

RESULTS

CHAPTER-III

R E S U L T S

Level of protein-bound hexose (PBH), protein-bound sialic acid (PBSA), protein-bound fucose (PBF), protein-bound hexosamine (PBHA) and blood sugar (BS) are studied in normal subjects and in those patients suffering from diabetes mellitus and in those diabetics having cardiac disorders, renal disorders, hypertension and in patients having neuromuscular disorders.

The patients under the study are divided into five groups. Group-I comprising of diabetes mellitus patients, Group-II comprising of diabetic patients with cardiac diseases and Group-III comprising of diabetic patients with renal disorders. Diabetic patients with hypertension comprises of Group-IV and patients with neuromuscular disorders comprises of Group-V.

Totally thirty normal subjects are studied. Among thirty normal subjects, twenty-one are males and nine are females, age ranging from 27 years to 76 years.

Table-3 shows the levels of blood sugar PBH, PBSA, PBF and PBHA in normal subjects. The mean with standard deviation values of BS, PBH, PBSA, PBF and PBHA are shown in Table-9.

In normal subjects the blood sugar level ranges from 60 to 114 mg%. The PBH level is found to range from 25.71 to 162.80 mg%. The PBSA level is found between 42.00 and 88.88 mg%, while the PBF level is found to vary between 4.71 to 11.05 mg% and the PBHA level ranges from 71.42 to 125.00 mg%.

Totally 30 patients suffering from diabetes mellitus are studied, comprising of 18 male and 12 female patients, age ranging from 30 years to 70 years.

TABLE-3

**LEVELS OF BS, PBH,PBSA, PBF AND PBHA IN NORMAL
SUBJECTS
CONTD.**

Sr. No.	Age (yrs)	Sex	B.S. mg%	P B H mg%	PBSA mg%	P B F mg%	PBHA mg%
16.	33	M	69	75.00	64.00	9.67	137.50
17.	50	F	79	93.00	93.00	7.88	200.00
18.	35	M	89	62.00	62.00	6.01	112.50
19.	42	M	103	67.50	69.00	7.38	107.14
20.	45	M	96	100.00	65.00	9.20	89.28
21.	45	M	83	87.50	60.00	8.86	71.42
22.	36	F	80	100.00	70.00	8.40	84.00
23.	39	M	90	90.00	65.00	6.00	77.00
24.	35	M	89	62.00	70.00	7.00	95.43
25.	49	F	80	93.00	68.00	7.70	78.00
26.	42	M	85	70.30	58.00	8.00	100.00
27.	55	F	90	96.00	64.00	7.05	85.00
28.	40	M	80	100.00	70.00	8.08	78.00
29.	32	M	69	62.50	12.00	9.09	110.00
30.	30	F	80	105.00	80.00	7.70	95.00

Table-4 shows the levels of BS, PBH, PBSA, PBF and PBHA in diabetes mellitus patients. The mean values with standard deviation (S.D.) are shown in Table-9.

In diabetes mellitus patients the blood sugar values are found to range from 121 to 444 mg%. The PBH level ranges from 40 to 342.85 mg%. The level of PBSA ranges from 36.92 to 89.23 mg%, while the levels of PBF ranges from 7.10 to 13.33 mg%. The PBHA level is observed in the range of 71.43 to 300.00 mg%.

The mean blood sugar level in diabetic patients is 237.97 mg% and in normal subjects the level is 84.03 mg%. The level of blood sugar in diabetic patients is higher as compared with the normal subjects and this difference is found to be statistically significant ($P < 0.01$). The mean level of PBH in diabetic patients is 123.60 mg% and in normal subjects the level is 83.35 mg%. The level of PBH is higher in diabetics than in normal subjects and this difference is found to be statistically significant ($P < 0.05$).

The mean PBSA level in diabetic subjects is 60.24 mg% and in normal subjects it is 67.14 mg%. Although the level of PBSA is observed to be lower in diabetics, the difference is found to be statistically insignificant ($P > 0.05$). The mean value of PBF in diabetic patients is observed to be 10.49 mg% and 8.03 mg% in normal subjects. The level of PBF is higher in diabetic patients as compared to normal subjects and this difference is found to be statistically significant ($P < 0.01$).

The mean level of PBHA in diabetic patients is 169.24 mg% and in normal subjects, the level is 99.65 mg%. The higher level of PBHA in diabetics is found to be highly significant ($P < 0.01$).

Totally 30 diabetic patients suffering from cardiac diseases are studied, comprising of 16 male and 14 female patients, age ranging from 35 years to 70 years.

