RESULTS

The target population of the study was workers in Aluminium Company of Egypt in Nag-Hammadi Qena governorate,who attended the hospital of the company from 1/7/2008 to 1/7/2009.

The number of the subject is (590) persons,490males (workers) and 100 females(workers and the workers wives). (130) persons,118 males and 12 females proved to be HCV-seropositive. The prevalence rate was (22%).

Out of the 130 patients with positive HCV antibody and positive HCV-RNA (PCR), Only one hundred and fifteen (115) patients,104 males and11 females were treated by a combination therapy of a weekly fixed dose of 160 ug of Hansenula-derived recombinant pegylated interferon alpha 2-a (Reiferon Retard , Minapharm ,Egypt - under licenced technology of Rhein Biotech , Germany) and Ribavirin at a dose of 1000 mg/day for patients with body weight of less than 75 kg or 1200 mg/day for those weighting more than 75 kg,(11-13mg/kg) for 48 weeks. Five patients discontinued treatment due to adverse effects (pancytopenia in 2 patients and deep anemia in 3 patients). 3 males and 2 females. Therefore, (110) patients (9 females, 101 males) continued the treatment.

Table 1): Prevalence of HCV Ab according to gender

	HCV Anti bodies			
	Positive		Negative	
Gender	No.	%	No.	%
Male (490)	118	90.7%	372	80.8%
Female(100)	12	9.3%	88	19.2%
Total (590)	130	22%	460	78%

22% 0f the studied subjects were anti HCV positive; 24% males and 12% females, 78% were anti HCV negative; 76% males and 88% females.

Figure 3: Total Prevalence of HCV Ab (n=590)

