Results

The present study was carried out on 100 patients having hepatitis c virus infection of both sex and age. Patients divided into 2 groups.

Group I: - consisted of 50 patients with Anti nuclear antibody positive titer.

Group II: - consisted of 50 patients with Anti nuclear antibody negative titer.

All patients were subjected to the following investigation. T. bilirubin, AST, ALT and PCR for HCV RNA. These investigations done pre treatment, 3 months and 6 months after treatment.

Liver biopsy taken for all patients before treatment for staging of liver fibrosis and grading of necroinflammation.

ALT among ANA + ve group before and after treatment (Table 1).

This table shows that there is highly significant change in ALT after 3monthes and 6monthes in ANA positive group compared with ALT before treatment in the same group, p value <0.001 but there is no significant changes in ALT after 3monthes and ALT after 6monthes in that group, p value >0.05.

ALT among ANA -ve group before and after treatment (Table 2).

This table shows no significant changes in ALT before treatment and 3monthes after treatment in ANA negative group, p value >0.05.

Also there is no significant changes in ALT 3monthes after treatment and 6monthes after treatment in the same group p value, >0.05. But there is highly significant change in ALT before treatment and 6monthes after treatment in the same group, p value <0.01.

ALT among the studied groups before and after treatment (Table3- Figure 1).

This table shows there is no significant change in ALT between the two groups before and after treatment by 3 and 6 months, p value >0.05.

AST among ANA + ve group before and after treatment (Table 4).

This table shows that there is highly significant change in AST after 3monthes and 6monthes in ANA positive group compared with AST before treatment in the same group, p value <0.001 and <0.01 respectively but there is no significant changes in AST after 3monthes and AST after 6 months in that group, p value >0.05.

AST among ANA - ve group before and after treatment (Table 5).

This table shows there is no significant changes in AST before treatment and after treatment by 3 and 6 months in the ANA negative group, p value >0.05.

AST among the studied groups before and after treatment (Table 6- Figure 2).

This table and figure show there is no significant changes in AST between the two groups before treatment p value >0.05.

But there is significant changes between both groups 3 months and 6 months after treatment p value <0.05.

T. Bilirubin among ANA + ve group before and after treatment (Table 7).

This table shows there is significant changes in the serum T.bilirubin after 3monthes of treatment compared with serum T.bilirubin before treatment in the ANA positive group, p value <0.05 but there is no significant changes in the serum T.bilirubin before treatment and after 6monthes of treatment in the same group, p value >0.05 also there is no significant changes in the serum T.bilirubin 3monthes after treatment and 6monthes after treatment in the same group, p value >0.05.

T. Bilirubin among ANA - ve group before and after treatment (Table 8).

This table shows there is no significant changes in the serum T.bilirubin before treatment and after treatment by 3 and 6 months in the ANA negative group, p value >0.05 .

T. Bilirubin among the studied groups before and after treatment (Table 9- Figure 3).

This table and figure show there is no significant changes in the serum T. bilirubin between the two groups before and after treatment by 3 and 6 months, p value >0.05 .

PCR for HCV RNA Quantitative among the studied groups before treatment (Table 10- Figure4).

This table and figure show there is a significant changes between the studied groups in the results of PCR of HCV RNA before treatment, p value <0.05 .

PCR for HCV RNA among ANA - ve group after 3 and 6 months of treatment (Table 11- Figure5).

This table and figure show that 48 patients in the ANA negative group responded to interferon therapy after 3months of treatment and only 2 patients in the same group not responded. But after 6months of treatment PCR of HCV RNA for all ANA negative patients became negative. So there is no significant changes in the PCR of HCV RNA 3months and 6 months after treatment in that group, p value >0.05 .

PCR for HCV RNA among ANA+ ve group after 3 and 6 months of treatment (Table 12- Figure6).

