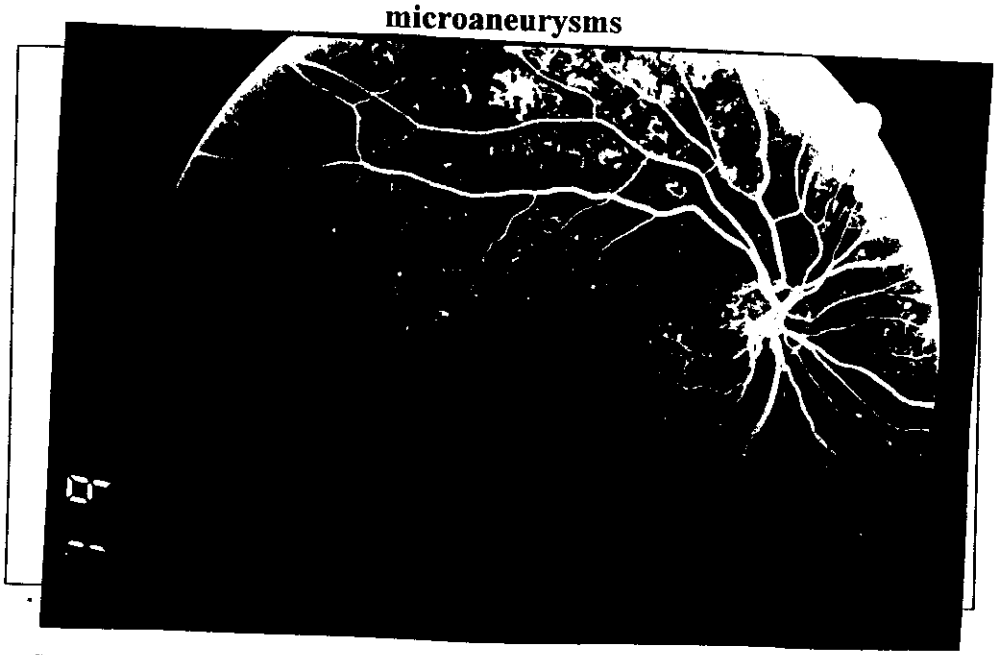
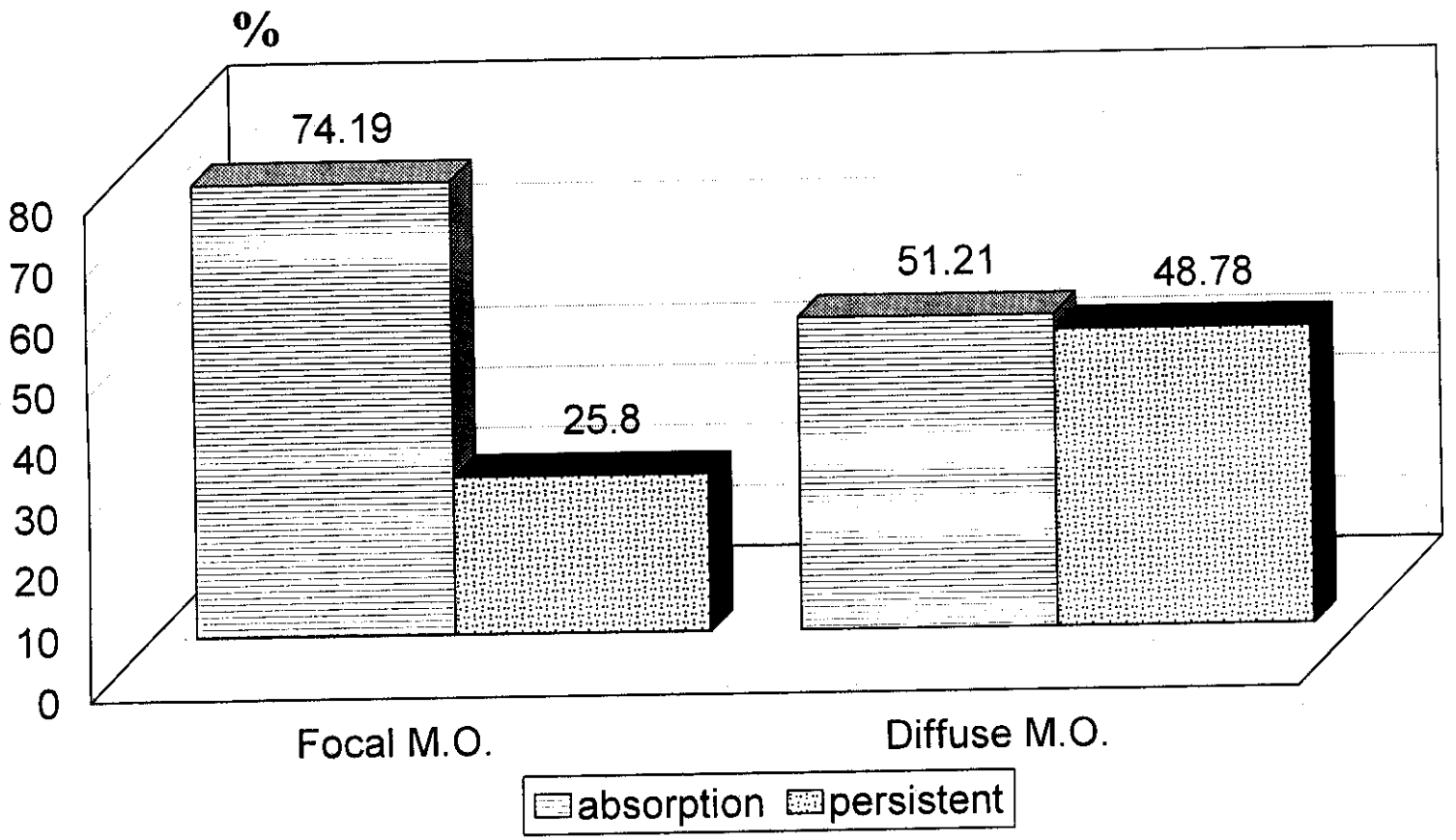