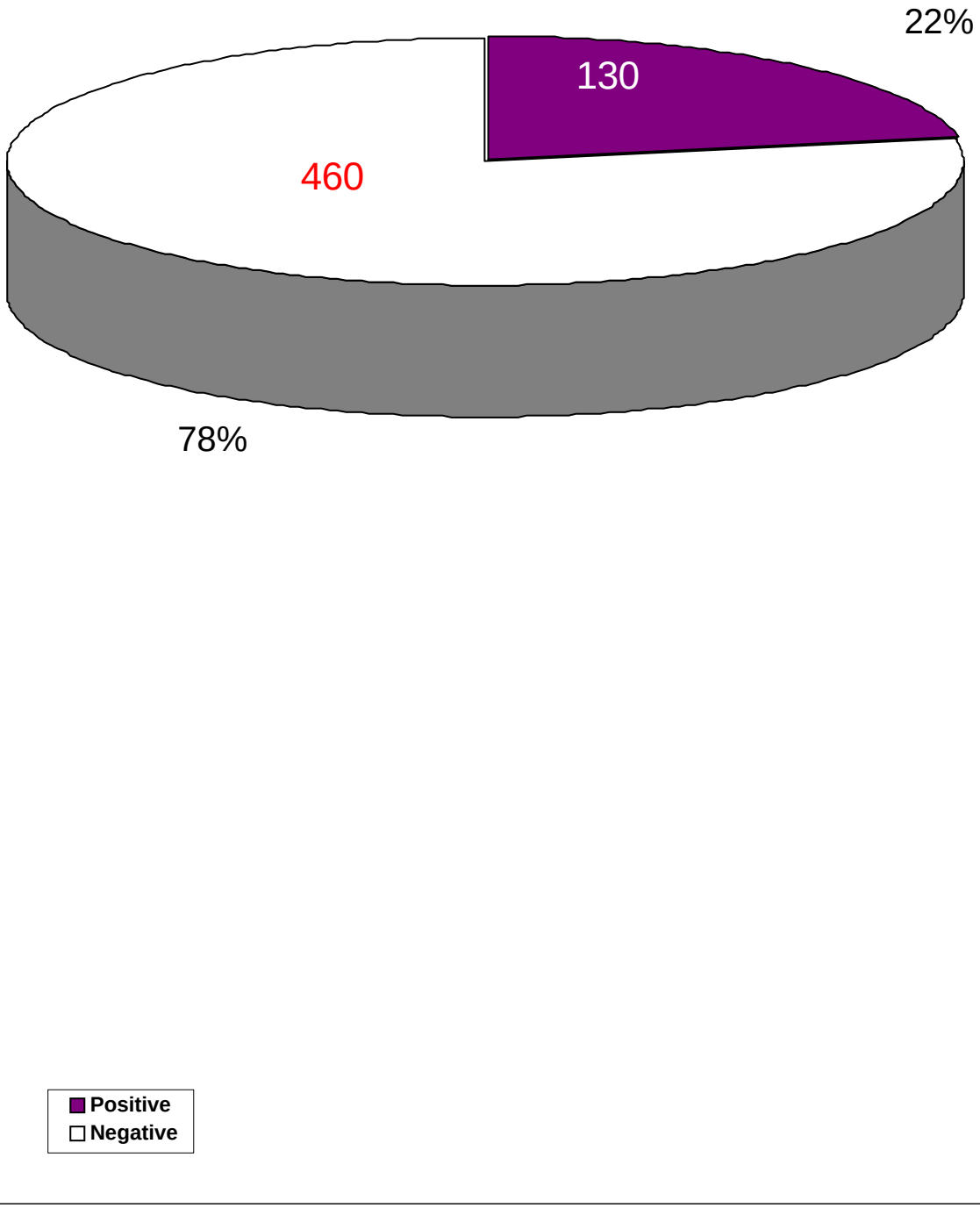

Table 2): Sociodemographic characters of the HCV Positive(n=130)group

	No.	%
Age:		
<30 y	**14**	**10.8**
30- 50	**92**	**70.7**
>50 y	**24**	**18.5**
Mean ± SD	**52.11± 13.7(26- 60)**	
Sex:		
Male	**118**	**91**
Female	**12**	**9**
Residence:		
Urban	**42**	**32.3**
Rural	**88**	**67.7**
Occupation:		
Worker	**94**	**72.3**
Employment	**36**	**27.7**
Smoking:		
Positive	**70**	**53.8**
Negative	**60**	**46.2**
Past exposure to Shistosomiasis	**63**	**48.5**
Past H. of tartar emetic injection	**34**	**26**

The range of age of the studied subjects was 26-60 years and the mean ± SD was 52.11 ± 13.7 , the studied subjects were 118 males and 12 females, 67.7% of them were from rural areas, 72.3% of them were workers and 27.7% were employees, 53.8% of the studied subjects had history of cigarette smoking, 48.5% of the studied subjects had pat history of exposure to Shistosomiasis.