This table and figure show that 40 patients in the ANA positive group responded to interferon therapy after 3months of treatment and 10 patients in the same group not responded and after 6months of treatment PCR of HCV RNA for 45 patients in the ANA positive group became negative and still 5 patients had positive PCR. So there is significant changes in the PCR of HCV RNA 3monthes and 6 months after treatment in the ANA positive group, p value <0.05 .

Liver Biopsy (activity) among the studied groups before treatment (Table 13- Figure 7).

This table and figure show comparison of grades of the necroinflammatory activity process in the liver between both ANA positive and ANA negative groups. All patients of both groups show different grades of necroinflammatory activity. 15 patients in the ANA positive group show grade 4/18 of necroinflammation versus 1 patient in the ANA negative group. Also 13 patients in the ANA positive group show grade 8/18 of necroinflammation versus 1 patient in the ANA negative group and it was highly significant, p value <0.001. And 12 patients in the ANA positive group show grade 7/18 of necroinflammation versus 1 patient in the ANA negative group and it was high significant p value <0.01.

Liver Biopsy (Fibrosis) among the studied groups before treatment (Table 14- Figure 8).

This table and figure show comparison of the stages of liver fibrosis between both ANA positive and ANA negative groups. All patients of both groups show different stages of liver fibrosis but in the ANA positive group there was more advanced fibrosis. 25 patients in the ANA positive group show stage 3/6 liver fibrosis versus 3 patients in the ANA negative group and it was highly significant, p value <0.001. Also 19 patients in the ANA positive group show stage 4/6 liver fibrosis versus 2 patients in the ANA negative group and it was highly significant, p value <0.001.

Table (1): means (X^-) ± standard deviations (SD) of ALT among ANA + ve group before and after treatment.

ALT Time	X^- ± SD	Paired t	P
Before treatment	64.6±36.1	$t_1 = 4.13$	<0.001
3 m after treatment	38.2±40.8	$t_2 = 5.28$	<0.001
6 m after treatment	33.3±29.2	$t_3 = 1.1$	>0.05

t_1 = before treatment VS 3 m after treatment

t_2 = before treatment VS 6 m after treatment

t_3 = 3 m after treatment VS 6 m after treatment

Table (2): means (X^-) ± standard deviations (SD) of ALT among ANA -ve group before and after treatment

ALT Time	X^- ± SD	Paired t	P
Before treatment	72.6±61.2	$t_1 = 1.96$	>0.05
3 m after treatment	52.4±47.8	$t_2 = 3.08$	<0.01
6 m after treatment	43.5±35.3	$t_3 = 1.02$	>0.05

Table (3): comparison between means (X^-) ± standard deviations (SD) of ALT among the study groups before and after treatment

ALT Time	ANA + ve X^- ± SD	ANA - ve X^- ± SD	t	P
Before treatment	64.6±36.1	72.6±61.2	$t_1 = 0.81$	>0.05
3 m after treatment	38.2±40.8	52.4±47.8	$t_2 = 1.6$	>0.05
6 m after treatment	33.3±29.2	43.5±35.3	$t_3 = 1.57$	>0.05

t_1 = ANA positive versus ANA negative before treatment.

t_2 = ANA positive versus ANA negative 3monthes after treatment.

t_3 = ANA positive versus ANA negative 6monthes after treatment.