TABLE-4
LEVELS OF BS, PBH, PBSA, PBF AND PBHA IN GROUP-I
PATIENTS

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
01.	54	F	308	114.28	38.46	10.00	150.00
02.	65	F	135	114.28	41.54	10.00	137.50
03.	34	F	128	285.71	66.15	13.33	233.20
04.	42	F	223	142.85	66.15	11.00	200.00
05.	40	M	157	114.28	53.83	13.30	266.66
06.	45	M	422	257.14	36.92	16.60	300.00
07.	46	M	444	342.85	69.23	13.30	266.00
08.	36	M	169	87.23	89.23	8.50	186.00
09.	39	F	217	112.50	80.00	11.40	160.00
10.	70	M	171	75.00	76.92	7.10	107.14
11.	51	M	137	129.00	64.61	7.86	71.43
12.	30	M	134	64.52	56.92	7.15	250.00
13.	50	F	167	100.00	41.00	9.60	107.14
14.	45	M	249	82.86	76.92	10.00	125.00
15.	40	F	422	142.86	70.77	13.00	142.50

TABLE-4
LEVELS OF BS, PBH, PBSA, PBF AND PBHA IN GROUP-I
PATIENTS
CONTD.

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
16.	35	F	209	90.50	55.38	9.11	125.00
17.	38	M	268	71.31	72.31	9.11	125.00
18.	42	M	371	171.43	55.00	11.71	137.80
19.	34	F	121	142.86	56.66	7.90	125.00
20.	35	M	244	171.43	56.66	10.73	180.50
21.	35	M	196	60.00	85.00	10.41	187.50
22.	50	M	293	45.71	46.00	11.06	200.00
23.	40	M	326	54.29	42.00	11.71	125.00
24.	69	F	350	51.43	54.00	7.64	125.00
25.	50	M	140	40.00	42.00	8.78	145.83
26.	50	F	200	105.00	45.00	12.70	210.00
27.	46	M	344	172.40	55.80	10.71	167.30
28.	40	F	217	114.00	80.00	11.45	183.00
29.	55	M	137	130.00	63.90	8.35	172.00
30.	50	M	240	122.00	69.00	10.70	165.00

Table-5 shows the levels of BS, PBH, PBSA, PBF and PBHA in diabetic patients with cardiac diseases. The mean values with S.D. are shown in Table-9.

In cardiac disease diabetic patients, the blood sugar values range from 76 to 472 mg%. The PBH levels range from 22.86 to 142 mg%. The PBSA levels range from 38.09 to 146 mg%. While the PBF levels range from 7.10 to 16.91 mg%. The PBHA levels range from 41.66 to 294.12 mg%.

The mean blood sugar level in diabetic cardiac patients is 175.5 mg% and in normal subjects, the level is 84.70 mg%. The blood sugar level is much higher in cardiac patients as compared to normal subjects and this difference is found to be statistically highly significant ($P < 0.01$).

The mean PBH level in cardiac patients is 85.97 mg%. While in normal subjects the level is found to be 83.35 mg%. The level of PBH is slightly higher in cardiac patients as compared to normal subjects. The difference is statistically insignificant ($P > 0.05$).

The mean PBSA levels in cardiac patients is 77.10 mg% and 67.14 mg% in normal subjects. The PBSA level is little higher in cardiac patients as compared to normal subjects but this difference is found to be statistically insignificant ($P > 0.05$).

The mean PBF level in cardiac patients is 10.46 mg% and in normal subjects the level is 8.03 mg%. The PBF level is higher in cardiac patients as compared to normal subjects and this difference is found to be statistically significant ($P < 0.01$).

The mean PBHA levels in cardiac patients is 159.60 mg% and 99.65 mg% in normal subjects. The PBHA level is much higher in the cardiac patients as compared to normal subjects and this difference is found to be highly significant ($P < 0.01$).

TABLE-5
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-II PATIENTS

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
01.	35	F	101	87.50	92.30	7.10	250.00
02.	42	F	137	77.14	43.33	10.89	41.66
03.	55	F	109	60.00	58.33	11.71	41.66
04.	35	M	131	22.86	44.00	8.13	166.66
05.	60	F	477	62.86	46.00	7.32	166.66
06.	48	M	245	106.25	74.00	7.15	62.50
07.	55	F	147	137.50	46.00	8.70	166.66
08.	60	F	98	69.44	85.00	8.78	264.71
09.	50	F	222	50.00	65.00	8.57	205.88
10.	40	F	346	69.44	57.50	8.34	58.82
11.	60	M	183	141.95	38.09	8.57	294.12
12.	60	F	101	55.55	87.05	8.90	100.00
13.	55	F	161	100.00	80.00	13.44	160.00
14.	51	M	97	108.57	112.35	11.52	50.00
15.	55	M	106	74.29	132.00	11.68	130.00

TABLE-5
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-II PATIENTS
CONTD.

