Table (1): **Serum Cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) in the control group (Group I).**

	Cortisosterone (µg/dl)	Insulin (MIU/ml)	Glucose (mg/dl)	Triglycerides (mg/dl)	Cholesterol (mg/dl)	HDL-C (mg/dl)	LDL-C (mg/dl)
1	10.6	2.1	96	52	48	26	11.6
2	12.7	2.31	104	56	63	33	18.8
3	11.3	2.51	98	47	42	19	13.6
4	10.4	2.3	102	57	60	30	18.6
5	12.4	2.61	101	55	55	25	19
6	13.5	2.7	99	50	68	38	20
7	11.8	3.51	97	49	47	22	15.2
M	11.8142857	2.5771	99.571	52.286	54.714	27.571	16.686
SD	1.13347338	0.4595	2.8785	3.8173	9.4818	6.5538	3.2163

Fig. (1): **Serum Cortisosterone, Insulin, Glucose, Triglycerides, Cholesterol, HDL-C and LDL-C in the control group (Group I).**

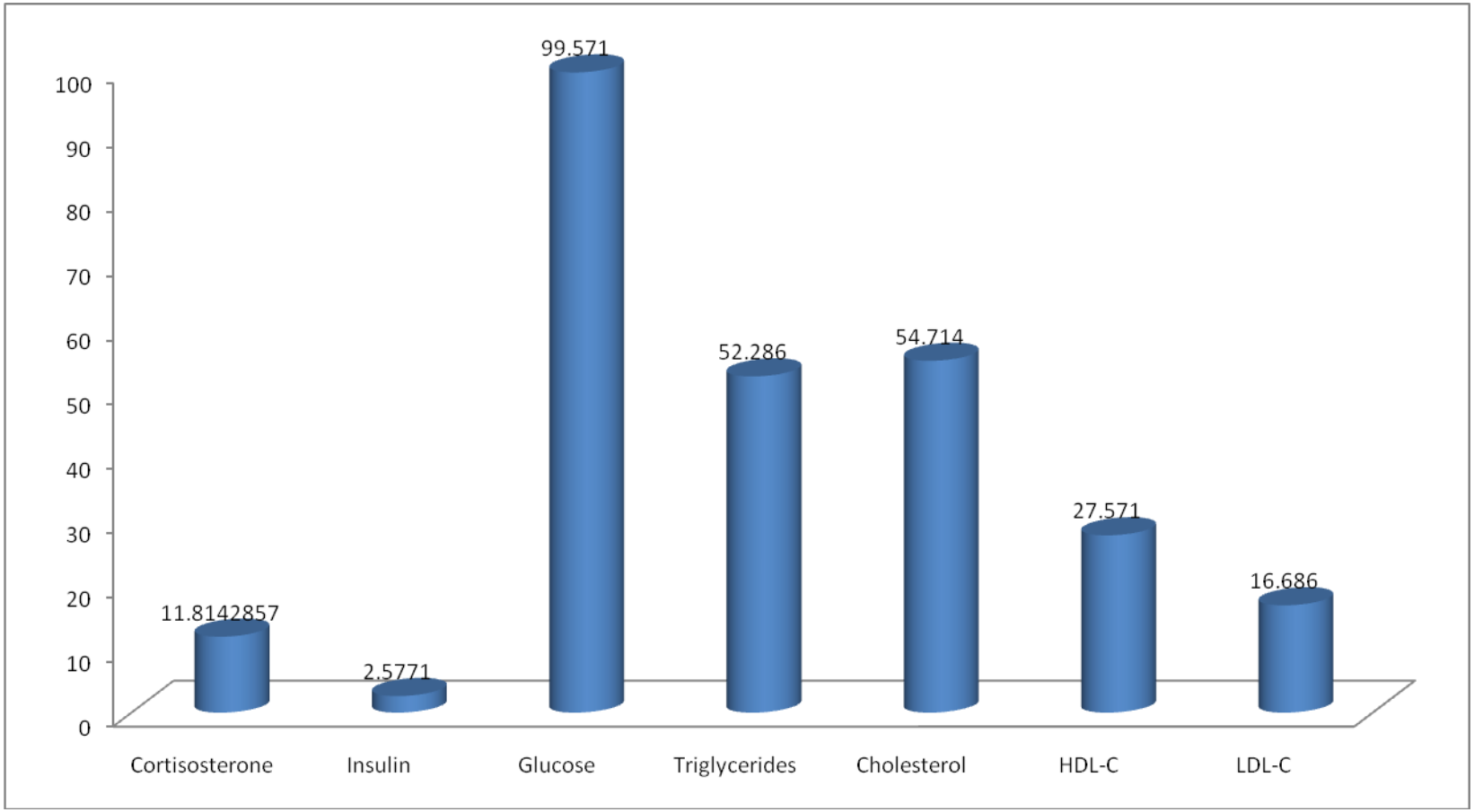


Table (2): **Effect of chronic immobilization stress for 60 minutes daily for 10 consecutive days on serum Cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) (Group II).**

	Cortisosterone (µg/dl)	Insulin (MIU/ml)	Glucose (mg/dl)	Triglycerides (mg/dl)	Cholesterol (mg/dl)	HDL-C (mg/dl)	LDL-C (mg/dl)
1	35.8	6.9	156	97	116	12	71.4
2	36.7	8.7	184	163	78	16	42.6
3	53.4	8.3	187	142	92	14	49.6
4	37.2	7.8	175	88	90	15	57.4
5	44.6	8.5	196	98	120	13	87.4
6	39.5	7.9	179	92	118	19	80.6
7	48.9	8.9	167	82	95	10	68.6
M	42.3	8.1429	177.71	108.86	101.29	14.143	65.371
SD	6.8254426	0.6779	13.263	30.9	16.54	2.9114	16.303

Fig. (2): **Effect of chronic immobilization stress for 60 minutes daily for 10 consecutive days on serum Cortisosterone, Insulin, Glucose, Triglycerides, Cholesterol, HDL-C and LDL-C (Group II).**

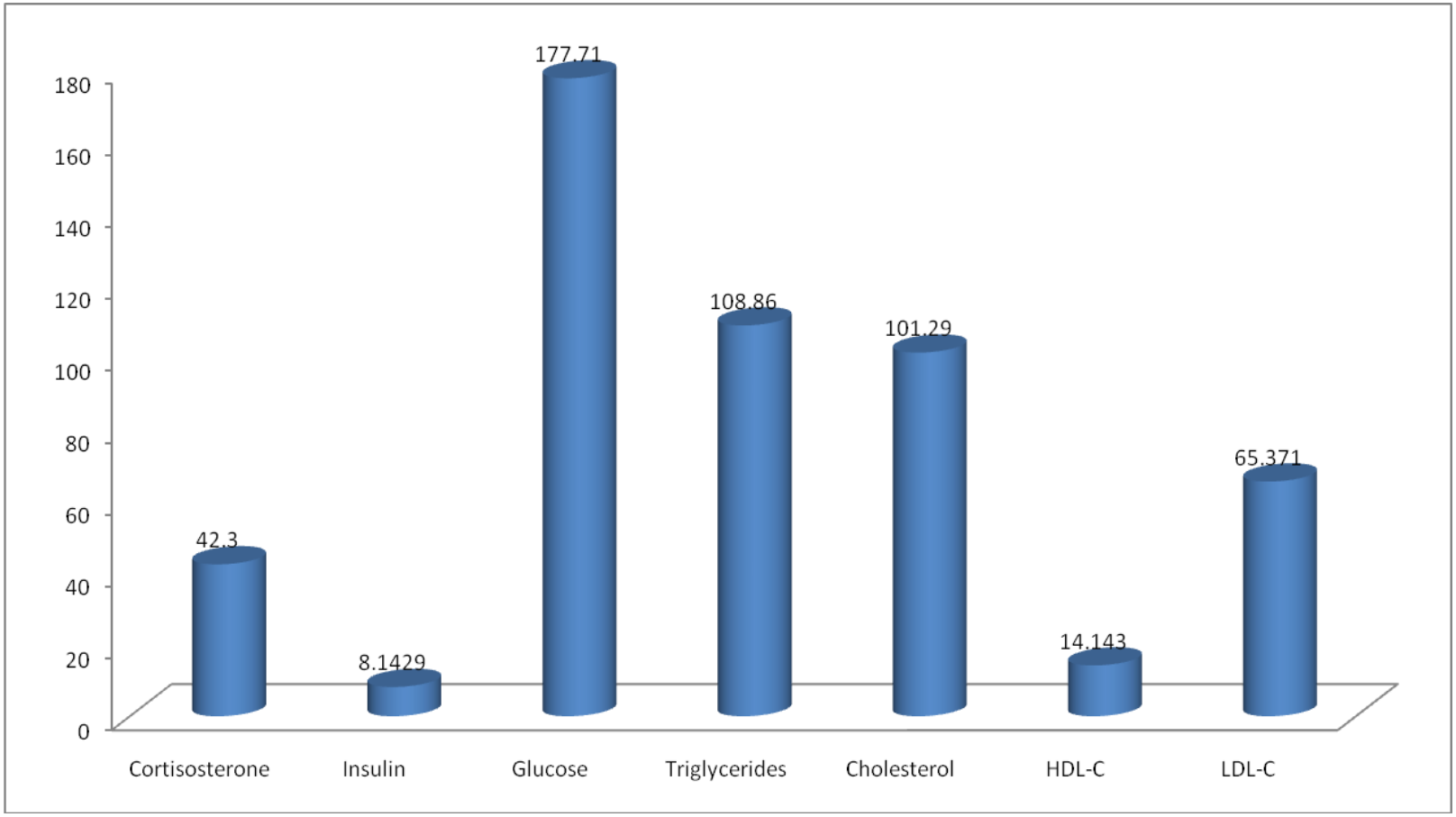


Table (3): **Effect of angiotensin II receptor blocker (losartan) in a dose of 10 mg/kg/day for 10 consecutive days on serum Cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) (Group III).**

	Cortisosterone (µg/dl)	Insulin (MIU/ml)	Glucose (mg/dl)	Triglycerides (mg/dl)	Cholesterol (mg/dl)	HDL-C (mg/dl)	LDL-C (mg/dl)
1	10.2	2.2	90	50	45	27	8
2	9.7	2.1	100	55	60	35	14
3	10.3	2.3	95	45	40	20	11
4	10.6	3.4	98	50	55	32	12.4
5	11.4	2.3	99	53	53	29	13.4
6	12.5	2.5	101	46	64	42	12.8
7	9.8	2.4	98	36	45	26	11.8
M	10.6428571	2.4571	97.286	47.857	51.714	30.143	11.914
SD	0.99474811	0.4353	3.7289	6.3095	8.7505	7.0576	1.9895

