

CHAPTER 5

STATISTICAL DATA ANALYSIS

- Paired 't' test analysis was made for comparison within the groups.
- One way ANOVA & Post hoc analysis was made for comparison between the groups.

Table 1: Mean and SD of Blood glucose levels at pre Alloxan (Day 0) administration and various days post Alloxan Administration

N	Day 0 (mg/dl)		Day 1 (mg/dl)		Day 15 (mg/dl)		Day 30 (mg/dl)		Day 60 (mg/dl)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
42	82.42	3.46	261.71	3.49	342.07	3.74	389.14	3.87	401.42	14

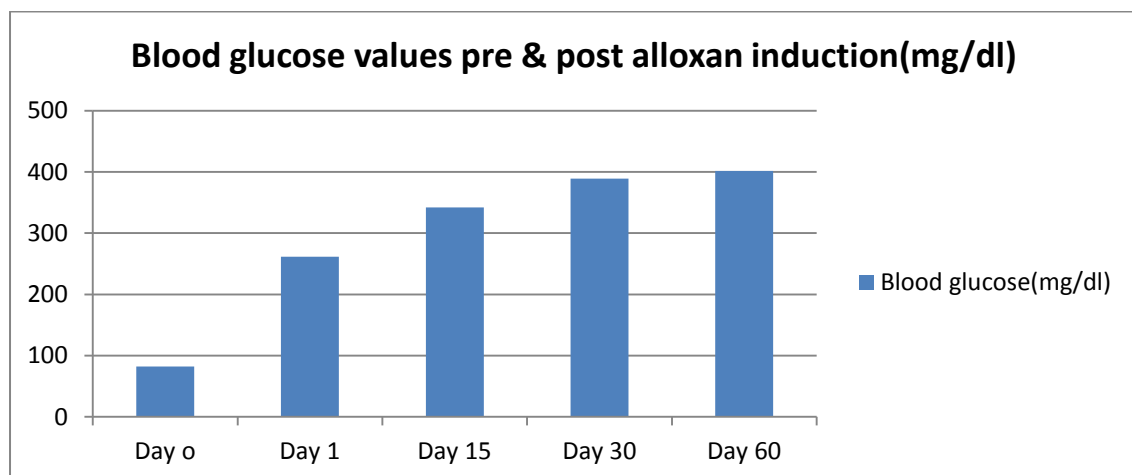


Fig 1: Blood glucose values Pre & Post Alloxan induction in mg/dl

Table 2: MNCV Values in m/sec of Experimentally Diabetes Induced Wistar Rats

N	Pre test (Day 0) (m/sec)		Post test (Day 30) (m/sec)		Post test (Day 60) (m/sec)	
	Mean	SD	Mean	SD	Mean	SD
42	51.71	2.56	46.9	1.220	33.19	2.682