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
16.	60	M	76	128.57	48.24	12.00	150.00
17.	53	M	108	63.88	88.88	16.91	211.54
18.	48	F	85	86.11	80.00	13.00	96.15
19.	50	M	110	134.21	96.00	11.03	211.54
20.	70	F	187	71.05	126.00	9.66	230.77
21.	62	M	351	50.00	40.00	12.41	134.62
22.	60	M	92	121.05	88.00	10.69	166.66
23.	45	M	101	60.00	72.00	12.92	166.66
24.	52	M	273	64.00	104.00	15.12	229.16
25.	55	M	152	135.00	146.00	14.30	270.83
26.	40	F	340	68.44	58.30	8.40	59.00
27.	48	M	254	106.35	80.00	7.20	65.00
28.	60	M	185	142.00	88.10	8.60	290.00
29.	55	F	160	100.00	80.00	13.40	180.00
30.	35	M	130	25.00	56.40	7.45	166.66

Totally 30 diabetic patients suffering from renal diseases are studied, comprising of 18 male and 12 female patients, age ranging from 9 years to 55 years.

Table-6 shows the levels of blood sugar, PBH, PBSA, PBF and PBHA in diabetes mellitus patients with renal diseases. The mean values with S.D. are shown in Table-9.

In diabetic renal patients, the blood sugar level ranges from 79 to 344 mg%. The PBH levels range from 24 to 285.71 mg%, the PBSA levels range from 41.11 to 117.33 mg% and the PBF levels range from 5.28 to 16.20 mg%. The PBHA levels range from 58.82 to 269.23 mg%.

The mean blood sugar level in renal patients is 180.63 mg% and in normal subjects the level is 84.03 mg%. The higher blood sugar level in renal patients is found to be highly significant ($P < 0.01$).

The mean PBH level in renal patients is 85.79 mg% and 83.35 mg% in normal subjects. The level of PBH is slightly higher in renal subjects as compared to the normal subjects, but the difference is statistically insignificant ($P > 0.05$).

The mean PBSA level in renal patients is 68.66 mg% and 67.14 mg% in normal subjects. The level of PBSA is almost same in both the subjects.

The mean PBF level in renal patients is 10.49 mg% and in normal subjects, the level is 8.03 mg%. The level of PBF is higher in renal patients than in normal subjects and this difference is found to be statistically significant ($P < 0.01$).

The mean PBHA levels in renal patients is 156.50 mg%, while in normal subjects it is 99.65 mg%. The PBHA level is much higher in renal patients as compared to the normal subjects and this difference is found to be statistically significant ($P < 0.01$).

TABLE-6
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-III PATIENTS

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
01.	20	M	344	285.71	58.46	15.60	200.00
02.	30	F	141	257.14	70.00	5.53	148.00
03.	38	M	114	77.14	51.66	8.62	125.00
04.	34	F	337	68.57	85.00	10.73	208.33
05.	20	M	150	62.50	34.00	7.31	104.17
06.	25	M	160	40.63	66.00	7.48	125.00
07.	21	F	300	104.00	72.00	9.27	208.34
08.	40	M	112	22.22	41.11	5.28	58.82
09.	38	F	288	66.66	72.94	8.96	110.00
10.	53	F	183	94.29	91.76	14.08	150.00
11.	42	M	123	100.00	70.58	10.56	175.00
12.	09	F	105	73.33	63.79	14.63	62.50
13.	30	F	100	70.27	47.27	11.38	134.62
14.	38	F	280	59.46	61.82	16.20	211.54
15.	35	M	200	108.11	86.36	15.17	269.23

TABLE-6
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-III PATIENTS
CONTD.

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
16.	48	M	109	73.68	117.33	7.93	211.54
17.	30	M	79	82.50	77.77	11.22	71.42
18.	38	M	103	65.00	57.77	15.40	232.12
19.	44	F	330	69.00	85.00	10.70	210.00
20.	35	F	240	66.66	70.00	9.96	150.00
21.	30	M	160	45.00	65.00	7.50	120.00
22.	55	F	185	95.00	80.00	14.00	150.00
23.	45	M	110	24.00	41.00	6.00	60.00
24.	40	M	120	100.00	70.00	10.00	170.00
25.	35	M	114	77.14	52.00	8.60	125.00
26.	35	F	330	69.02	85.00	10.70	210.00
27.	38	M	115	65.37	58.00	8.72	125.00
28.	40	M	125	100.00	70.60	11.00	172.00
29.	27	M	162	41.30	67.20	7.50	130.40
30.	39	M	200	110.00	90.26	14.60	267.50

Totally 30 diabetic patients having hypertension are studied, comprising of 18 male and 12 female patients, age ranging from 41 to 55 years.