Fig. (3): **Effect of angiotensin II receptor blocker (losartan) in a dose of 10 mg/kg/day for 10 consecutive days on serum cortisosterone, Insulin, Glucose, Triglycerides, Cholesterol, HDL-C and LDL-C (Group III).**

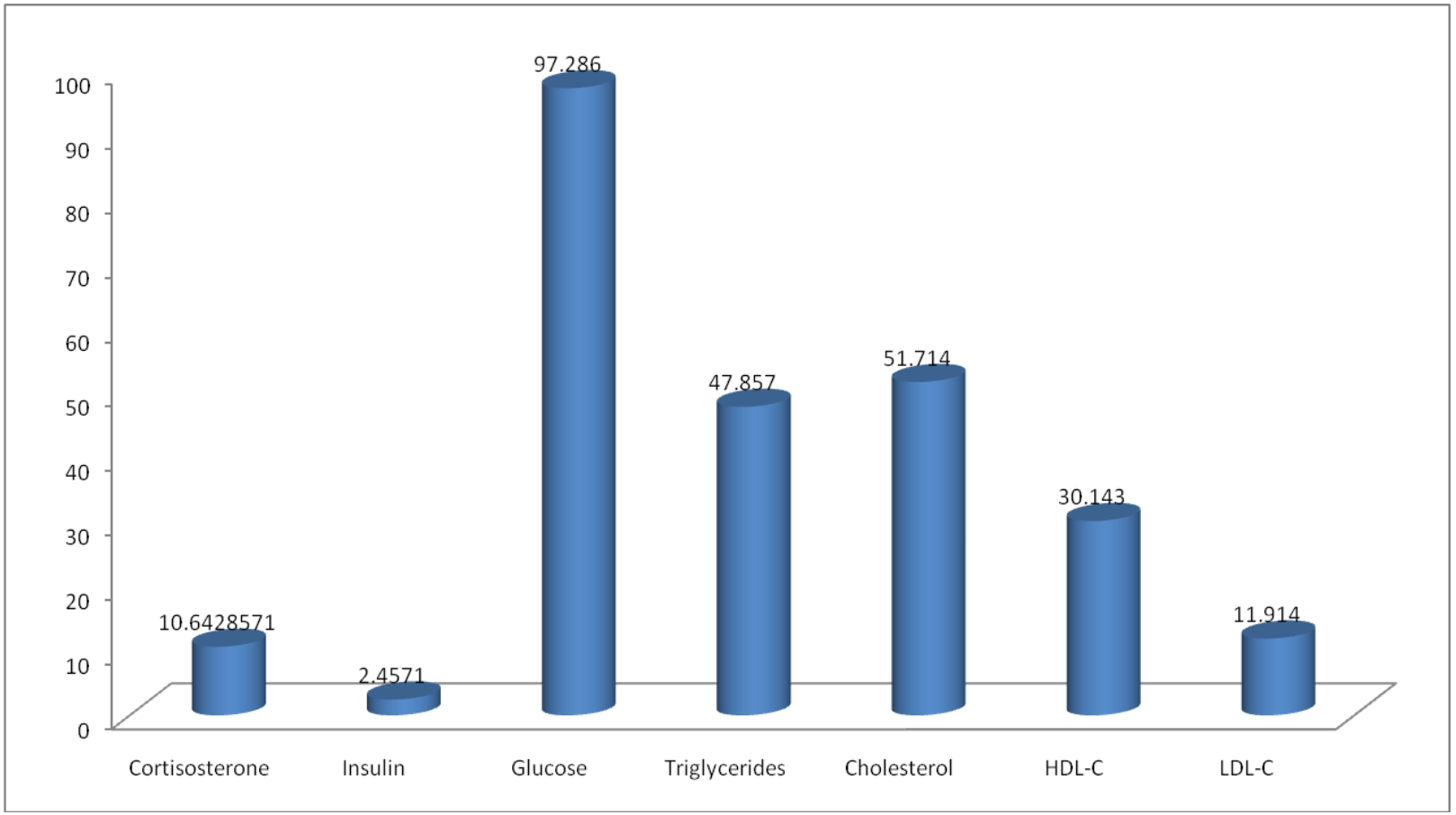


Table (4): **Effect of angiotensin II receptor blocker (losartan) in a dose of 10 mg/kg/day for 10 consecutive days in chronic stressed rats on serum Cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) (Group IV).**

	Cortisosterone (µg/dl)	Insulin (MIU/ml)	Glucose (mg/dl)	Triglycerides (mg/dl)	Cholesterol (mg/dl)	HDL-C (mg/dl)	LDL-C (mg/dl)
1	14.3	2.3	111	62	49	22	14.6
2	16.1	2.6	118	50	65	36	19
3	15.9	2.7	101	62	45	19	13.6
4	12.3	2.4	114	65	62	33	16
5	11.6	2.7	123	55	58	28	19
6	14.5	2.9	102	49	69	38	21.2
7	13.8	3.5	99	42	49	25	15.6
M	14.0714286	2.7286	109.71	55	56.714	28.714	17
SD	1.68395792	0.3946	9.2685	8.4459	9.1781	7.2045	2.7665

Fig. (4): **Effect of angiotensin II receptor blocker (losartan) in a dose of 10 mg/kg/day for 10 consecutive days in chronic stressed rats on serum Cortisosterone, Insulin, Glucose, Triglycerides, Cholesterol, HDL-C and LDL-C (Group IV).**

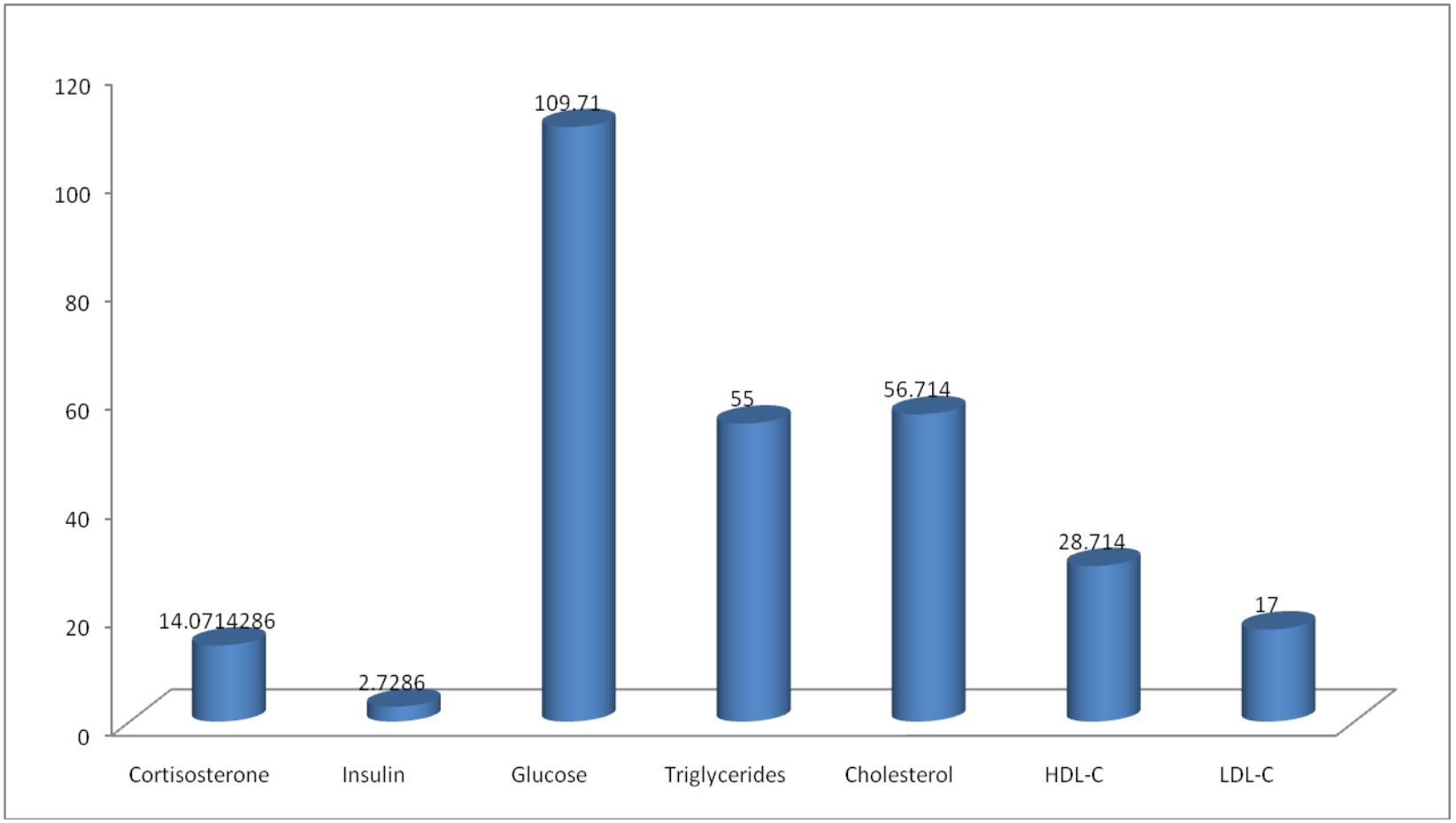


Table (5): **Effect of chronic immobilization stress on serum cortisosterone, insulin and glucose levels in comparison with the control group.**

	Serum cortisosterone (ug/dl)		Serum insulin (MIU/ml)		Glucose (mg/dl)	
	Control	Chronic stress	Control	Chronic stress	Control	Chronic stress
1	10.6	35.8	2.1	6.9	96	156
2	12.7	36.7	2.31	8.7	104	184
3	11.3	53.4	2.51	8.3	98	187
4	10.4	37.2	2.3	7.8	102	175
5	12.4	44.6	2.61	8.5	101	196
6	13.5	39.5	2.7	7.9	99	179
7	11.8	48.9	3.51	8.9	97	167
M	11.8142857	42.3	2.5771	8.1429	99.571	177.71
SD	1.13347338	*6.8254426	0.4595	*0.6779	2.8785	*13.263
t	11.7		17.9		15.2	
P	<0.001		<0.001		<0.001	

**** Significant change compared with the corresponding group (P <0.001).***

Fig. (5): **Effect of chronic immobilization stress on serum cortisosterone, insulin and glucose levels in comparison with the control group.**