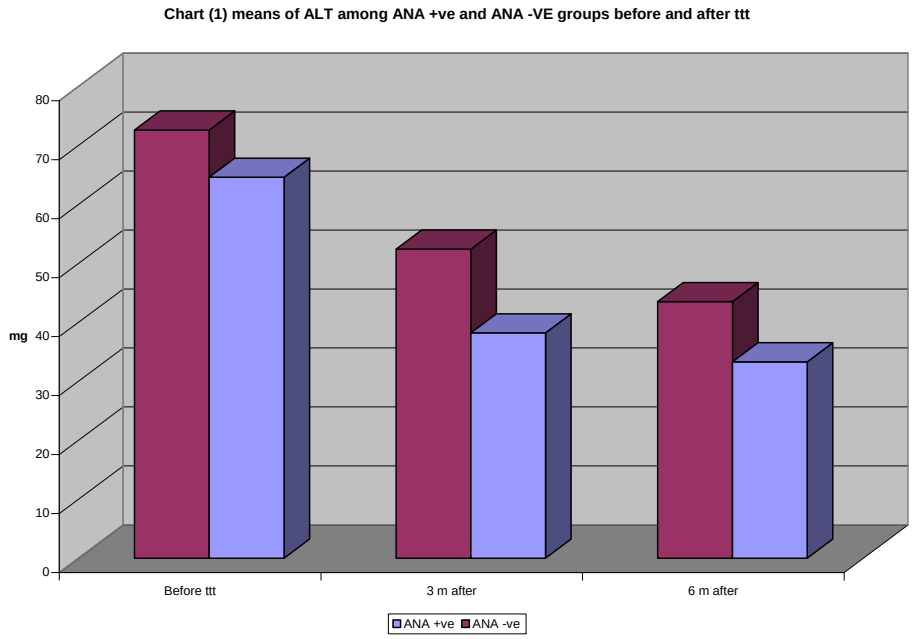

Figure 1: Means of ALT among ANA +ve and ANA -VE groups before and after treatment.

Table (4): Means (X^-) ± standard deviations (SD) of AST among ANA + ve group before and after treatment

AST Time	X^- ± SD	Paired t	P
Before treatment	55.8±31.1	t_1 = 3.77	<0.001
3 m after treatment	39.2±21.7	t_2 =3.15	<0.01
6 m after treatment	39.8±14.1	t_3 = 0.19	>0.05

t_1 = before treatment VS 3 m after treatment

t_2 = before treatment VS 6 m after treatment

t_3 = 3 m after treatment VS 6 m after treatment

Table (5): Means (X^-) ± standard deviations (SD) of AST among ANA - ve group before and after treatment

AST Time	X^- ± SD	Paired t	P
Before treatment	60.3±34.1	t_1 = 0.51	>0.05
3 m after treatment	55.5±26.3	t_2 = 1.37	>0.05
6 m after treatment	50.6±15.1	t_3 = 0.74	>0.05

Table (6): Comparison between means (X^-) ± standard deviations (SD) of AST among the study groups before and after treatment

AST Time	ANA + ve X^-± SD	ANA - ve X^-± SD	t	P
Before treatment	55.8±31.1	60.3±34.1	$t_1 = 0.81$	>0.05
3 m after treatment	39.2±21.7	55.5±26.3	$t_2 = 2.14$	<0.05
6 m after treatment	39.8±14.1	50.6±15.1	$t_3 = 2.34$	<0.05

t_1 = ANA positive versus ANA negative before treatment.

t_2 = ANA positive versus ANA negative 3monthes after treatment.

t_3 = ANA positive versus ANA negative 6monthes after treatment.