Table-7 shows the levels of BS, PBH, PBSA, PBF and PBHA in diabetic patients with hypertension. The mean levels with S.D. are shown in Table-9.

In hypertensive diabetic patients, the blood sugar level ranges from 75 to 306 mg%. The PBH levels range from 41.66 to 251.14 mg%, the PBSA levels range from 21.11 to 95.00 mg%. The PBF levels range from 8.13 to 16.60 mg% and the PBHA levels range from 35.71 to 285.71 mg%.

The mean blood sugar level in hypertensive patients is 138.43 mg% and in normal subjects, the level is 84.03 mg%. The level of blood sugar is higher in these patients as compared to normal subjects. This difference is found to be statistically significant ($P < 0.01$).

The mean PBH levels in hypertensive patients is 95.07 mg% and 83.35 mg% in normal subjects. The PBH level is slightly higher in these patients as compared to the normal subjects but this difference is statistically insignificant ($P > 0.05$).

The mean PBSA level in hypertensive patients is 72.77 mg%. While in normal subjects the level is 67.14 mg%. The level of PBSA is higher than those in normal subjects but this difference is statistically insignificant ($P < 0.05$).

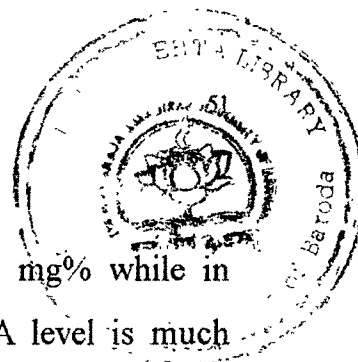
The mean PBF level in hypertensive patients is 11.00 mg% and in normal subjects the level is 8.03 mg%. The level of PBF is higher in these patients than those in normal subjects and this difference is found to be statistically significant ($P < 0.01$).

TABLE-7
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-IV PATIENTS

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
01.	47	M	170	251.14	75.38	16.60	266.00
02.	50	M	124	129.00	92.30	9.28	107.14
03.	45	F	194	54.84	86.15	9.85	285.71
04.	42	M	124	58.04	80.00	9.28	250.00
05.	45	M	109	214.29	36.66	11.54	41.66
06.	47	M	306	41.66	60.00	8.57	147.06
07.	49	F	87	58.62	73.68	11.22	208.33
08.	51	F	75	48.28	94.74	12.52	83.33
09.	48	M	77	72.22	84.44	14.79	192.30
10.	46	M	176	73.68	93.33	10.00	229.16
11.	47	M	200	100.00	21.11	8.13	89.28
12.	46	F	154	70.00	68.88	9.10	196.42
13.	50	F	135	125.00	80.00	11.05	35.71
14.	55	F	90	100.00	86.66	8.78	89.28
15.	44	F	160	80.00	74.00	9.90	180.00

TABLE-7
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-IV PATIENTS
CONTD.

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
16.	49	M	110	98.30	37.00	11.55	142.70
17.	46	M	285	49.00	59.00	8.50	145.00
18.	50	M	125	130.00	82.00	10.20	110.25
19.	45	F	200	95.10	87.10	10.00	253.00
20.	47	M	160	150.05	76.29	14.75	260.00
21.	51	F	85	68.64	74.18	12.02	195.60
22.	55	M	124	110.00	80.55	9.30	115.00
23.	48	M	75	72.00	83.00	15.02	189.53
24.	49	F	130	120.00	80.00	10.52	78.07
25.	53	F	75	48.82	95.00	13.00	98.33
26.	47	M	146	73.82	90.33	10.23	220.18
27.	54	M	92	68.37	85.44	13.76	190.30
28.	50	M	100	110.00	36.34	8.97	94.44
29.	41	M	95	100.00	36.22	11.55	88.03
30.	43	F	170	81.23	73.22	9.89	170.66



The mean PBHA level in hypertensive patients is 158.42 mg% while in normal subjects, it is found to be 99.65 mg%. The PBHA level is much higher in these patients as compared to the normal subjects and this increase is found to be statistically significant ($P < 0.01$).

Totally 30 diabetic patients with neuromuscular diseases are studied comprising of 18 male and 12 female patients, age ranging from 03 years to 70 years.

Table-8 shows the levels of BS, PBH, PBSA, PBF and PBHA in patients with neuromuscular disorders. The mean values with S.D. are shown in Table-9.

In neuromuscular disorder patients the blood sugar ranges from 63 to 438 mg%. The PBH levels range from 29.31 to 129.03 mg%, the PBSA levels range from 48.11 to 155.79 mg% and the PBF levels range from 6.17 to 16.42 mg%. The PBHA levels in these patients range from 50.00 to 235.29 mg%.