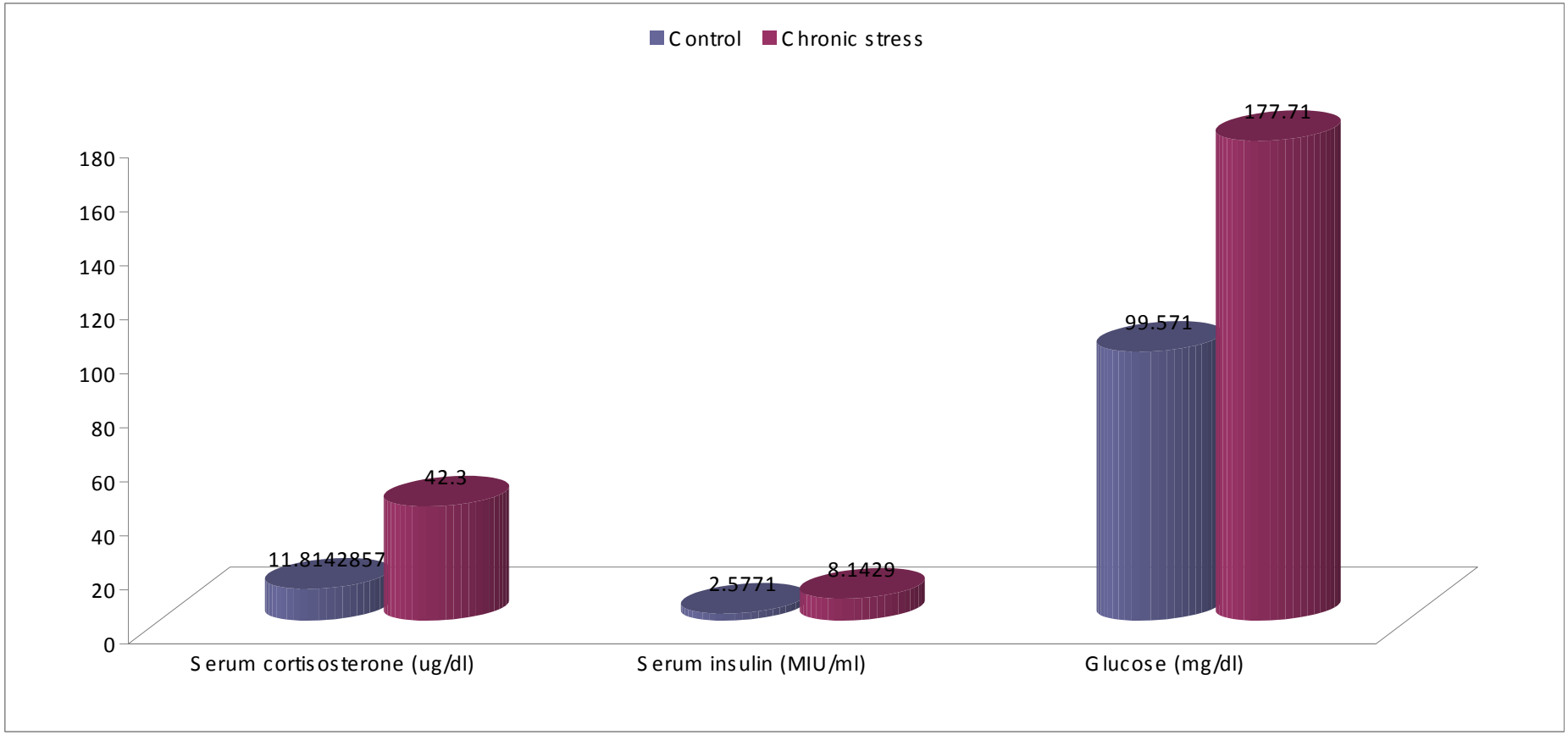


Table (6): **Effect of chronic immobilization stress on lipid profile in comparison with the control group.**

	Triglycerides (mg/dl)		Cholesterol (mg/dl)		HDL-C (mg/dl)		LDL-C (mg/dl)	
	Control	Chronic stress	Control	Chronic stress	Control	Chronic stress	Control	Chronic stress
1	52	97	48	116	26	12	11.6	71.4
2	56	163	63	78	33	16	18.8	42.6
3	47	142	42	92	19	14	13.6	49.6
4	57	88	60	90	30	15	18.6	57.4
5	55	98	55	120	25	13	19	87.4
6	50	92	68	118	38	19	20	80.6
7	49	82	47	95	22	10	15.2	68.6
M	52.286	108.86	54.714	101.29	27.571	14.143	16.686	65.371
SD	3.8173	*30.9	9.4818	*16.54	6.5538	*2.9114	3.2163	*16.303
t	4.8		6.5		4.9		7.8	
P	<0.01		<0.001		<0.01		<0.001	

**** Significant change compared with the corresponding group.***

Fig. (6): **Effect of chronic immobilization stress on lipid profile in comparison with the control group.**

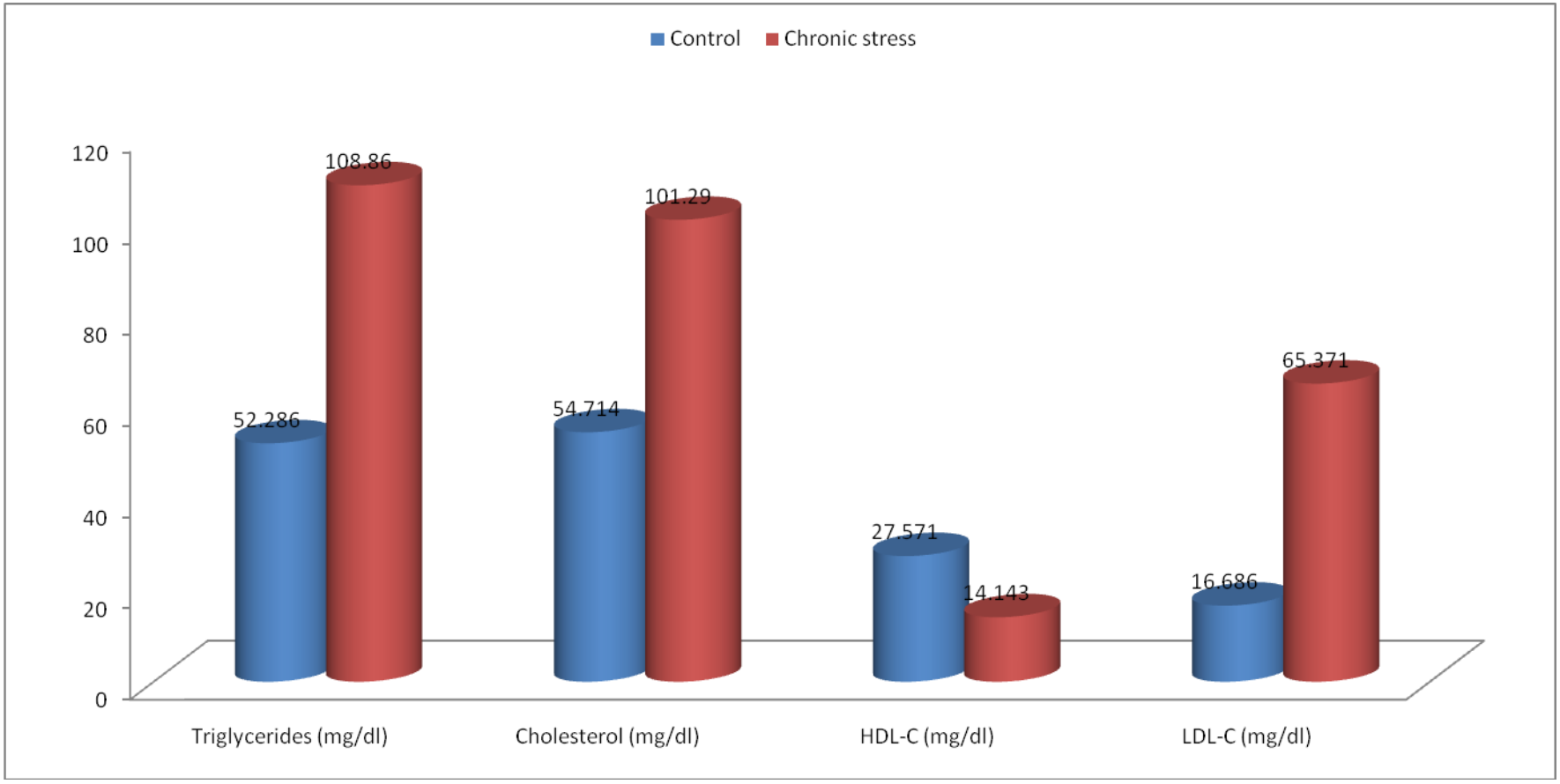


Table (7): **Effect of angiotensin II receptor blocker (losartan) on serum cortisosterone, insulin and glucose levels in comparison with the control group.**

	Serum cortisosterone (ug/dl)		**Serum insulin (MIU/ml)**		**Glucose (mg/dl)**	
	Control	Losartan	Control	Losartan	Control	Losartan
1	10.6	10.2	2.1	2.2	96	90
2	12.7	9.7	2.31	2.1	104	100
3	11.3	10.3	2.51	2.3	98	95
4	10.4	10.6	2.3	3.4	102	98
5	12.4	11.4	2.61	2.3	101	99
6	13.5	12.5	2.7	2.5	99	101
7	11.8	9.8	3.51	2.4	97	98
M	11.8142857	10.6428571	2.5771	2.4571	99.571	97.286
SD	1.13347338	0.99474811	0.4595	0.4353	2.8785	3.7289
t	2.1		0.5		1.3	
P	>0.05 Non significant		>0.05 Non significant		>0.05 Non significant	

Fig. (7): **Effect of angiotensin II receptor blocker (losartan) on serum cortisosterone, insulin and glucose levels in comparison with the control group.**