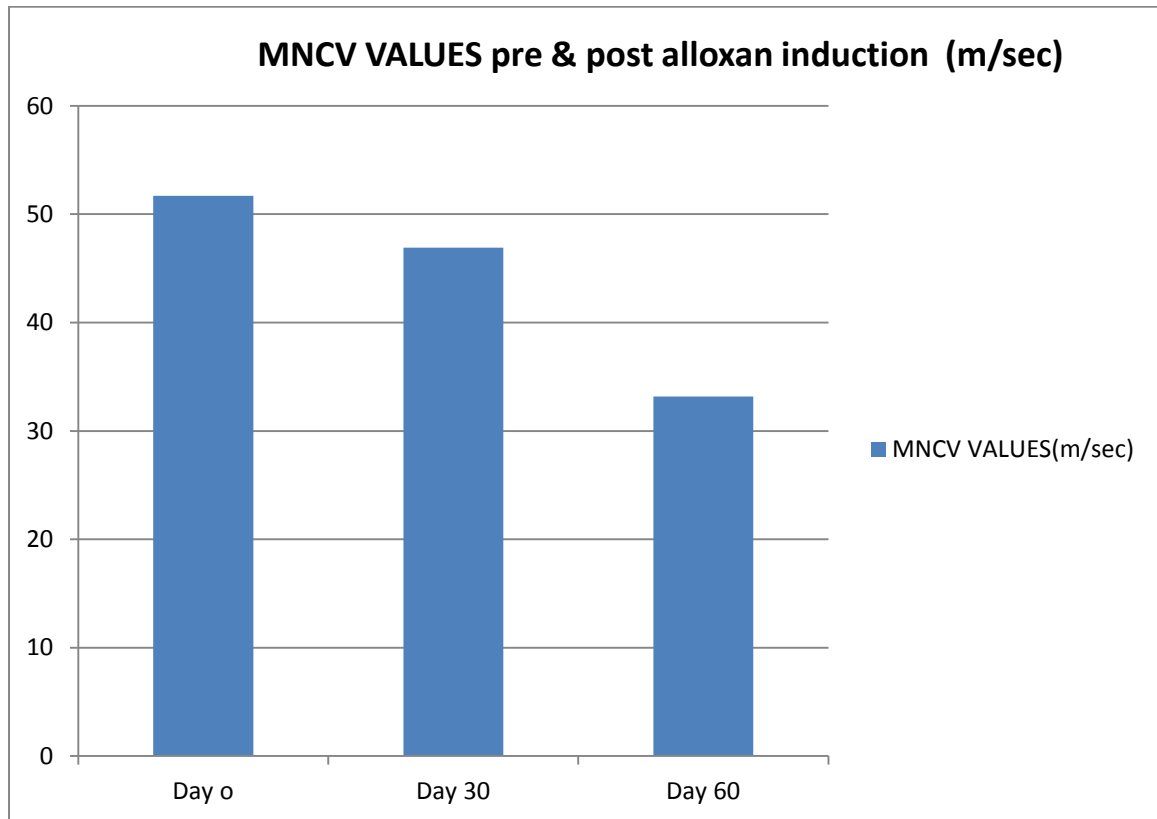


Fig 2: MNCV Values in m/sec of Experimentally Diabetes Induced Wistar Rats

Table 3: Comparison of MNCV values (m/sec) between day 0 (PreAlloxan) to Day 30 & Day 60 (Post Alloxan) by Paired 't' test

S.no	N	Comparison	Pre Alloxan (m/sec)		Post Alloxan (m/sec)		T value	P value
			Mean	SD	Mean	SD		
1	42	Day 0 vs Day 30	51.7	2.56	46.90	1.220	10.637	<0.0001
2	42	Day 0 vs Day 60	51.7	2.56	33.19	2.682	12.195	<0.0001