The mean level of blood sugar in these patients is 119.63 mg% and in normal subjects, the level is 84.03 mg%. The blood sugar level is much higher in these patients as compared to the normal subjects and this increase is found to be statistically significant ($P < 0.01$).

The mean PBH level in these patients is 69.96 mg%, while in normal subjects, it is 83.35 mg%. So the level of PBH is much lower in these patients but this difference is found to be statistically insignificant ($P > 0.05$).

The mean PBSA levels in neuromuscular disorder patients is 78.58 mg%, while in normal subjects, the level is 67.14 mg%. The level of PBSA is higher in these patients as compared to the normal subjects and this increase is found to be statistically significant ($P < 0.01$).

TABLE-8
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-V PATIENTS

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
01.	60	M	74	69.44	62.50	6.34	235.29
02.	40	F	67	116.13	51.43	6.17	117.65
03.	40	M	413	129.03	56.00	7.80	205.88
04.	70	M	141	103.22	74.28	7.57	200.00
05.	47	M	438	116.13	68.57	8.77	147.06
06.	08	F	75	40.74	68.24	8.37	50.00
07.	53	M	97	65.71	87.06	10.38	125.00
08.	47	F	97	68.00	91.76	13.12	200.00
09.	57	M	103	77.14	76.47	11.22	85.00
10.	67	M	88	29.31	65.26	10.40	83.33
11.	58	M	100	48.28	65.26	10.40	125.00
12.	35	F	76	43.10	65.26	8.45	83.33
13.	13	F	82	39.66	67.37	8.13	83.33
14.	60	F	100	18.99	82.11	8.15	83.33
15.	50	M	223	50.37	18.42	11.22	125.00

TABLE-8
LEVELS OF BS, PBH, PBSA, PBF AND PBHA
IN GROUP-V PATIENTS
CONTD.

Sr. No.	Age	Sex	B.S. mg%	P.B.H. mg%	PBSA mg%	PBF mg%	PBHA mg%
16.	43	F	136	97.00	75.79	13.00	125.00
17.	70	M	161	67.30	155.79	16.42	83.33
18.	27	M	63	60.34	77.89	9.91	104.71
19.	03	M	85	65.79	90.66	8.45	100.00
20.	50	M	97	81.58	72.00	12.78	150.00
21.	35	F	66	45.00	104.00	11.54	225.00
22.	51	M	80	48.00	96.00	9.75	200.00
23.	43	F	110	77.40	121.00	14.39	175.00
24.	75	M	72	65.00	55.00	9.10	178.57
25.	37	M	88	87.00	48.11	9.76	107.14
26.	47	F	110	68.45	92.00	13.10	200.00
27.	55	M	105	49.08	65.30	8.50	85.33
28.	37	F	75	65.00	66.20	8.35	83.33
29.	49	M	80	88.00	92.44	9.25	210.00
30.	44	F	97	68.75	92.34	12.12	96.08

The mean PBF level in these patients is 10.12 mg% and in normal subjects, the level is 8.03 mg%. The level of PBF is higher in these patients as compared to the normal subjects and this difference is found to be statistically significant ($P < 0.01$).

The mean PBHA level in neuromuscular disorder patients is 135.74 mg% and in normal subjects the level is found to be 99.65 mg%. The PBHA is much higher in these patients as compared to the normal subjects and this difference is found to be statistically significant ($P < 0.01$).

The mean level of total protein-bound carbohydrate, obtained by addition of the mean levels of all the individual carbohydrates, in normal subjects is found to be 258.07 mg%.

The mean levels of total protein-bound carbohydrates in diabetic patients is 363.57 mg%, in cardiac complication patients, the level is 333.13 mg%. In diabetic patients with renal complications the level of protein-bound carbohydrate is 321.44 mg% and this level in hypertensive diabetics is 337.26 mg%. In the patients with neuromuscular disorders the level is found to be 294.40 mg%.