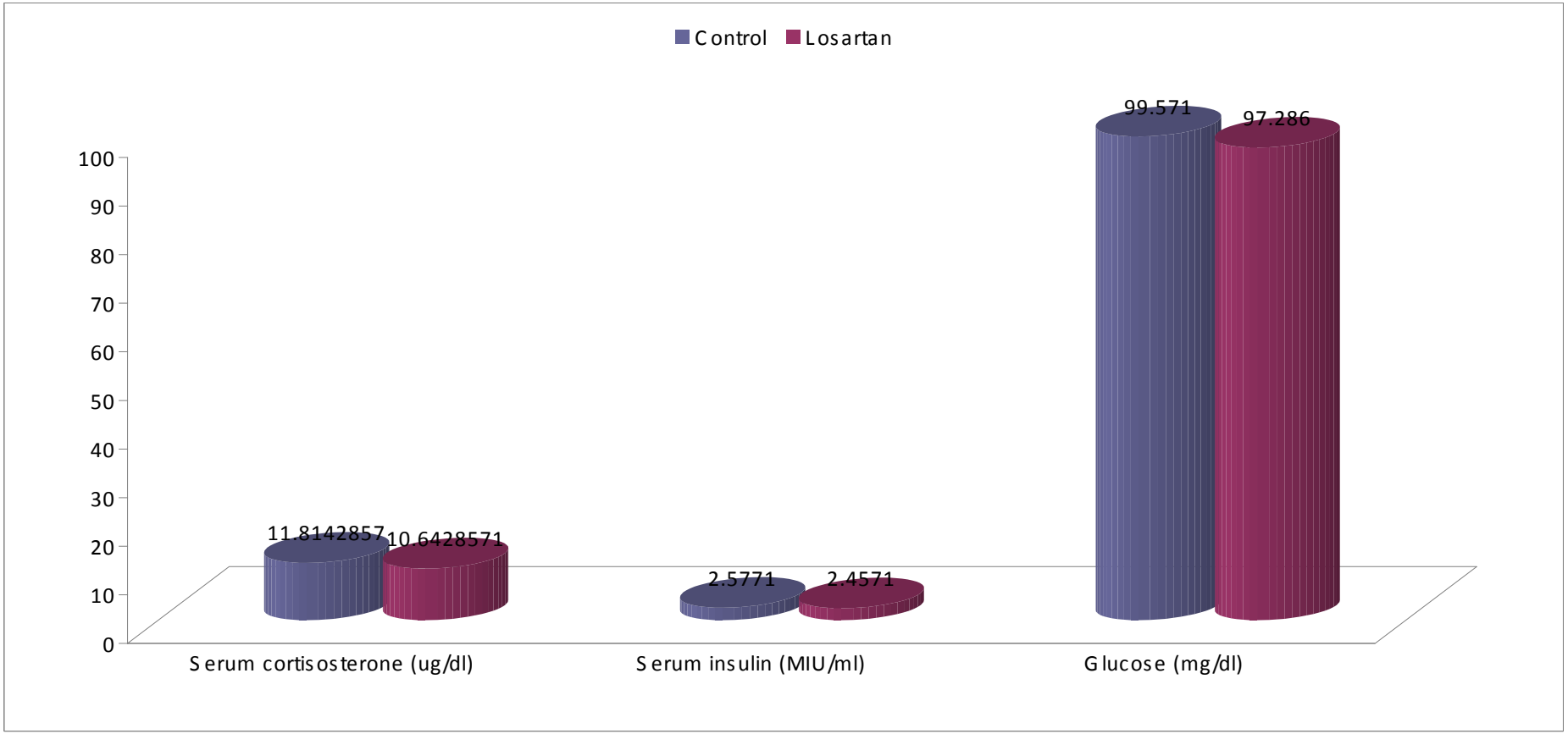


Table (8): **Effect of angiotensin II receptor blocker (losartan) on lipid profile in comparison with the control group.**

	Triglycerides (mg/dl)		Cholesterol (mg/dl)		HDL-C (mg/dl)		LDL-C (mg/dl)	
	Control	Losartan	Control	Losartan	Control	Losartan	Control	Losartan
1	52	50	48	45	26	27	11.6	8
2	56	55	63	60	33	35	18.8	14
3	47	45	42	40	19	20	13.6	11
4	57	50	60	55	30	32	18.6	12.4
5	55	53	55	53	25	29	19	13.4
6	50	46	68	64	38	42	20	12.8
7	49	36	47	45	22	26	15.2	11.8
M	52.286	47.857	54.714	51.714	27.571	30.143	16.686	11.914
SD	3.8173	6.3095	9.4818	8.7505	6.5538	7.0576	3.2163	*1.9895
t	1.6		0.6		0.7		3.3	
P	>0.05 Non significant		>0.05 Non significant		>0.05 Non significant		<0.05	

**** Significant change compared with the corresponding group (P <0.05).***

Fig. (8): **Effect of angiotensin II receptor blocker (losartan) on lipid profile in comparison with the control group.**

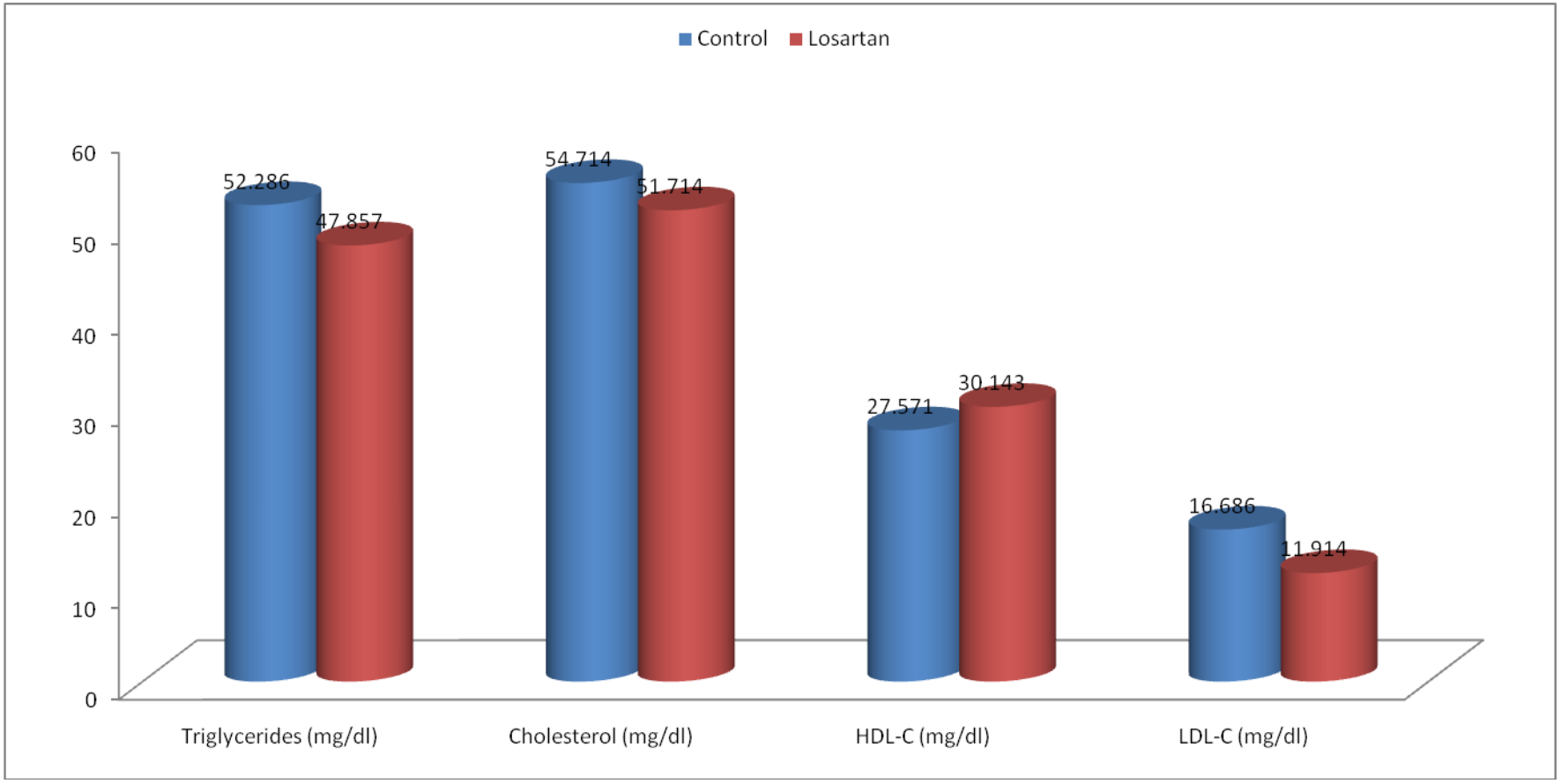


Table (9): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose levels in comparison with the chronic stressed group.**

	Serum cortisosterone (ug/dl)		**Serum insulin (MIU/ml)**		**Glucose (mg/dl)**	
	Chronic stress	Losartan + chronic stress	Chronic stress	Losartan + chronic stress	Chronic stress	Losartan + chronic stress
1	35.8	14.3	2.1	2.3	156	111
2	36.7	16.1	2.31	2.6	184	118
3	53.4	15.9	2.51	2.7	187	101
4	37.2	12.3	2.3	2.4	175	114
5	44.6	11.6	2.61	2.7	196	123
6	39.5	14.5	2.7	2.9	179	102
7	48.9	13.8	3.51	3.5	167	99
M	42.3	14.0714286	8.1429	2.7286	177.71	109.71
SD	6.8254426	*1.68395792	0.6779	*0.3946	13.263	*9.2685
t	10.6		18.3		11.1	
P	<0.001		<0.001		<0.001	

** **Significant change compared with corresponding group (P <0.001).***

Fig. (9): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose levels in comparison with the chronic stressed group.**