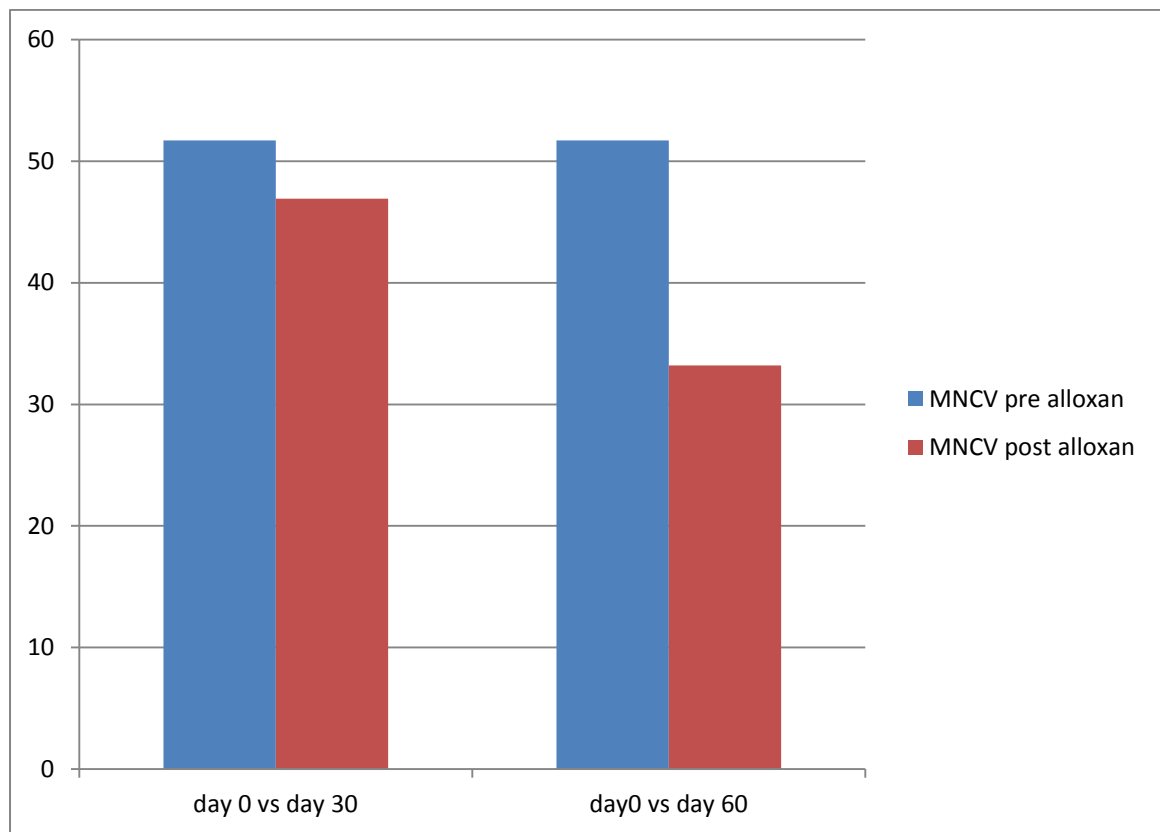


Fig 3: Comparison of MNCV values (m/sec) between day 0 (PreAlloxan) to Day 30 & Day 60 (Post Alloxan)

Table 4: Sensory Nerve Conduction Velocity Values (m/sec) of Experimentally Diabetes Induced Wistar Rats

N	Pre test (Day 0) (m/sec)		Post test (30 days) (m/sec)		Post test (60 days) (m/sec)	
	Mean	SD	Mean	SD	Mean	SD
42	54.2	2.19	47.4	1.35	38.56	2.25