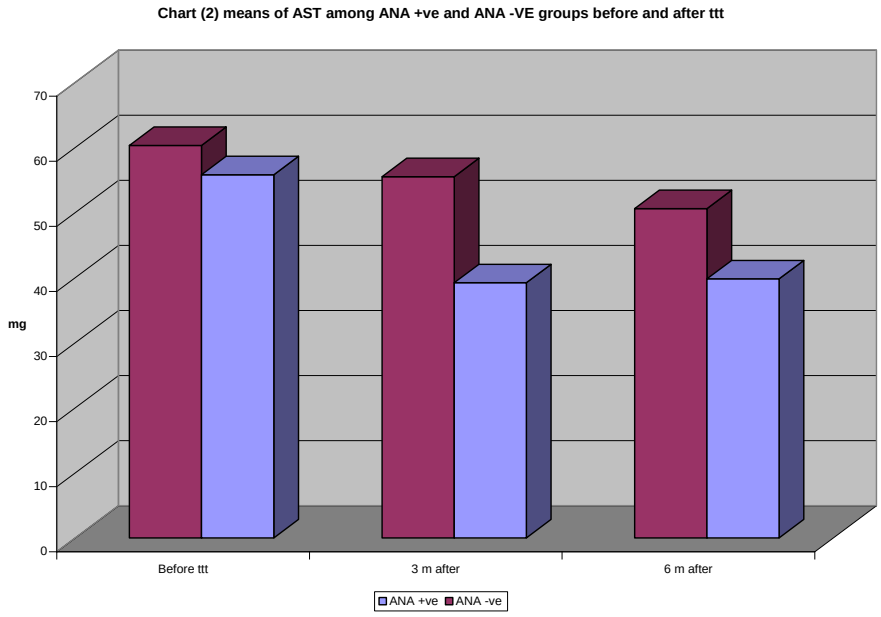

Figure 2: Means of AST among ANA +ve and ANA -ve groups before and after treatment.

Table (7): Means (X^-) ± standard deviations (SD) of T. Bilirubin among ANA + ve group before and after treatment

T. Bilirubin Time	X^- ± SD	Paired t	P
Before treatment	0.81±0.3	t_1 = 2.58	<0.05
3 m after treatment	0.94±0.4	t_2 =1.27	>0.05
6 m after treatment	1.07±1.3	t_3 = 0.66	>0.05

t_1 = before treatment VS 3 m after treatment

t_2 = before treatment VS 6 m after treatment

t_3 = 3 m after treatment VS 6 m after treatment

Table (8): Means (X^-) ± standard deviations (SD) of T. Bilirubin among ANA - ve group before and after treatment

T. Bilirubin Time	X^- ± SD	Paired t	P
Before treatment	0.97±0.4	t_1 = 0.81	>0.05
3 m after treatment	1.02±0.5	t_2 =0.18	>0.05
6 m after treatment	0.94±0.4	t_3 = 1.23	>0.05

Table (9): Comparison between means (X^-) ± standard deviations (SD) of T. Bilirubin among the study groups before and after treatment

T. Bilirubin Time	ANA + ve X^-± SD	ANA - ve X^-± SD	t	P
Before treatment	0.81±0.3	0.97±0.4	$t_1 = 0.81$	>0.05
3 m after treatment	0.94±0.4	1.02±0.5	$t_2 = 1.6$	>0.05
6 m after treatment	1.07±1.3	0.94±0.4	$t_3 = 1.57$	>0.05

t_1 = ANA positive versus ANA negative before treatment.

t_2=ANA positive versus ANA negative 3monthes after treatment.

t_3=ANA positive versus ANA negative 6monthes after treatment.

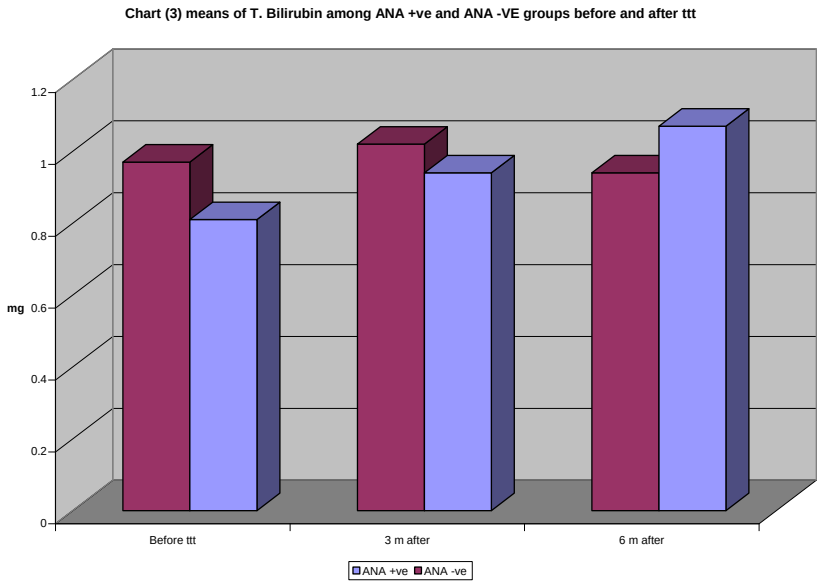

Figure 3: Means of T. Bilirubin among ANA +ve and ANA -VE groups before and after ttt

Table (10): Means (X^-) ± standard deviations (SD) of PCR Quantitative among the study groups before treatment.