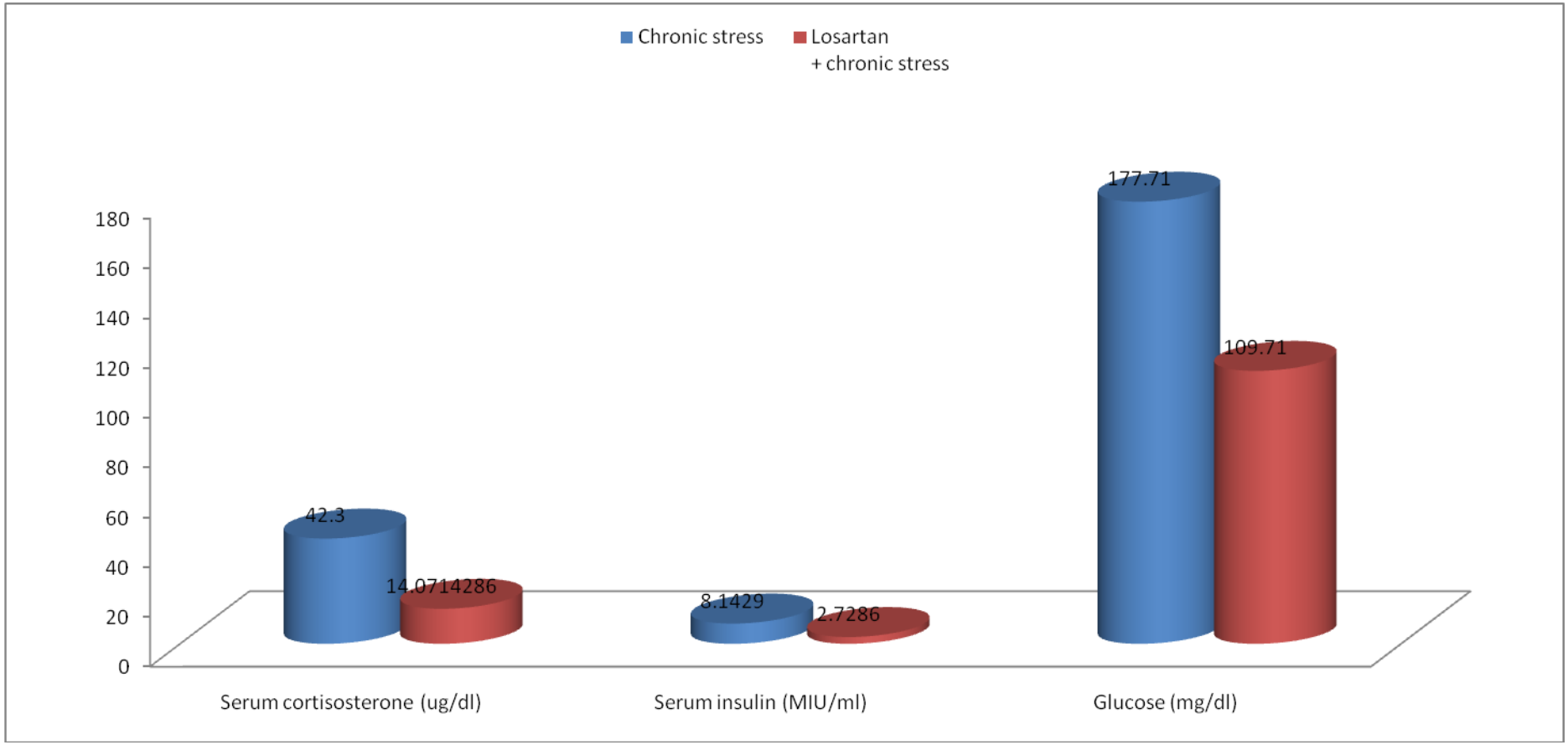


Table (10): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the chronic stressed group.**

	Triglycerides mg/dl		Cholesterol mg/dl		HDL-C mg/dl		LDL-C mg/dl	
	Chronic stress	Losartan + chronic stress	Chronic stress	Losartan + chronic stress	Chronic stress	Losartan + chronic stress	Chronic stress	Losartan + chronic stress
1	97	62	116	49	12	22	71.4	14.6
2	163	50	78	65	16	36	42.6	19
3	142	62	92	45	14	19	49.6	13.6
4	88	65	90	62	15	33	57.4	16
5	98	55	120	58	13	28	87.4	19
6	92	49	118	69	19	38	80.6	21.2
7	82	42	95	49	10	25	68.6	15.6
M	108.86	55	101.29	56.714	14.143	28.714	65.371	17
SD	30.9	*8.4459	16.54	*9.1781	2.9114	*7.2045	16.303	*2.7665
t	4.4		6.2		4.9		7.7	
P	<0.01		<0.001		<0.001		<0.001	

**** Significant change compared with the corresponding group.***

Fig. (10): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the chronic stressed group.**

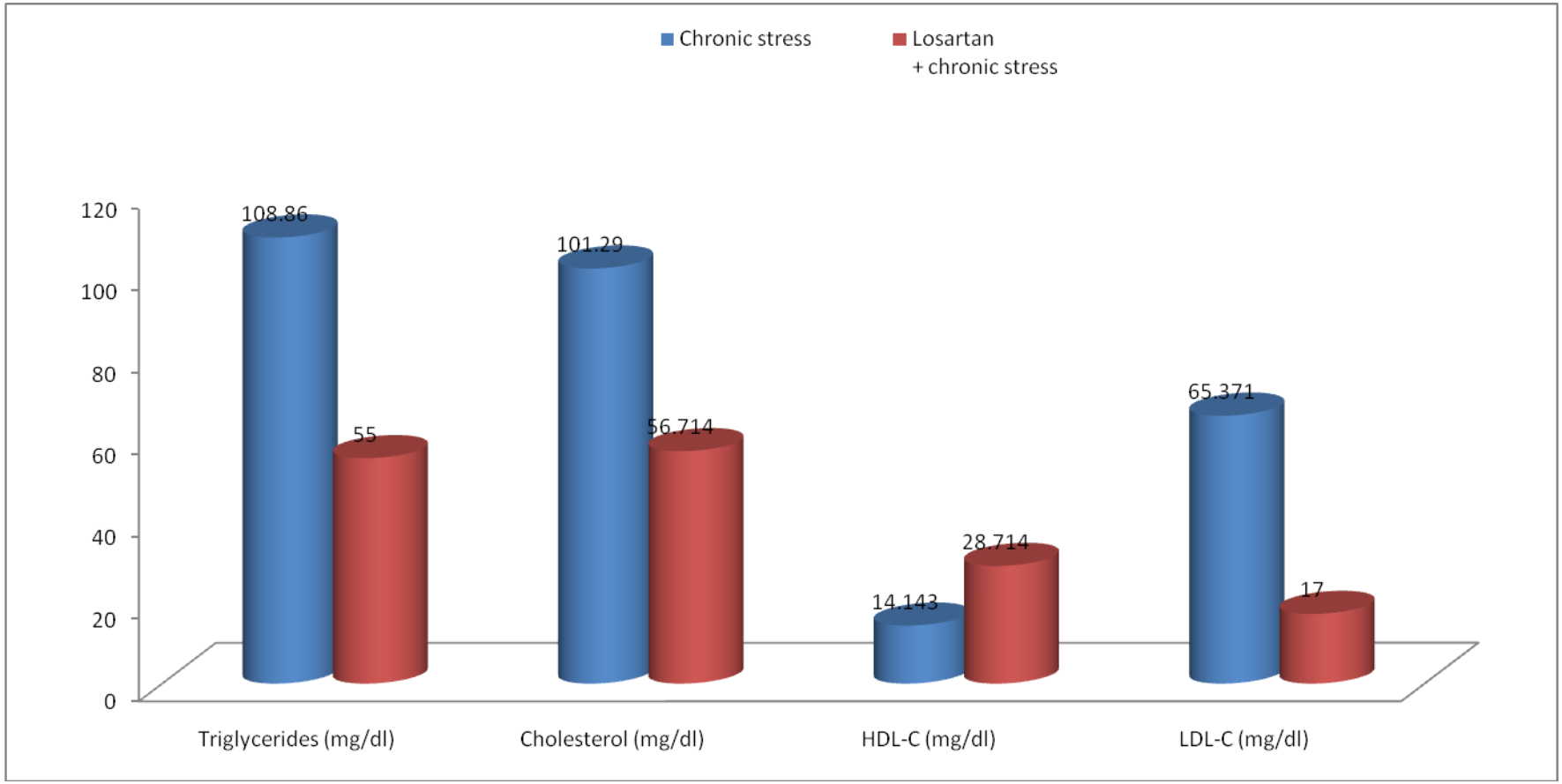


Table (11): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose levels in comparison with losartan group.**

	Serum cortisosterone (ug/dl)		**Serum insulin (MIU/ml)**		**Glucose (mg/dl)**	
	Losartan	Losartan + chronic stress	Losartan	Losartan + chronic stress	Losartan	Losartan + chronic stress
1	10.2	14.3	2.2	2.3	90	111
2	9.7	16.1	2.1	2.6	100	118
3	10.3	15.9	2.3	2.7	95	101
4	10.6	12.3	3.4	2.4	98	114
5	11.4	11.6	2.3	2.7	99	123
6	12.5	14.5	2.5	2.9	101	102
7	9.8	13.8	2.4	3.5	98	99
M	10.6428571	14.0714286	2.4571	2.7286	97.286	109.71
SD	0.99474811	*1.68395792	0.4353	0.3946	3.7289	*9.2685
t	4.6		1.2		3.3	
P	<0.01		>0.05 Non significant		<0.05	

**** Significant change compared with the corresponding group.***

Fig. (11): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose levels in comparison with losartan group.**