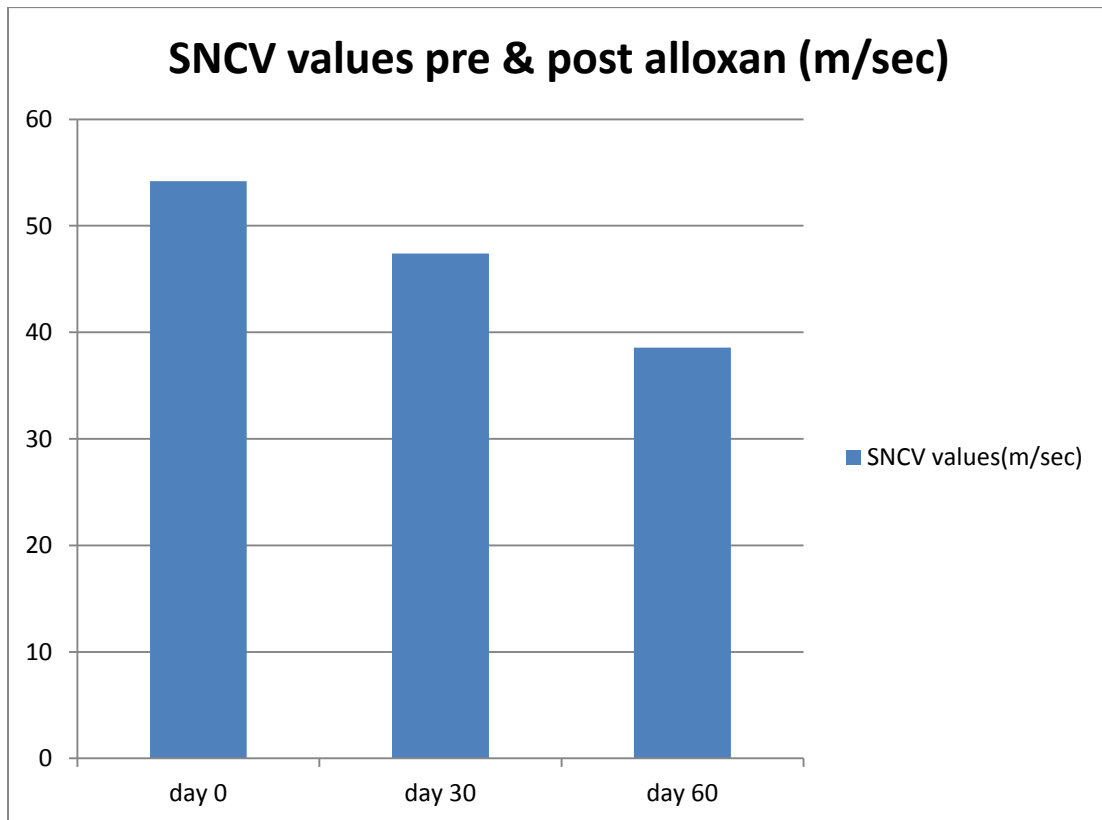


Fig 4: Sensory Nerve Conduction Velocity Values (m/sec) of Experimentally Diabetes Induced Wistar Rats

Table 5: Comparison of SNCV values between day 0 (Pre Alloxan) to Day 30 and Day 60 (Post Alloxan) by Paired 't' test

S.no	Comparison	Nos.	Pre Alloxan (m/sec)		Post Alloxan (m/sec)		T value	P value
			Mean	SD	Mean	SD		
1	Day0 vs Day 30	42	54.2	2.19	47.4	1.35	20.045	<0.0001
2	Day0 vs Day 60	42	54.2	2.19	38.5	2.25	14.145	<0.0001

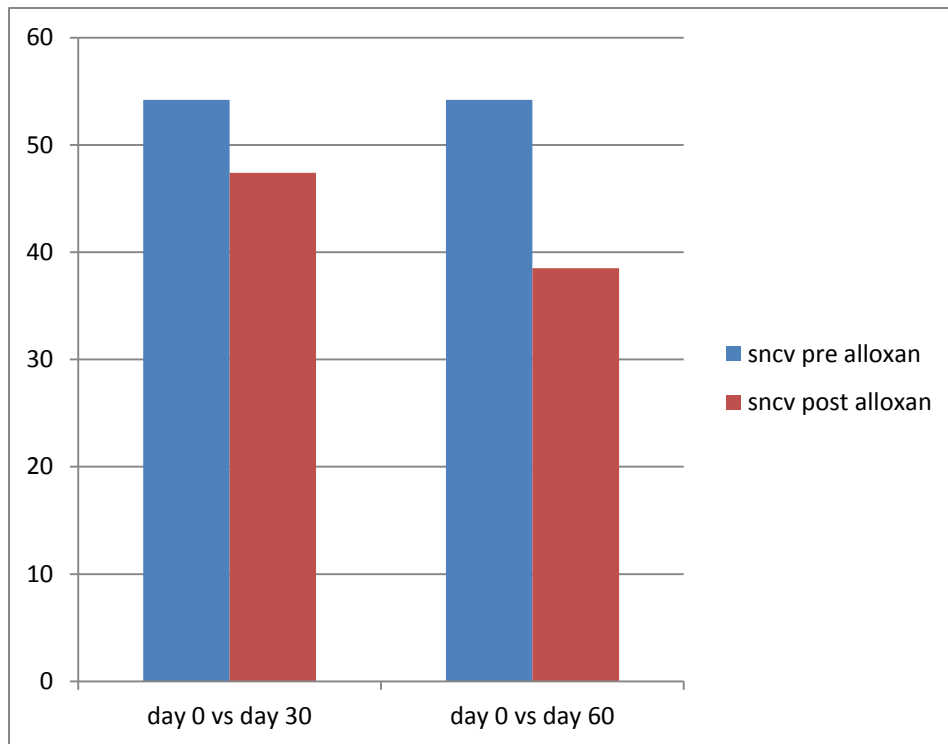


Fig 5: Comparison of SNCV values between day 0 (Pre Alloxan) and day 60 (Post Alloxan)