PCR study group	X^- ± SD	t	P
ANA - ve	1373892.9±2241766.9	2.34	<0.05
ANA +ve	2678676.7±324835.8		

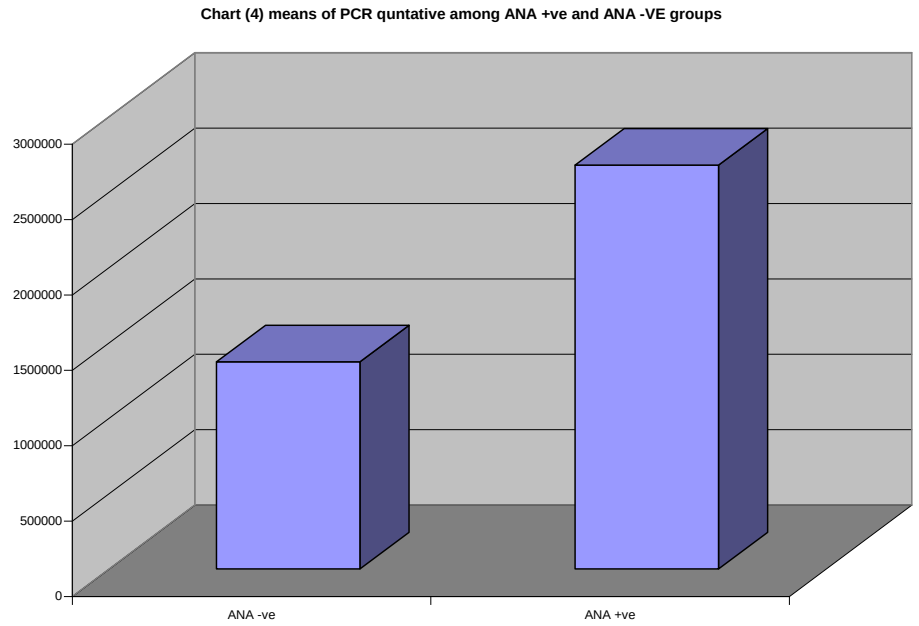

Figure 4: Means of PCR quntative among ANA +ve and ANA -VE groups

Table (11): PCR among ANA - ve group after 3 and 6 months of treatment

Time / PCR	3 months No	3 months %	6 months No	6 months %	z	p
Negative	48	96.0	50	100.0	1.43	>0.05
Positive	2	4.0	0	0.0	1.43	>0.05
Total	50	100.0	50	100.0		