Figure 4: Sociodemographic characters of the HCV positive (n=130) group

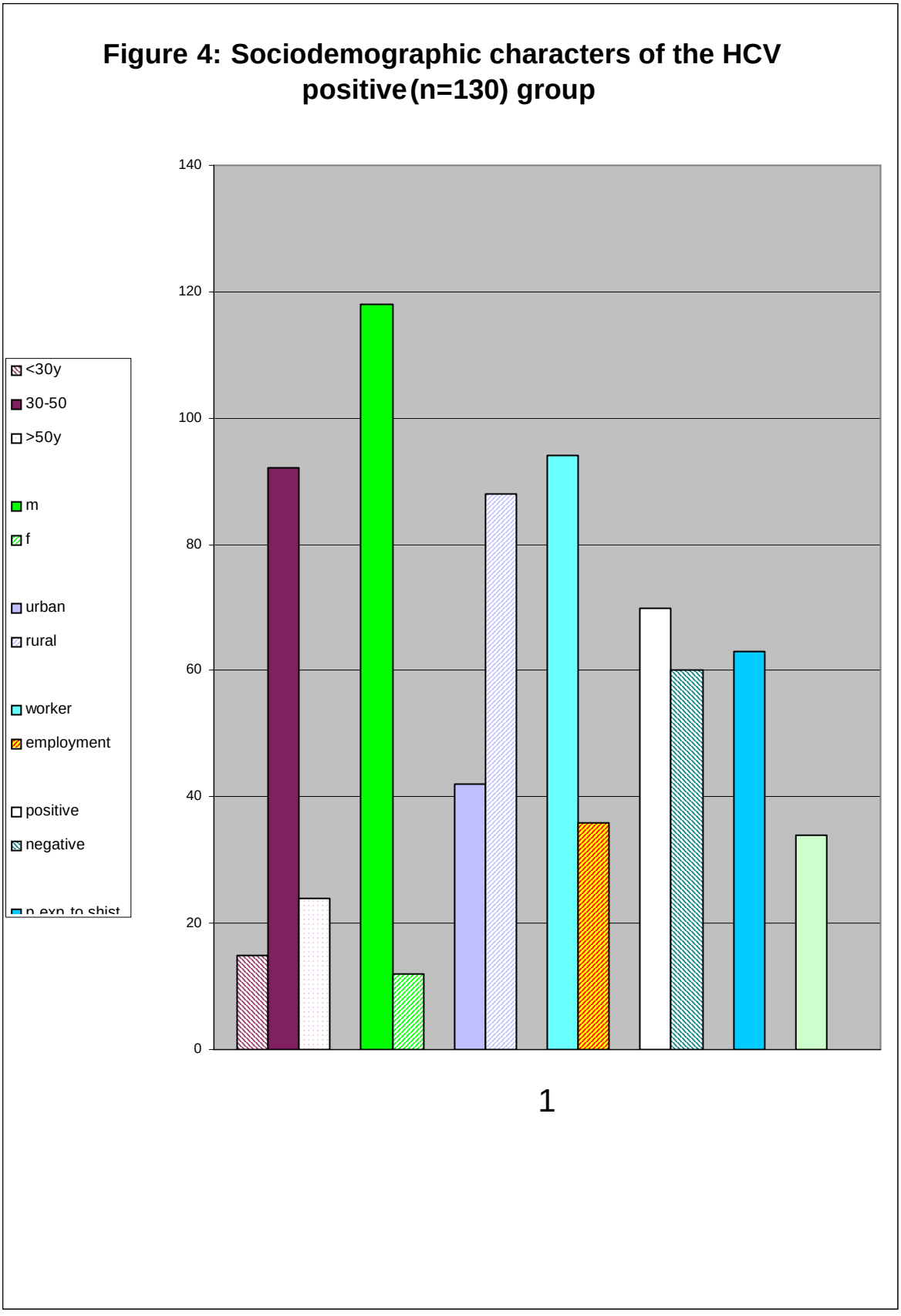

Table 3): Clinical features of the studied groups

	HCV Positive(n=130)		**HCV Negative(n=460)**		**X^2**	**P**	**OR{95%CI}**
	No.	**%**	**No.**	**%**			
Asymptomatic	67	52%	443	96%	173	<0.001***	
Jaundice	3	2%	0	0%	10.6	0.001**	4.6{3.9:5.4}
Dyspepsia	18	14%	7	1.5%	37.9	<0.001***	10.4{3.98:28.9}
Distension	27	20.7%	13	2.8%	51.6	<0.001***	9.01{4.29: 19.7}
Rt. Hypochondrial pain	10	7.7%	2	0.5%	26.7	<0.001***	19.08{3.87:127}
Lt. Hypochondrial pain	8	6%	1	0.25%	23.8	<0.001***	30.1{3.8:146}

Chi-square test is used

P is significant if ≤ 0.05

* Significant

** More significant

*** Highly significant

OR = odds ratio& 95% confidence interval

- some workers have more than one symptoms.

52% of HCV positive patients were asymptomatic, 2% of them were jaundiced , 14% were suffering from dyspepsia , 20.7% were suffering from distension , 7.7% were suffering from Rt. Hypochondrial pain and 6% were suffering from Lt. Hypochondrial pain.