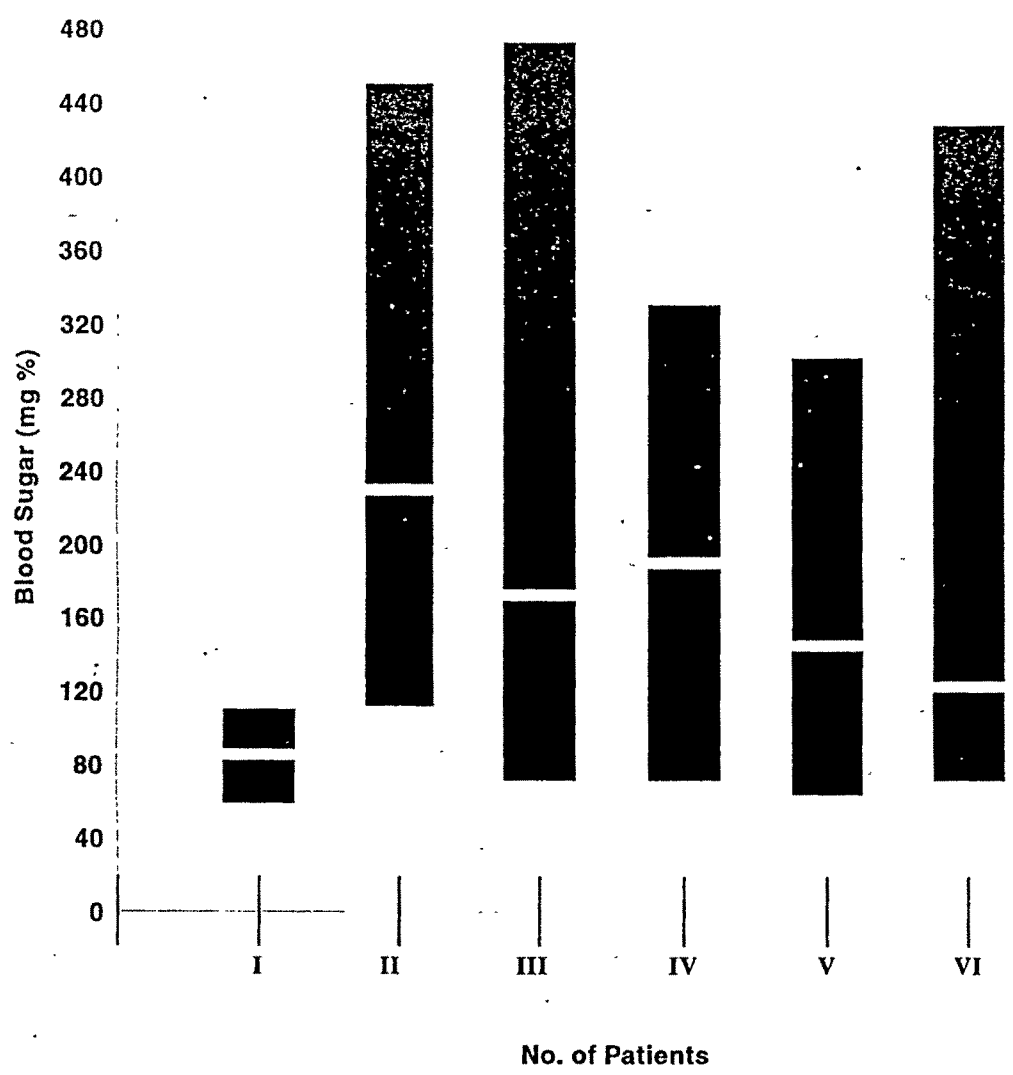
So it is observed that the level of protein-bound carbohydrate, in the diabetics and in diabetes complication patients, is higher than that observed in the normal subjects.

TABLE-9

**MEAN AND S.D. VALUES OF BS, PBH, PBSA , PBF AND
PBHA IN MG% IN NORMAL SUBJECTS AND PATIENTS.**

	Normal subjects	Group I	Group II	Group III	Group IV	Group V
B.S.						
Mean	84.03	237.97	175.50	180.63	138.43	119.63
S.D.	13.87	96.77	98.28	84.30	57.73	89.23
PBH						
Mean	83.35	123.60	85.97	85.79	95.07	69.96
S.D.	31.65	69.84	34.14	55.53	47.00	24.34
PBSA						
Mean	67.14	60.24	77.10	68.66	72.77	78.58
S.D.	9.49	14.78	28.09	17.53	20.07	22.21
PBF						
Mean	8.03	10.49	10.46	10.49	11.00	10.12
S.D.	1.46	2.19	2.66	3.19	2.20	2.40
PBHA						
Mean	99.65	169.24	159.60	156.50	158.42	135.74
S.D.	28.36	53.76	77.13	57.82	70.39	53.48