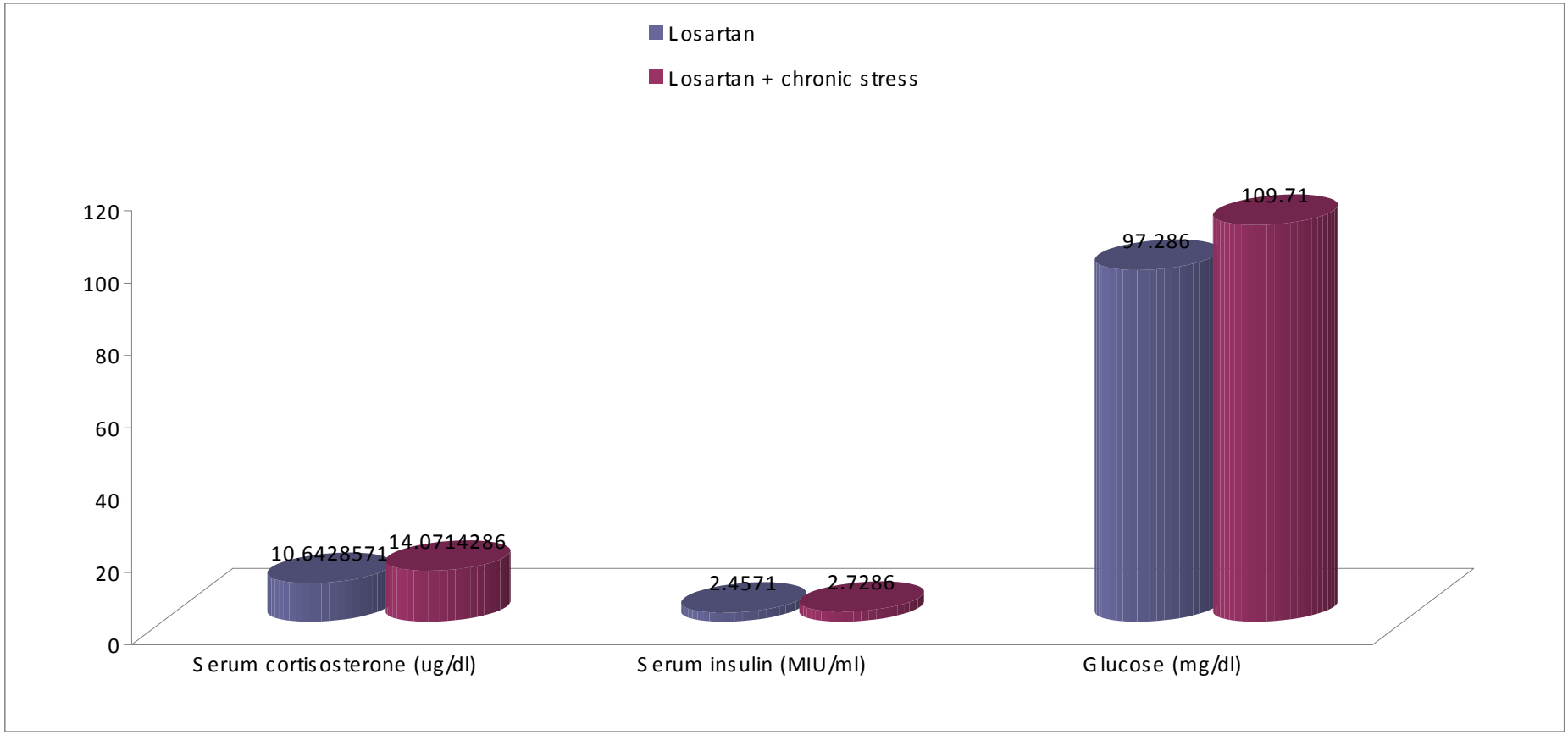


Table (12): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the losartan group.**

	Triglycerides mg/dl		Cholesterol mg/dl		HDL-C mg/dl		LDL-C mg/dl	
	Losartan	Losartan + chronic stress	Losartan	Losartan + chronic stress	Losartan	Losartan + chronic stress	Losartan	Losartan + chronic stress
1	50	62	45	49	27	22	8	14.6
2	55	50	60	65	35	36	14	19
3	45	62	40	45	20	19	11	13.6
4	50	65	55	62	32	33	12.4	16
5	53	55	53	58	29	28	13.4	19
6	46	49	64	69	42	38	12.8	21.2
7	36	42	45	49	26	25	11.8	15.6
M	47.857	55	51.714	56.714	30.143	28.714	11.914	17
SD	6.3095	8.4459	8.7505	9.1781	7.0576	7.2045	1.9895	*2.7665
t	1.8		1.04		0.4		3.9	
P	>0.05 Non significant		>0.05 Non significant		>0.05 Non significant		<0.05	

**** Significant change compared with the corresponding group.***

Fig. (12): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the losartan group.**

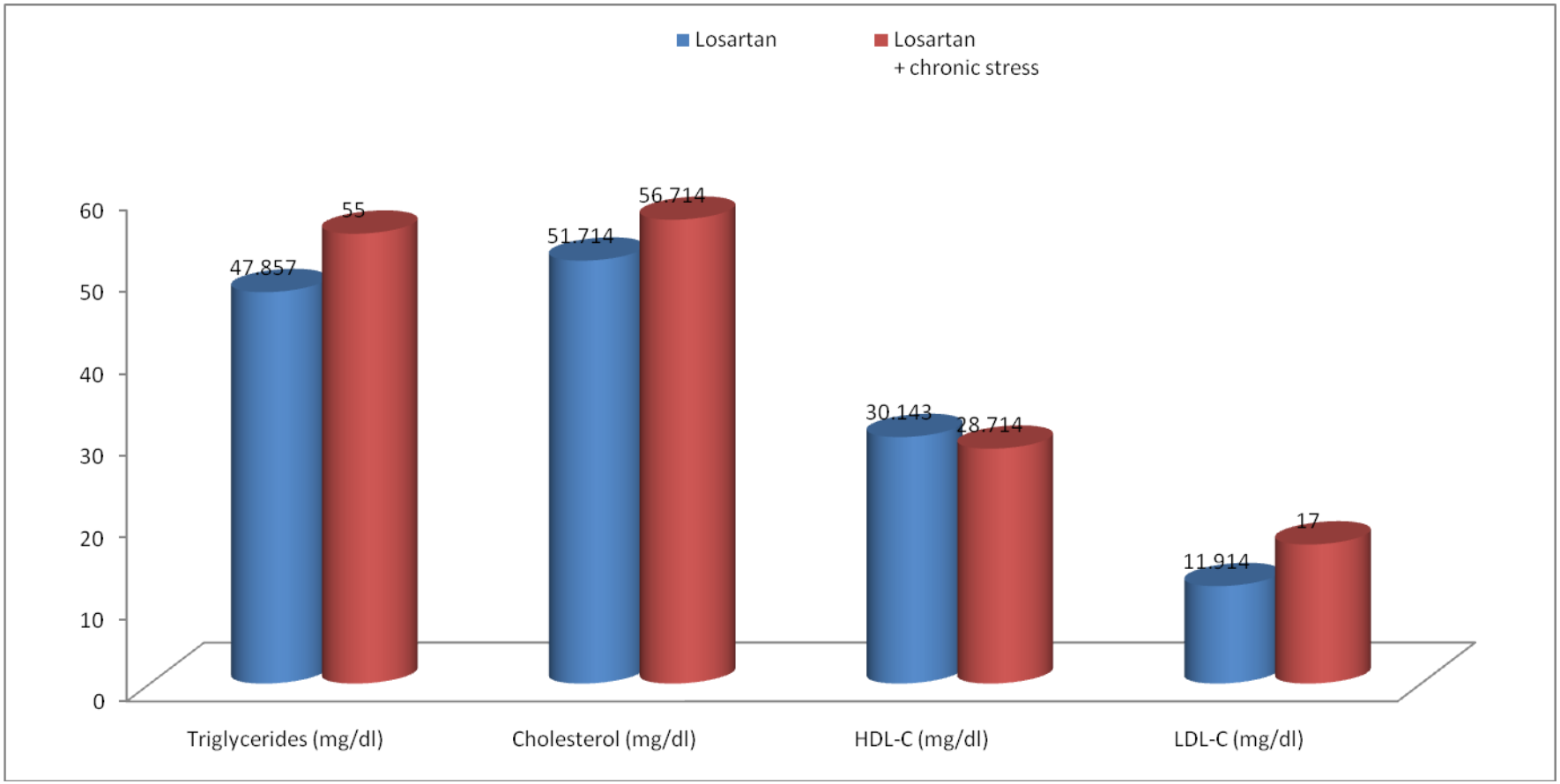


Table (13): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose level in comparison with the control group.**

	Serum cortisosterone (ug/dl)		Serum insulin (MIU/ml)		Glucose (mg/dl)	
	Control	Losartan + chronic stress	Control	Losartan + chronic stress	Control	Losartan + chronic stress
1	10.6	14.3	2.1	2.3	96	111
2	12.7	16.1	2.31	2.6	104	118
3	11.3	15.9	2.51	2.7	98	101
4	10.4	12.3	2.3	2.4	102	114
5	12.4	11.6	2.61	2.7	101	123
6	13.5	14.5	2.7	2.9	99	102
7	11.8	13.8	3.51	3.5	97	99
M	11.8142857	14.0714286	2.5771	2.7286	99.571	109.71
SD	1.13347338	*1.68395792	0.4595	0.3946	2.8785	*9.2685
t	2.9		0.7		2.7	
P	<0.05		>0.05 Non significant		<0.05	

**** Significant change compared with corresponding group.***

Fig. (13): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose levels in comparison with the control group.**