Table 4): Clinical Signs of the HCV Positive(n=130)group

	HCV Positive(n=130)	
	No.	**%**
Hepatomegally	15	11.5%
Hepato-Splenomegally	11	8.5%
Shrunken liver	7	5.4%
Shrunken liver&Splenomegally	8	6.2%
Ascitis	5	3.8%
Apparent normal	84	64.6%

The clinical examination of the abdomen revealed that 64.6% 0f the studied subjects were apparentally normal , 11.5% had hepatomegally , 8.5% had hepato-splenomegally , 5.4% had shrunken liver , 6.2% had shrunken liver with splenomegally and 3.8% had ascitis.

Figure 5:Clinical signs of the HCV Positive (n=130) group

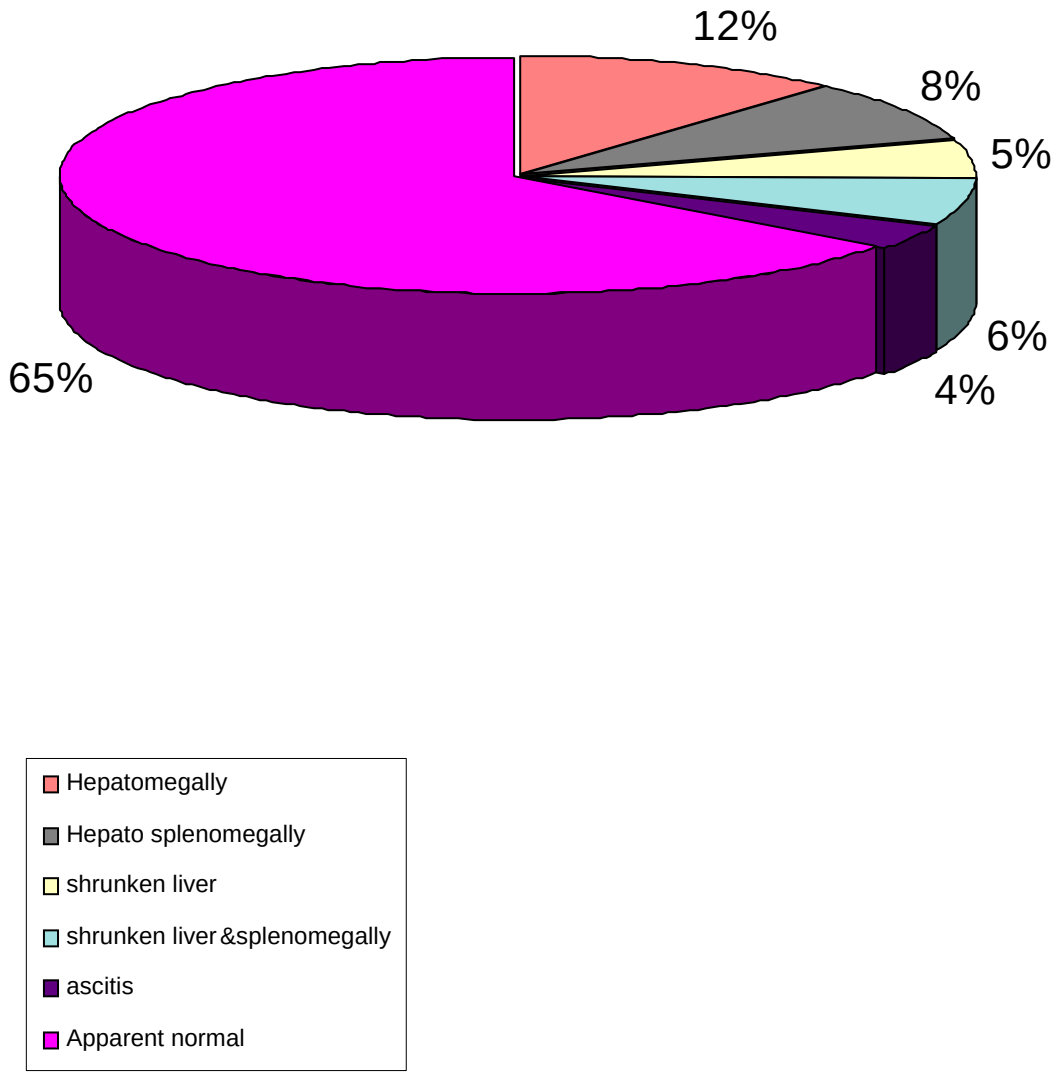

Table 5):Abdominal ultrasonographic findings of the HCV Positive(n=130)group

	No.	%
Liver:		
Size: normal	**97**	**74.6**
Enlarged	**33**	**25.4**
Irrigular surface	**7**	**5.4**
P.V. dilatation	**12**	**9.2**
Bilharzial liver	**47**	**36.2**
Texture:		
Homogenous	**93**	**71.5**
Coarse	**11**	**8.5**
Bright	**26**	**20**
Splenomegally	**10**	**7.7**
Hepato-splenomegally	**12**	**9.2**
Ascitis	**5**	**3.8**
Normal ECHO pattern	**78**	**60**

60% of the HCV Positive patients had normal ECHO pattern , 2.5% had enlarged Liver , 9.2% had dilated portal vein , 36.2% had bilharzial liver.