FIGURE-3

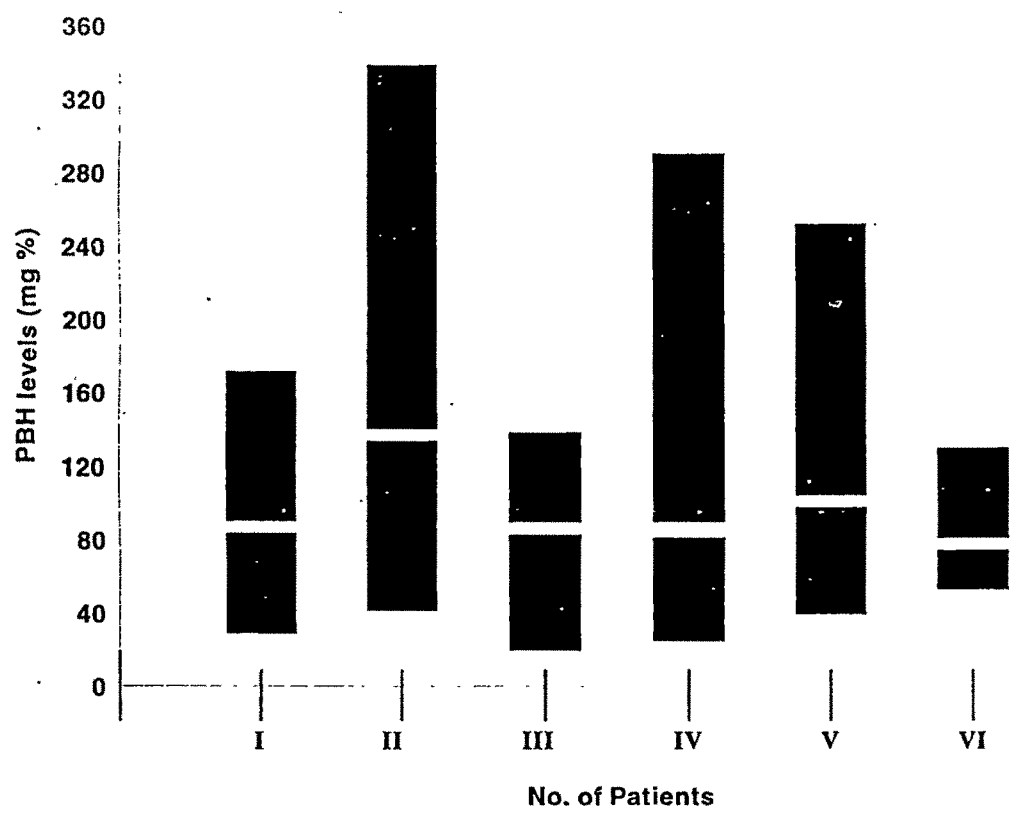


Histogram showing Blood - Sugar levels in

- I → Normal Subjects
- II → Diabetes Mellitus Patients
- III → Cardiac Compication Patients
- IV → Renal Complication Patients
- V → Hypertension Patients
- VI → Neuromuscular disorder Patients

Break line shows mean level.