Table 6: MNCV values Pre & Post Laser irradiation

Groups (N=6)	Pre test		Post test	
	Mean	SD	Mean	SD
Group I-3j/cm2	32.3	2.034	44.3	1.264
Group II-4j/cm2	29.8	0.914	49.1	0.794
Group III-5j/cm2	32.8	2.190	41	2.097
Group IV-6j/cm2	33.1	2.192	39.7	1.544
Group V -7j/cm2	34.8	0.802	35.3	1.38
Group VI-8j/cm2	34.6	2.699	34.2	1.277
Group VII-control	34.3	2.679	34.9	1.195

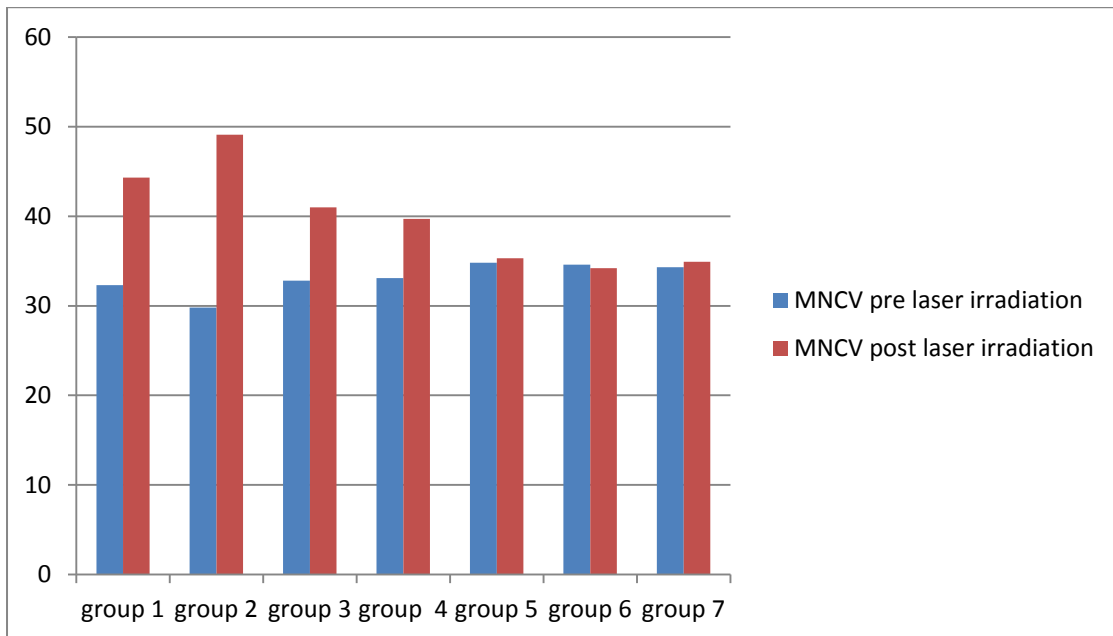


Fig 6: MNCV values Pre & Post Laser irradiation

Table 7: Comparison of MNCV values (m/sec) prior and post Laser irradiation by 't' test

Groups (n=6)	Pre laser irradiation (m/sec)		Post laser irradiation (m/sec)		t value	P value
	Mean	SD	Mean	SD		
Group I-3j/cm2	32.3	2.034	44.3	1.264	14.08	<0.0001
Group II-4j/cm2	29.8	0.914	49.1	0.794	60.9	<0.0001
Group III-5j/cm2	32.8	2.190	41	2.097	5.7877	0.0022
Group IV-6j/cm2	33.1	2.192	39.7	1.544	4.4355	0.0068
Group V -7j/cm2	34.8	0.802	35.3	1.38	0.8344	0.4421
Group VI-8j/cm2	34.6	2.699	34.2	1.277	0.3109	0.7684
Group VII-control	34.3	2.679	34.9	1.195	0.4728	0.6563

Table 8: MNCV values Post laser irradiation Results analysis with one way ANOVA

Comparison	Sum of squares	df	Mean square	F-value	P value
Between Groups	1,102.851	6	183.89	92.04	0.000
Within groups	69.863	35	1.99	-	-

Table 9: Post hoc Analysis for MNCV values between Confidence intervals of the groups.