In studing the Texture of the liver 71.5% had homogenous liver , 8.5% had coarse liver , 20% had bright liver.

7.7% had Splenomegally , 9.2% had hepato-splenomegally , 3.8% had ascitis.

Table 6): Laboratory analysis of ***ALT*** level of the HCV Positive(n=130)group

	No.	**%**	
Normal value(0-12)u/L	17	13.1	65.7 ± **32.1**8
1-1.4 fold	44	33.8	
1.5- 2 folds	38	29.2	
2.1-≥3 folds	31	23.9	

The table shows that 13.1% had normal ALT level , 33.8% had ALT level (1-1.4 fold) , 29.2% had ALT level (1.5- 2 folds) and 23.9% had ALT level (2.1-≥3 folds). The **mean ± SD** was 65.7 ± **32.1**8.

Figure 6:Laboratory analysis of ALT level of the HCV Positive(n=130)group

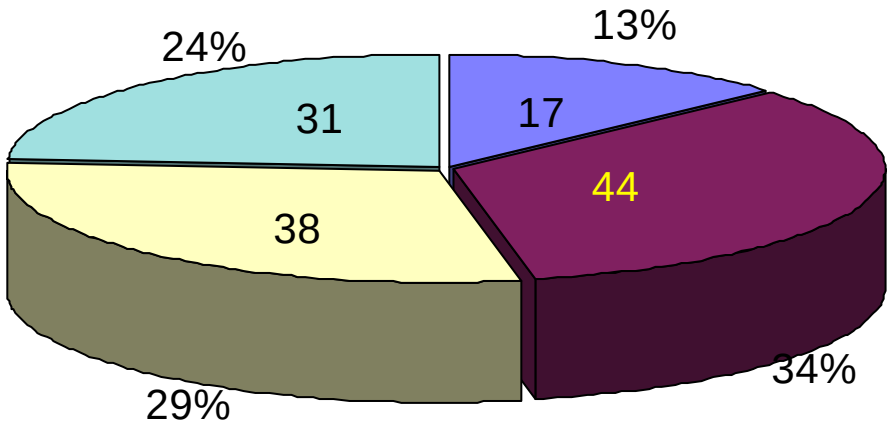

Table 7): Risk factors of spread of HCV among the studied groups

	HCV Positive(n=130)		**HCV Negative(n=460)**		**X^2**	**P**	**OR{95%CI}**
	No.	**%**	**No.**	**%**			
Surgery	65	50.8%	79	17.7%	59	<0.001***	4.82{3.1: 7.51}
Parental ttt	85	65.4%	44	9.5%	184	<0.001***	12.8{10.8:29.6}
Dental ttt	106	81.5%	160	34.8%	89	<0.001***	8.3{4.99: 13.8}
Blood transfusion	19	14.6%	5	1.1%	47.4	<0.001***	15.6{5.34: 48.8}

*** Highly significant

The common risk factor for HCV was dental treatment 81% followed by paretral treatment 65.4% followed by surgery 50.8% then Blood transfusion 14.6%.