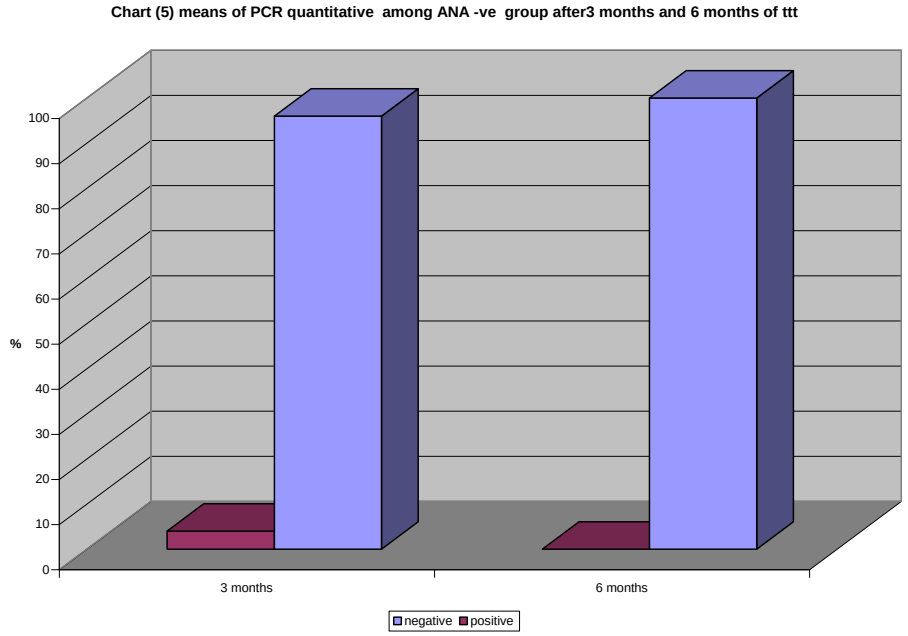

Figure 5: Means of PCR quantitative among ANA - ve group after3 months and 6 months of treatment.

Table (12): PCR among ANA+ ve group after 3 and 6 months of treatment.

Time / PCR	3 months No	3 months %	6 months No	6 months %	z	p
Negative	40	80.0	45	90.0	2.29	<0.05
Positive	10	20.0	5	10.0	2.29	<0.05
Total	50	100.0	50	100.0		

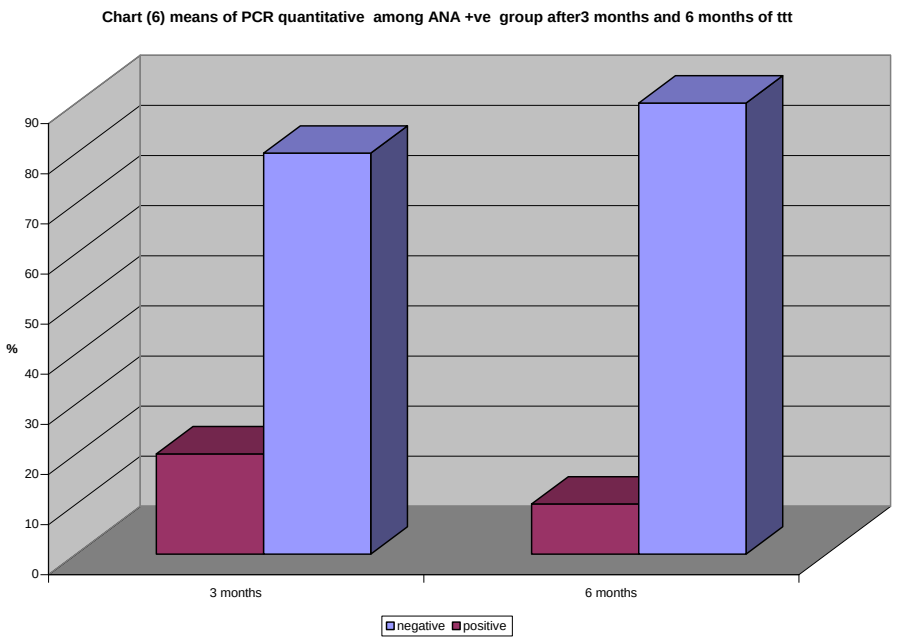

Figure 6: Means of PCR quantitative among ANA + ve group after3 months and 6 months of treatment.

Table (13): Liver Biopsy (activity) among the study groups before treatment

study group activity	ANA + ve		ANA - ve		Z	P
	No	%	No	%		
1/18	4	8.0	15	30.0	2.52	<0.01
2/18	3	6.0	20	40.0	3.54	<0.001
3/18	2	4.0	12	24.0	2.67	<0.01
4/18	15	30.0	1	2.0	3.5	<0.001
7/18	12	24.0	1	2.0	3.05	<0.01
8/18	13	26.0	1	2.0	3.21	<0.001
10/18	1	2.0	0	0.0	1.01	>0.05
Total	50	100.0	50	100.0		