S.No	Comparison	Mean 1	Mean 2	Mean1 - Mean2	95% CI of difference
1	Group I-3j/cm2	32.3	44.5	-12.2	- 14.5 to - 9.9
2	Group II-4j/cm2	29.8	49.1	-19.3	- 21.6 to - 17.0
3	Group III-5j/cm2	32.8	41.0	-8.2	- 10.5 to - 5.9
4	Group IV-6j/cm2	33.1	39.7	-6.6	- 8.9 to - 4.3
5	Group V -7j/cm2	34.8	35.3	-0.5	- 2.8 to + 1.8
6	Group VI-8j/cm2	34.6	34.2	+0.4	- 1.9 to + 2.7
7	Group VII-control	34.3	34.9	-0.6	- 2.9 to + 1.7

Mean Square= 1.996 DF= 35

Table 10: Significance level of groups with MNCV values Post Laser Irradiation

S.No	Comparison	t	Significance (P <0.05?)
1	Group I-3j/cm2	14.957	<0.0001-Yes
2	Group II-4j/cm2	23.661	<0.0001-Yes
3	Group III-5j/cm2	10.053	0.0002-Yes
4	Group IV-6j/cm2	8.091	0.0005-Yes
5	Group V -7j/cm2	0.613	0.5667-No
6	Group VI-8j/cm2	0.490	0.6449-No
7	Group VII-control	0.736	0.4948-No

Post hoc comparisons of the groups MNCV values showed significant p values in Group I (3j/cm2), Group II (4j/cm2) & Group IV (5j/cm2) rest of the groups from 6-8j/cm2 and control Group did not show significant p value with 95% confidence interval.

Table 11: SNCV Values Pre & Post Laser Irradiation

Groups(n=6)	Pre laser irradiation (m/sec)		Post laser irradiation (m/sec)	
	Mean	SD	Mean	SD
Group I-3j/cm2	37.9	1.766	45.3	1.370
Group II- 4j/cm2	37.6	2.593	48.2	1.926
Group III- 5j/cm2	40.4	1.097	41.2	1.996
Group IV -6j/cm2	38.9	1.879	40.6	1.599
Group V -7j/cm2	38.9	1.058	39.2	1.724
Group VI-8j/cm2	38.4	1.332	37.2	0.951
Group VII- control	37.7	0.991	35.06	1.297