Table 8): Viral load by PCR before ttt in relation to gender

Gender	**Viral load**	**t**	**P**
	Mean ± SD	2.1	P=0.11
Male	855,00**0± 671,000**		
Female	803,000**± 631,000**		

Independent sample t- test is used

P is significant if ≤ 0.05 (P value is insignificant).

The **Mean ± SD** of the total Viral load was 812,000 **± 642,000** , for males 855,00**0± 671,000** , for Female 803,000**± 631,000**.

Table 9): Viral load by PCR befor treatment in relation to response to ttt after 12 weeks

	Viral load after 12 w	**t**	**P**
	Mean ± SD	72.5	P<0.001***
Sensitive (n=70 63.6%)	1021± **357**		
Resistant (n=40 36.4%)	403,000± **141,000**		

Independent sample t- test is used

P is significant if ≤ 0.05

*** Highly significant

At the end of week 12, the proportion of patients with negative HCV RNA(early virological response) was 70/110 (63.6%) , mean ± SD (1021 ± 357).

Table 10): Viral load by PCR befor treatment in relation to response to ttt after 48 weeks.

	Viral load after 48 w	**t**	**P**
	Mean ± SD		
Sensitive (n=69 62.8%)	20± **12**	105.5	P<0.001***
Resistant (n=41 37.2%)	391,000± **111,000**		

Independent sample t- test is used

P is significant if ≤ 0.05

*** Highly significant

At the end of week 48, the proportion of patients with negative HCV RNA(end of treatment virological response) was 69/110 (62.8%) , mean ± S (20 ±12).

Table 11): EOT response after 48w according to gender

	Male		**Female**		**X^2**	**P**
	No.	**%**	**No.**	**%**		
Sensitive (n=69 62.8%)	63	62.3%	6	66.7%	0.07	0.79
Resistant (n=41 37.2%)	38	37.7%	3	33.3%		
Total (n=110 100%)	101	91.9%	9	8.1%		

Chi-square test is used

P is significant if ≤ 0.05(P value is insignificant).

At the end of week 48, the proportion of patients with negative HCV RNA(end of treatment virological response) was 69/110 (62.8%),63 males (62.3%) and 6 females (66.7%).