Fig 40 : The same patient after laser treatment with increase of leaking microaneurysms

Fig. (14) : The relation between type of macular edema and rate of absorption of macular edema



In the group of diffuse macular edema 21 eyes showed absorption of the edema, while 20 eyes showed persistance of macular edema after one year follow up.

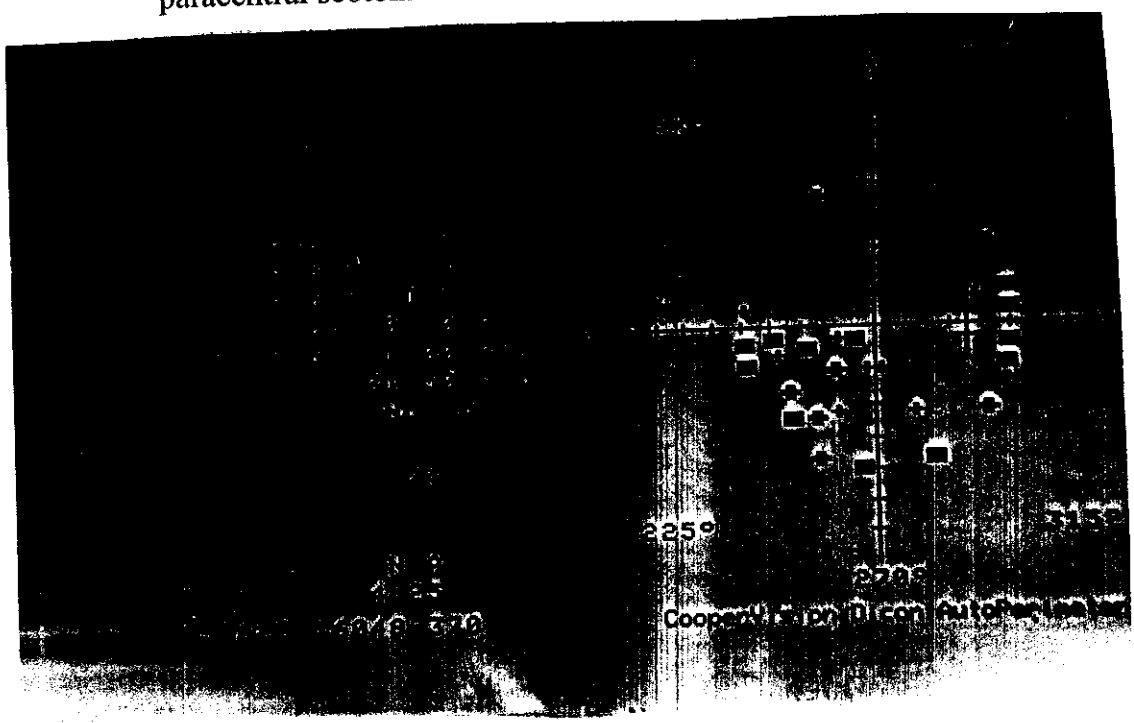
In the second group of 31 eyes with focal macular edema 23 showed absorption and 8 showed persistance macular edema after one year follow up. (Table 5)