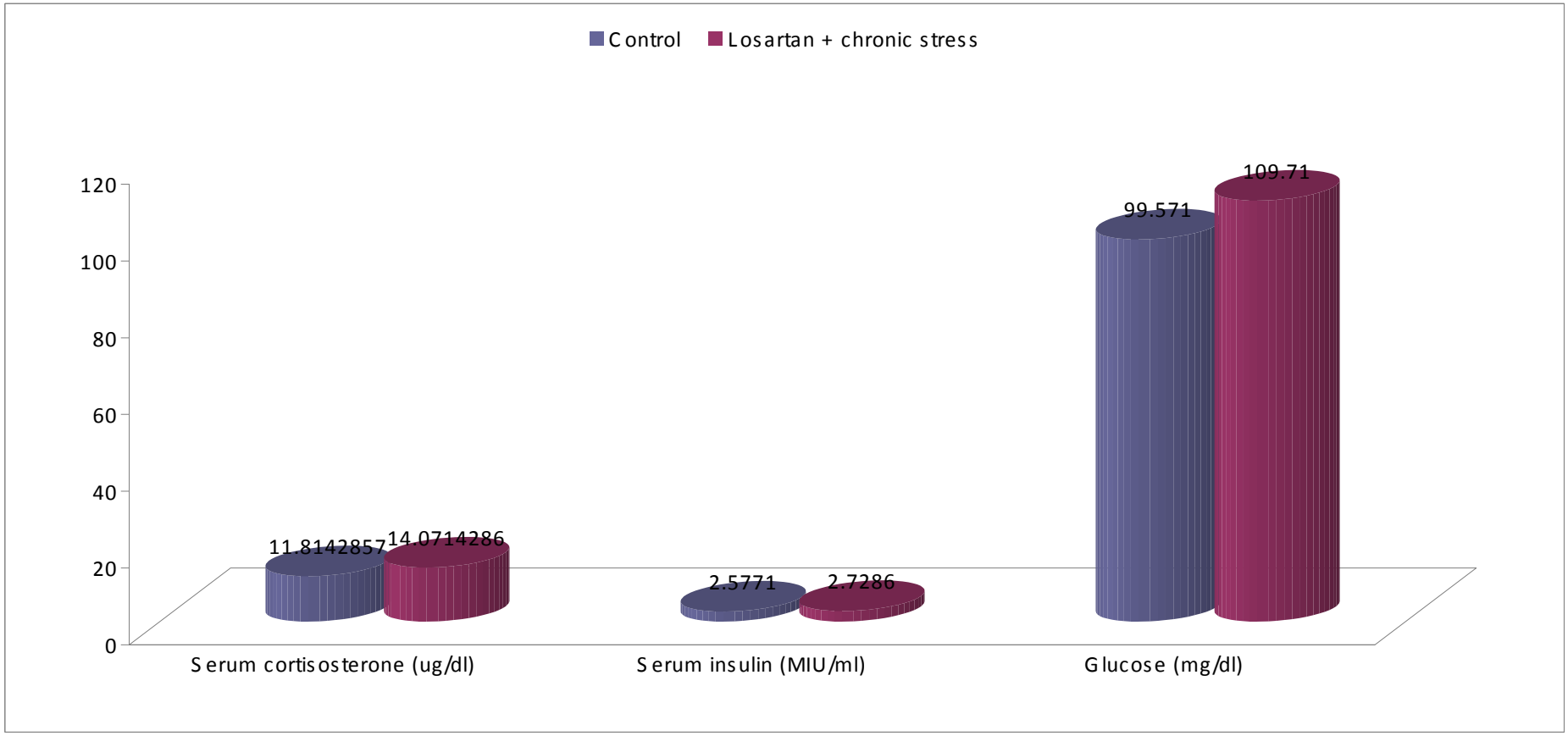
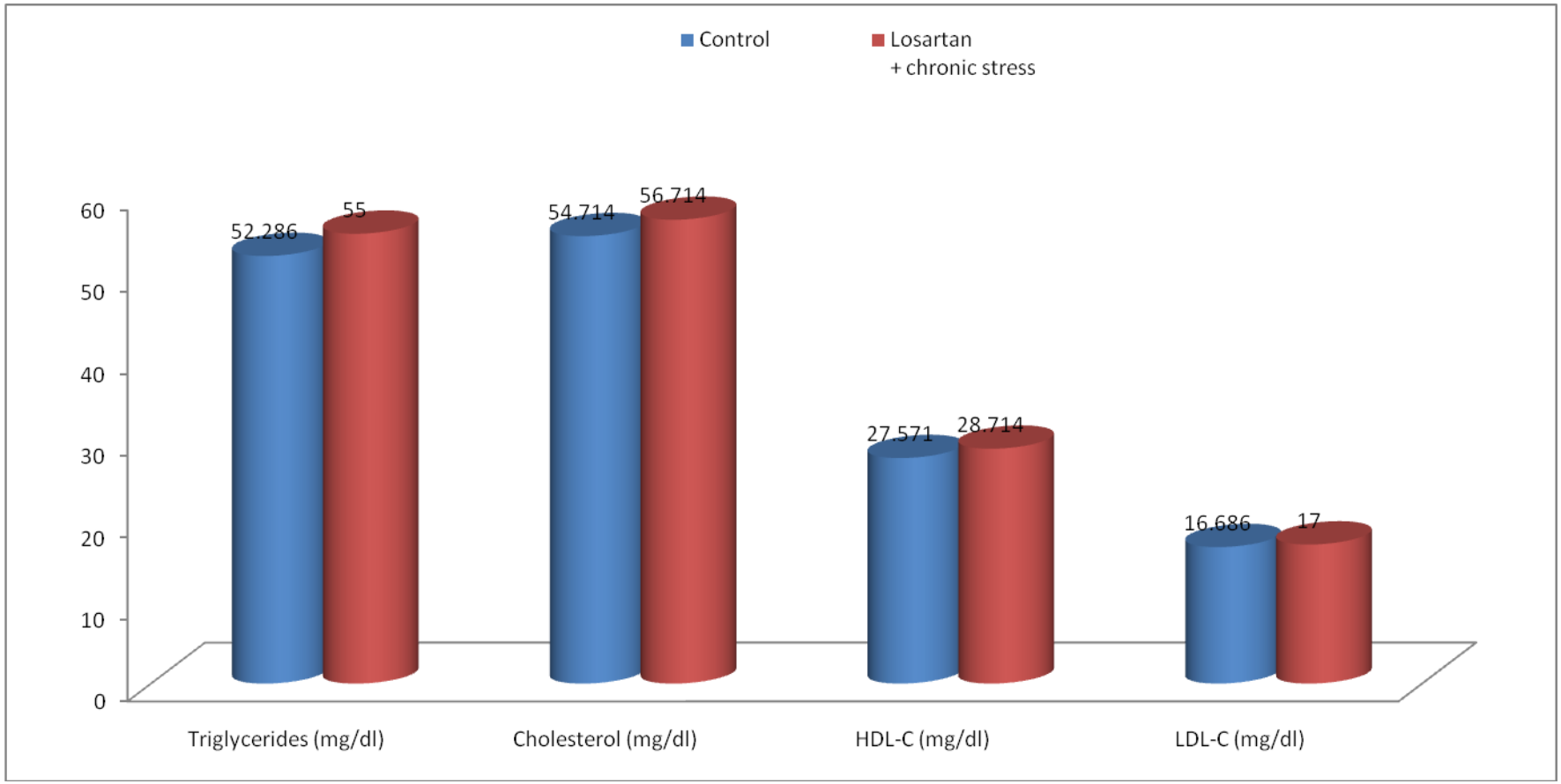


Table (14): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the control group.**

	Triglycerides mg/dl		Cholesterol mg/dl		HDL-C mg/dl		LDL-C mg/dl	
	Control	Losartan + chronic stress	Control	Losartan + chronic stress	Control	Losartan + chronic stress	Control	Losartan + chronic stress
1	52	62	48	49	26	22	11.6	14.6
2	56	50	63	65	33	36	18.8	19
3	47	62	42	45	19	19	13.6	13.6
4	57	65	60	62	30	33	18.6	16
5	55	55	55	58	25	28	19	19
6	50	49	68	69	38	38	20	21.2
7	49	42	47	49	22	25	15.2	15.6
M	52.286	55	54.714	56.714	27.571	28.714	16.686	17
SD	3.8173	8.4459	9.4818	9.1781	6.5538	7.2045	3.2163	2.7665
t	0.8		0.4		0.3		0.2	
P	>0.05 Non significant		>0.05 Non significant		>0.05 Non significant		>0.05 Non significant	

Fig. (14): **Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the control group.**



RESULTS

Table (1) and fig. (1) Serum cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) in the control group (Group I).

It is clear from this table and figure that the serum corticosterone is ranged between 10.4 – 12.7 µg/dl with a mean value of 11.81 µg/dl ± 1.13, serum insulin is ranged between 2.1 – 3.51 MIU/ml with a mean value of 2.57 MIU/ml ± 0.45 , serum glucose is ranged between 96 – 104 mg/dl with mean value 99.57 mg/dl ± 2.87 , serum triglycerides is ranged between 47 – 57 mg/dl with a mean value of 52.28 mg/dl ± 3.81, serum cholesterol is ranged between 42 – 68 mg/dl with a mean value of 54.71 mg/dl ± 9.48, HDL-C is ranged between 19 – 38 mg/dl with a mean value of 27.57 mg/dl ± 6.55 and that LDL-C is ranged between 11.6 – 20 mg/dl with mean value 16.68 mg/dl ± 3.21.

Table (2) and fig. (2) Effect of chronic immobilization stress for 60 minutes daily 10 consecutive days on serum cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) (Group II).

It is clear from this table and figure that the serum corticosterone is ranged between 35.8 – 53.4 µg/dl with a mean value of 42.3 µg/dl ± 6.82, serum insulin is ranged between 6.9 – 8.9 MIU/ml with a mean value of 8.14 MIU/ml ± 0.67 ,

serum glucose is ranged between 156 – 196 mg/dl with mean value mg/dl 177.71 ± 13.26, serum triglycerides is ranged between 82 – 163 mg/dl with a mean value of 108.86 mg/dl ± 30.9, serum cholesterol is ranged between 78 – 120 mg/dl with a mean value of 101.29 mg/dl ± 16.54, HDL-C is ranged between 10 – 19 mg/dl with a mean value of 14.14 mg/dl ± 2.91 and that LDL-C is ranged between 42.6 – 87.4 mg/dl with mean value 65.37 mg/dl ± 16.3.

Table (3) and fig. (3) Effect of angiotensin II receptor blocker (losartan) in a dose of 10 mg/kg/day for 10 consecutive days on serum cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) (Group III).

It is clear from this table and figure that the serum corticosterone is ranged between 9.7 – 12.5 µg/dl with a mean value of 10.64 µg/dl ± 0.99, serum insulin is ranged between 2.1 – 3.4 MIU/ml with a mean value of 2.45 MIU/ml ± 0.43, serum glucose is ranged between 90 – 101 mg/dl with mean value 97.28 mg/dl ± 3.72, serum triglycerides is ranged between 36 – 55 mg/dl with a mean value of 47.85 mg/dl ± 6.3 , serum cholesterol is ranged between 40 – 64 mg/dl with a mean value of 51.71 mg/dl ± 8.75, HDL-C is ranged between 20 – 42 mg/dl with a mean value of 30.14 mg/dl ± 7.05 and that LDL-C is ranged between 8 – 13.4 mg/dl with mean value 11.91 mg/dl ± 1.98.

Table (4) and fig. (4) Effect of angiotensin II receptor blocker (losartan) in a dose of 10 mg/kg/day for 10 consecutive days in chronic stressed rats on serum cortisosterone (µg/dl), Insulin (MIU/ml), Glucose (mg/dl), Triglycerides (mg/dl), Cholesterol (mg/dl), HDL-C (mg/dl) and LDL-C (mg/dl) (Group IV).

It is clear from this table and figure that the serum corticosterone is ranged between 11.6 – 16.1 µg/dl with a mean value of 14.07 µg/dl ± 1.68, The serum insulin is ranged between 2.3 – 3.5 MIU/ml with a mean value of 2.72 MIU/ml ± 0.39, The serum glucose is ranged between 99 – 123 mg/dl with mean value 109.71 mg/dl ± 9.26, serum triglycerides is ranged between 42 – 65 mg/dl with a mean value of 55 mg/dl ± 8.44, serum cholesterol is ranged between 45 – 69 mg/dl with a mean value of 56.71 ± 9.17 mg/dl, HDL-C is ranged between 19 – 38 mg/dl with a mean value of 28.71 mg/dl ± 7.2 and that LDL-C is ranged between 13.6 – 21.2 mg/dl with mean value 17 mg/dl ± 2.76.

Table (5) and fig. (5) Effect of chronic immobilization stress on serum cortisosterone, insulin and glucose level in comparison with the control group.

From this table and figure, it is clear that there is a significant increase in serum corticosterone (µg/dl) in rats subjected to chronic immobilization stress for 60min/day for 10 consecutive days when compared with the control group as it was changed from 11.81 µg/dl ± 1.13 in the control group to 42.3 µg/dl ± 6.82 in chronic stressed rats ($P < 0.001$). As regard the serum insulin, also there is a significant increase in chronic stressed rats when compared with the control group as it was changed from 2.57 MIU/ml ± 0.45 in the control group to 8.14 MIU/ml ± 0.67 in chronic stressed rats ($P < 0.001$). As regard

the serum glucose, also there is a significant increase in chronic stressed rats when compared with the control group as it was changed from 99.57 mg/dl ± 2.87 in the control group to 177.71 mg/dl ± 13.26 in chronic stressed rats (P <0.001).