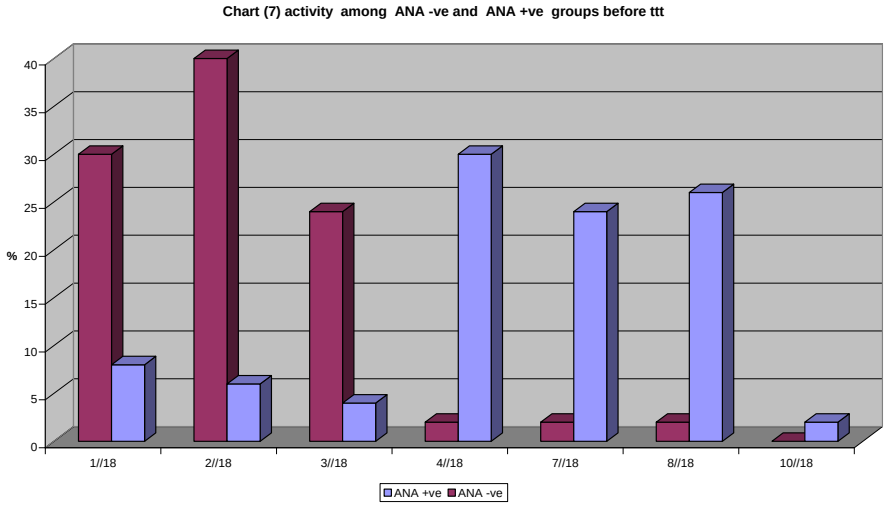

Figure 7: Activity among ANA -ve and ANA +ve groups before treatment.

Table (14): Liver Biopsy (Fibrosis) among the study groups before treatment

Study group activity	ANA + ve No	%	ANA - ve No	%	Z	P
1/6 F1	4	8.0	26	52	4.02	<0.001
2/6 F1-2	2	4.0	19	38	3.71	<0.001
3/6 F2	25	50.0	3	6	4.16	<0.001
4/6 F3	19	38.0	2	4	3.71	<0.001
Total	50	100.0	50	100.0	-	

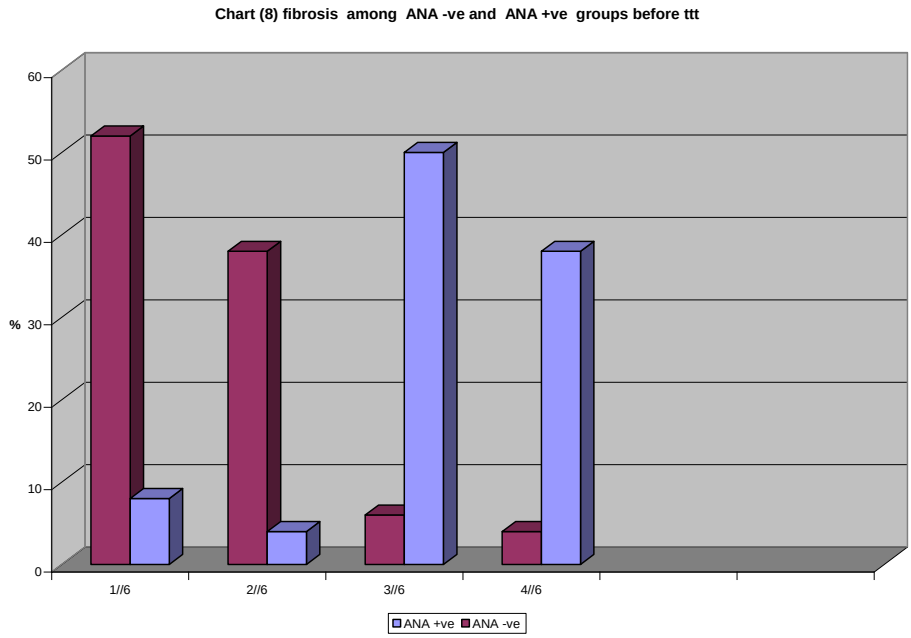

Figure 8: Fibrosis among ANA -ve and ANA +ve groups before treatment.