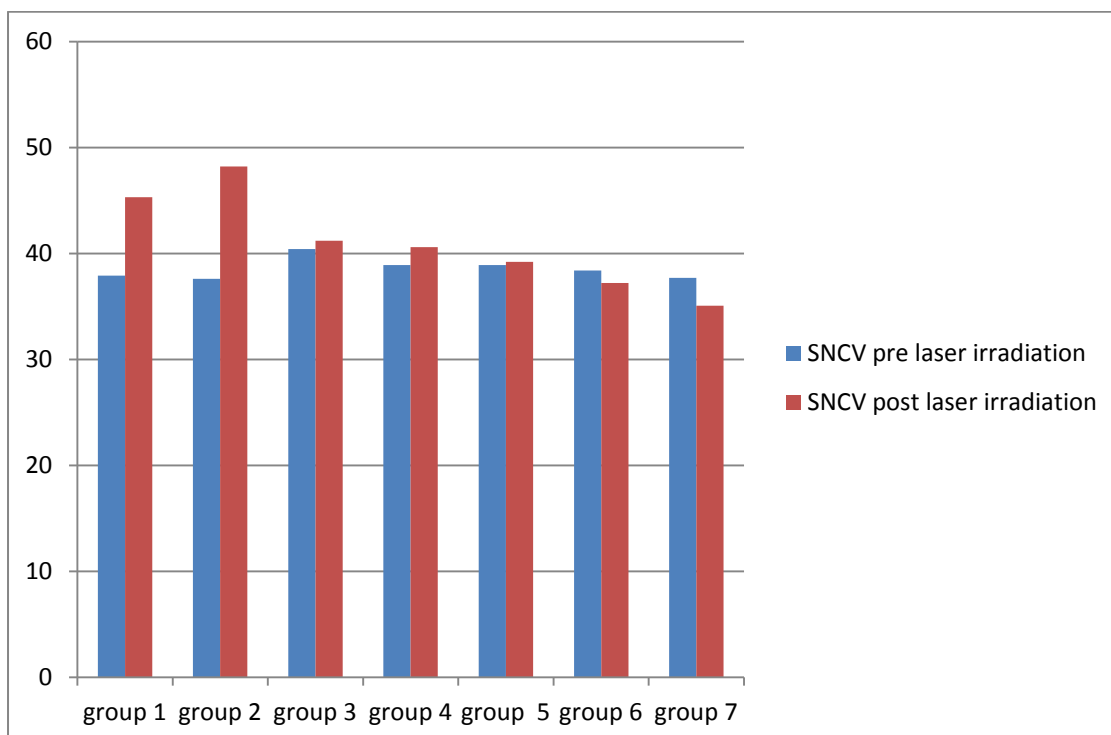


Fig 7: SNCV Values Pre & Post Laser Irradiation

Table 12: Comparison of SNCV values pre and post laser irradiation using paired t test

Groups(n=6)	Pre laser irradiation (m/sec)		Post laser irradiation (m/sec)		T value	P value
	Mean	SD	Mean	SD		
Group I-3j/cm2	37.9	1.766	45.3	1.370	8.929	0.0003
Group II- 4j/cm2	37.6	2.593	48.2	1.926	7.852	0.0005
Group III- 5j/cm2	40.4	1.097	41.2	1.996	1.098	0.3220
Group IV -6j/cm2	38.9	1.879	40.6	1.599	1.553	0.1810
Group V -7j/cm2	38.9	1.058	39.2	1.724	0.480	0.6514
Group VI-8j/cm2	38.4	1.332	37.2	0.951	1.411	0.2173
Group VII- control	37.7	0.991	35.06	1.297	4.073	0.0096

Table 13: SNCV values Post laser irradiation Results Analysis with One way ANOVA

Comparison	Sum of squares	Df	Mean square	F-value	P value
Between Groups	740.912	6	123.485	48.875	0.000
Within groups	88.430	35	2.527	-	-

Table 14: Post hoc Analysis for SNCV values comparison between the Groups

S.No	Comparison	Mean 1	Mean 2	Mean1 - Mean2	95% CI of difference
1	Group I-3j/cm2	37.9	45.3	- 7.4	- 9.9 to - 4.9
2	Group II- 4j/cm2	37.6	48.2	- 10.6	- 13.1 to - 8.1
3	Group III- 5j/cm2	40.4	41.2	- 0.8	- 3.3 to + 1.7
4	Group IV -6j/cm2	38.9	40.6	- 1.7	- 4.2 to + 0.8
5	Group V -7j/cm2	38.9	39.2	- 0.3	- 2.8 to + 2.2
6	Group VI-8j/cm2	38.4	37.2	+ 1.2	- 1.3 to + 3.7
7	Group VII- control	37.7	35.6	+ 2.1	- 0.4 to + 4.6

Mean Square= 2.527 DF= 35

Table 15: Significance levels of groups with SNCV values Post Laser Irradiation

S.No	Comparison	t	Significance (P<0.05?)
1	Group I-3j/cm2	8.063	0.0005-Yes
2	Group II- 4j/cm2	11.550	<0.0001-Yes
3	Group III- 5j/cm2	0.872	0.4231-No
4	Group IV -6j/cm2	1.852	0.1232-No
5	Group V -7j/cm2	0.327	0.7569-No
6	Group VI-8j/cm2	1.307	0.2481-No
7	Group VII- control	2.288	2.288- No

Post hoc comparisons of the groups SNCV values showed significant p values in Group I (3j/cm2) and Group II (4j/cm2), rest of the groups from 5-8j/cm2 and control Group did not show significant p value with 95% confidence interval.