Table (6) and fig. (6) Effect of chronic immobilization stress on lipid profile in comparison with the control group.

From this table and figure, it is clear that there is significant increase in serum triglycerides (mg/dl) in rats subjected to chronic immobilization stress for 60min/day for 10 consecutive days when compared with the control group as it was changed from 52.28 mg/dl ± 3.81 in the control group to 108.86 mg/dl ± 30.9 in chronic stressed rats (P <0.01). As regard the serum cholesterol, also there is a significant increase in chronic stressed rats when compared with the control group as it was changed from 54.71 mg/dl ± 9.48 in the control group to 101.29 mg/dl ± 16.54 in chronic stressed rats (P <0.001). As regard the serum HDL-C, also there is a significant decrease in chronic stressed rats when compared with the control group as it was changed from 27.57 mg/dl ± 6.55 in the control group to 14.14 mg/dl ± 2.91 in chronic stressed rats (P <0.01). Also as regard the serum LDL-C, there is a significant increase in chronic stressed rats when compared with the control group as it was changed from 16.68 mg/dl ± 3.21 in the control group to 65.37 mg/dl ± 16.3 in chronic stressed rats (P <0.001).

Table (7) and fig. (7) Effect of angiotensin II receptor blocker (losartan) on serum cortisosterone, insulin and glucose level in comparison with the control group.

From this table and figure, it is clear that there is non significant decrease in serum corticosterone (µg/dl) in rats receiving losartan at a dose of 10mg/kgm/day for 10 consecutive days when compared with the control group as it was changed from 11.81 µg/dl ± 1.13 in the control group to 10.64 µg/dl ± 0.99 in losartan treated rats (P >0.05). As regard the serum insulin, also there is non significant decrease in losartan treated rats when compared with the control group as it was changed from 2.57 MIU/ml ± 0.45 in the control group to 2.45 MIU/ml ± 0.43 in losartan treated rats (P >0.05). As regard the serum glucose, also there is also non significant decrease in losartan treated rats when compared with the control group as it was changed from 99.57 mg/dl ± 2.87 in the control group to 97.28 mg/dl ± 3.72 in losartan treated rats (P >0.05).

Table (8) and fig. (8) Effect of angiotensin II receptor blocker (losartan) on lipid profile in comparison with the control group.

From this table and figure, it is clear that losartan intake leads to non significant decrease in serum triglycerides (mg/dl) in rats receiving losartan at a dose of 10mg/kgm/day for 10 consecutive days when compared with the control group as it was changed from 52.28 mg/dl ± 3.81 in the control group to 47.85 mg/dl ± 6.3 in losartan treated rats (P >0.05). As regard the serum cholesterol, also there is also non significant decrease in losartan treated rats when compared with the control group as it was changed from 54.71 mg/dl ± 9.48 in the control group to 51.71 mg/dl ± 8.75 in losartan treated rats (P >0.05). As regard the serum HDL-C, also there is non significant increase in losartan treated rats when compared with the

control group as it was changed from 27.57 mg/dl ± 6.55 in the control group to 30.14 mg/dl ± 7.05 in losartan treated rats (P >0.05). Also as regard the serum LDL-C, there is significant decrease in losartan treated rats when compared with the control group as it was changed from 16.68 mg/dl ± 3.21 in the control group to 11.91 mg/dl ± 1.98 in losartan treated rats (P <0.05).

Table (9) and fig. (9) Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose level in comparison with the chronic stressed group.

Table (9) and figure (9) show that there is a significant decrease in serum corticosterone (µg/dl) in rats receiving losartan at a dose of 10mg/kgm/day for 10 consecutive days before exposure to chronic immobilization stress regimen when compared with the chronic stressed group as it was changed from 42.3 µg/dl ± 6.82 in the chronic stressed group to 14.07 µg/dl ± 1.68 in losartan treated chronic stressed rats (P <0.001). As regard the serum insulin, also there is a significant decrease in losartan treated chronic stressed rats when compared with the chronic stressed rats as it was changed from 8.14 MIU/ml ± 0.67 in the chronic stressed group to 2.72 MIU/ml ± 0.39 in losartan treated chronic stressed rats (P <0.001). As regard the serum glucose, also there is also significant decrease in losartan treated chronic stressed rats when compared with the chronic stressed rats as it was changed from 177.71 mg/dl ± 13.26 in the chronic stressed rats to 109.71 mg/dl ± 9.26 in losartan treated chronic stressed rats (P <0.001).

Table (10) and fig. (10) Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the chronic stressed group.

From this table and figure, it is clear that losartan treatment in chronic immobilization stressed rats leads to significant decrease in serum triglycerides (mg/dl) when compared with the chronic stressed group as it was changed from 108.86 mg/dl ± 30.9 in the chronic stressed rats to 55 mg/dl ± 8.44 in losartan treated chronic stressed rats ($P < 0.01$). As regard the serum cholesterol, also there is a significant decrease in losartan treated chronic stressed rats when compared with the chronic stressed rats as it was changed from 101.29 mg/dl ± 16.54 in the chronic stressed rats to 56.71 mg/dl ± 9.17 in losartan treated chronic stressed rats ($P < 0.001$). As regard the serum HDL-C, also there is a significant increase in losartan treated chronic stressed rats when compared with the chronic stressed rats as it was changed from 14.14 mg/dl ± 2.91 in the chronic stressed rats to 28.71 mg/dl ± 7.2 in losartan treated chronic stressed rats ($P < 0.001$). As regard the serum LDL-C, there is a significant decrease in losartan treated chronic stressed rats when compared with the chronic stressed group as it was changed from 65.37 mg/dl ± 16.3 in the chronic stressed rats to 17 mg/dl ± 2.76 in losartan treated chronic stressed rats ($P < 0.001$).

Table (11) and fig. (11) Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose level in comparison with losartan group.

Table (11) and figure (11) show that there is a significant increase in serum corticosterone (ug/dl) in rats receiving losartan at a dose of 10mg/kgm/day for 10 consecutive days before exposure to chronic immobilization stress regimen and

when compared with the losartan treated group as it was changed from 10.64 ug/dl ± 0.99 in the losartan treated rats to 14.07 ug/dl ± 1.68 in losartan treated chronic stressed rats (P <0.01). As regard the serum insulin, there is non significant increase in losartan treated chronic stressed rats when compared with the losartan treated rats as it was changed from 2.45 MIU/ml ± 0.43 in the losartan treated group to 2.72 MIU/ml ± 0.39 in losartan treated chronic stressed rats (P >0.05). As regard the serum glucose, also there is a significant increase in losartan treated chronic stressed rats when compared with the losartan treated rats as it was changed from 97.28 mg/dl ± 3.72 in the losartan treated rats to 109.71 mg/dl ± 9.26 in losartan treated chronic stressed rats (P <0.05).

Table (12) and fig. (12) Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the losartan group.

From this table and figure, it is clear that losartan treatment in chronic immobilization stressed rats leads to non significant increase in serum triglycerides (mg/dl) when compared with the losartan treated group as it was changed from 47.85 mg/dl ± 6.3 in the losartan treated rats to 55 mg/dl ± 8.44 in losartan treated chronic stressed rats (P >0.05). As regard the serum cholesterol, also there is non significant increase in losartan treated chronic stressed rats when compared with the losartan treated rats as it was changed from 51.71 mg/dl ± 8.75 in the losartan treated rats to 56.71 mg/dl ± 9.17 in losartan treated chronic stressed rats (P >0.05). As regard the serum HDL-C, also there is non significant decrease in losartan treated chronic stressed rats when compared with the losartan treated rats as it was changed from 30.14 mg/dl ± 7.05 in the losartan treated rats to 28.71 mg/dl ± 7.2 in losartan treated chronic stressed rats (P >0.05). Also as regard the serum LDL-C, there is

significant increase in losartan treated chronic stressed rats when compared with the losartan treated group as it was changed from 11.91 mg/dl ± 1.98 in the losartan treated rats to 17 mg/dl ± 2.76 in losartan treated chronic stressed rats (P <0.05).

Table (13) and fig. (13) Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on serum cortisosterone, insulin and glucose level in comparison with the control group.

Table (13) and figure (13) show that there is significant increase in serum corticosterone (µg/dl) in rats receiving losartan at a dose of 10mg/kgm/day for 10 consecutive days before exposure to chronic immobilization stress regimen and when compared with the control group as it was changed from 11.81 µg/dl ± 1.13 in the control group to 14.07 µg/dl ± 1.68 in losartan treated chronic stressed rats (P <0.05). As regard the serum insulin, there is non significant increase in losartan treated chronic stressed rats when compared with the control group as it was changed from 2.57 MIU/ml ± 0.45 in the control group to 2.72 MIU/ml ± 0.39 in losartan treated chronic stressed rats (P >0.05). As regard the serum glucose, there is significant increase in losartan treated chronic stressed rats when compared with the control group as it was changed from 99.57 mg/dl ± 2.87 in control group to 109.71 mg/dl ± 9.26 in losartan treated chronic stressed rats (P <0.05).

Table (14) and fig. (14) Effect of angiotensin II receptor blocker (losartan) in chronic stressed rats on lipid profile in comparison with the control group.

From this table and figure, it is clear that losartan treatment in chronic immobilization stressed rats leads to non significant increase in serum triglycerides (mg/dl) when compared with the control group as it was changed from 52.28

mg/dl ± 3.81 in the control group to 55 mg/dl ± 8.44 in losartan treated chronic stressed rats (P >0.05). As regard the serum cholesterol, also there is non significant increase in losartan treated chronic stressed rats when compared with the control group as it was changed from 54.71 mg/dl ± 9.48 in the control group to 56.71 mg/dl ± 9.17 in losartan treated chronic stressed rats (P >0.05). As regard the serum HDL-C, also there is non significant increase in losartan treated chronic stressed rats when compared with the control group as it was changed from 27.57 mg/dl ± 6.55 in the control group to 28.71 mg/dl ± 7.2 in losartan treated chronic stressed rats (P >0.05). Also as regard the serum LDL-C, there is non significant increase in losartan treated chronic stressed rats when compared with the control group as it was changed from 16.68 mg/dl ± 3.21 in the control group to 17 mg/dl ± 2.76 in losartan treated chronic stressed rats (P >0.05).