Fingar 8: EOT response after 48w according to gender

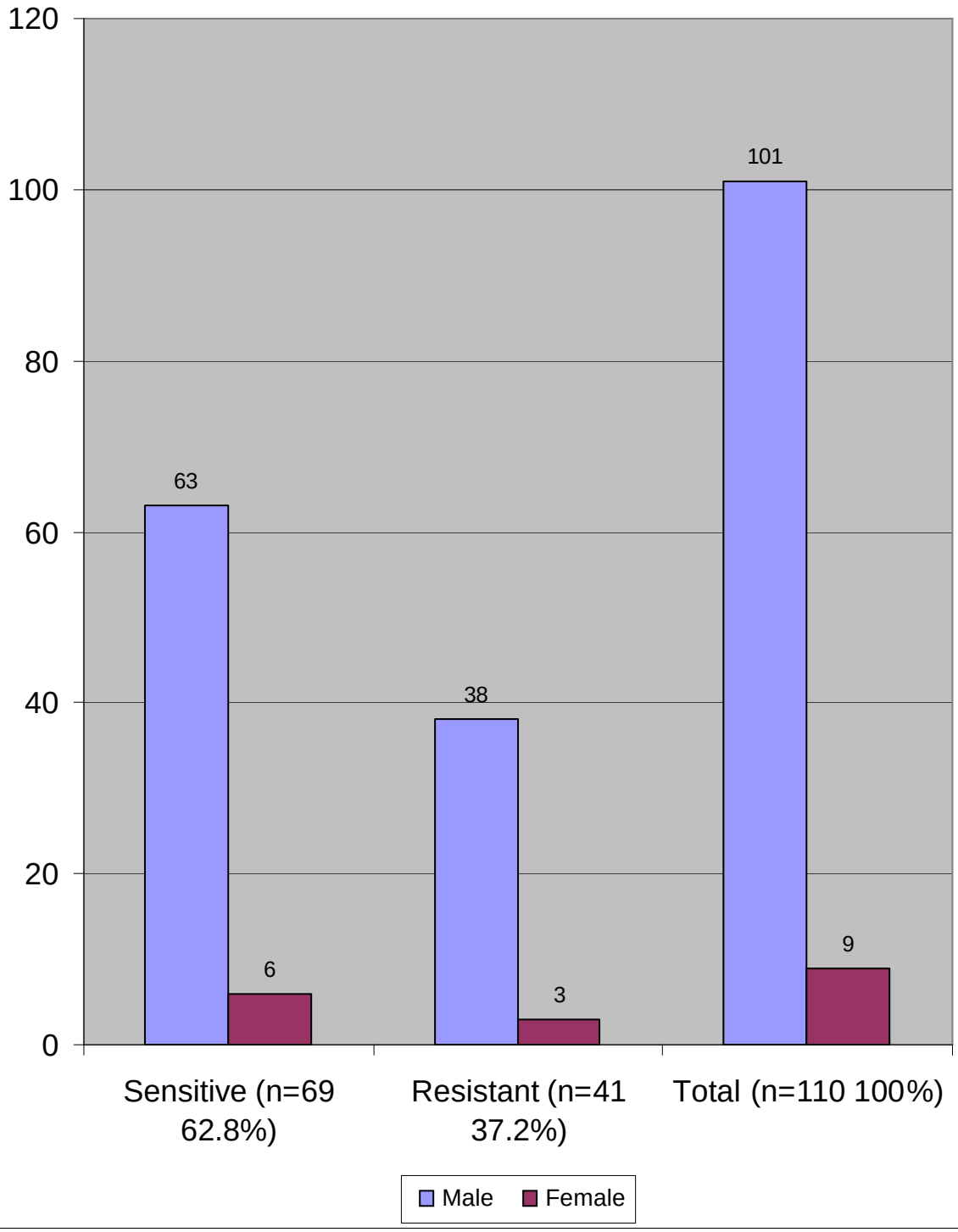

Table 12): Different virological response in patient on combination of interferon & ribavarin therapy

Viral response	**No.**	**%**
Rapid virological response 4w	28	25.4
Early virological response 12w	70	63.6
After 24w	73	66.4
End of ttt response 48w	69	62.7
Sustained viral response 72w	54	49

At the end of week 4, the proportion of patients with negative HCV RNA (rapid virological response) was 28/110 (25.4%). At the end of week 12, the (early virological response) was 70/110 (63.6%). At the end of week 24, the proportion of patients with negative HCV RNA was 73/110 (66.4%). At the end of week 48, the (end of treatment virological response) was 69/110 (62.8%). At the end of week 72(6 monthes after the end of treatment), the (sustained virological response) was 54/110 (49%).

4 patients whose HCV RNA had become negative at week 24 returned to a positive HCV RNA status at week 48.

15 patients whose HCV RNA had become negative at week 48(end of treatment) returned to a positive HCV RNA status at week 72(6 monthes after the end of treatment).

25 out of 28 patients(89.3%) whose HCV RNA had become negative at week 4 remained negative HCV RNA at week 72(6 monthes after the end of treatment).

Figure 9: Different virological response in patient on combination of interferom &ribavarin therapy (no=110)