Macular edema / absorption	Diffuse macular edema			Focal macular edema			Total	
	No. of Eyes	Percent		No. of Eyes	Percent		No.	Percent
		Per raw	Per column		Per raw	Per column		
absorption	21	47.72	51.21	23	52.27	74.19	46	61.11
persistent	20	71.42	48.78	8	28.57	25.80	26	38.89
Total	41	56.94		31	43.06		72	100%

$P < 0.05$ significant difference

Table (5). Comparison between focal and diffuse macular edema as regard obsorption or persisbence of edema in the study population

Fig. 42: Acase of diffuse macular edema with increase of paracentral scotomas after modified grid laser photocoagulation



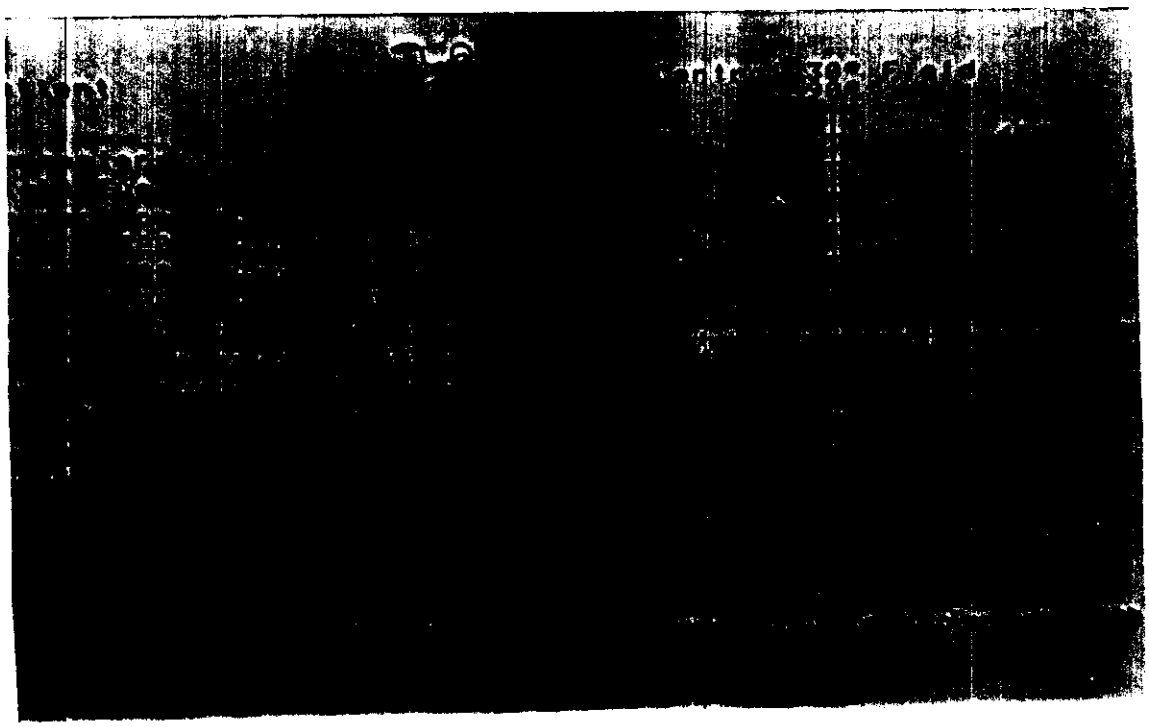


Fig. 43: Acase of focal macular edema with mild field changes after focal laser photocoagulation