FIGURE-4

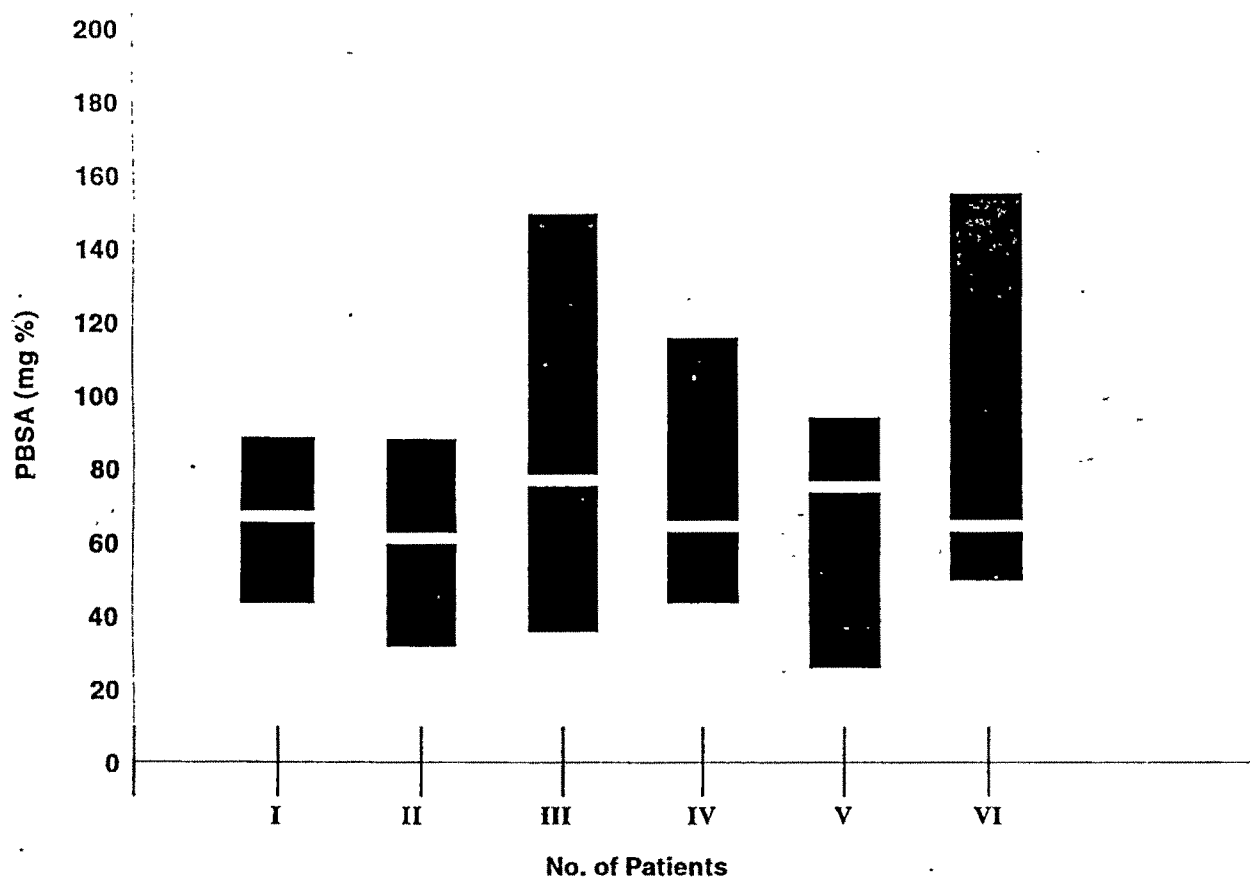


Histogram showing levels of PBH in

- I → Normal Subjects
- II → Diabetes Mellitus Patients
- III → Cardiac Compication Patients
- IV → Renal Complication Patients
- V → Hypertension Patients
- VI → Neuromuscular disorder Patients

Break line shows mean level.

FIGURE-5

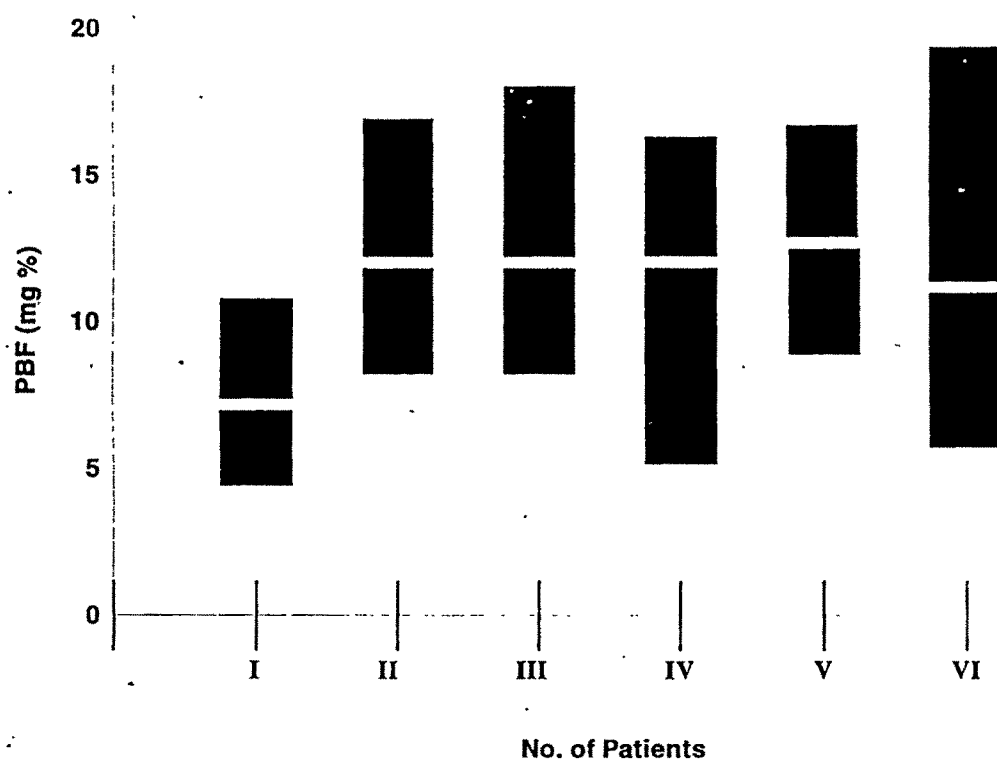


Histogram showing levels of PBSA in

- I → Normal Subjects
- II → Diabetes Mellitus Patients
- III → Cardiac Compication Patients
- IV → Renal Complication Patients
- V → Hypertension Patients
- VI → Neuromuscular disorder Patients

Break line shows mean level.

FIGURE-6

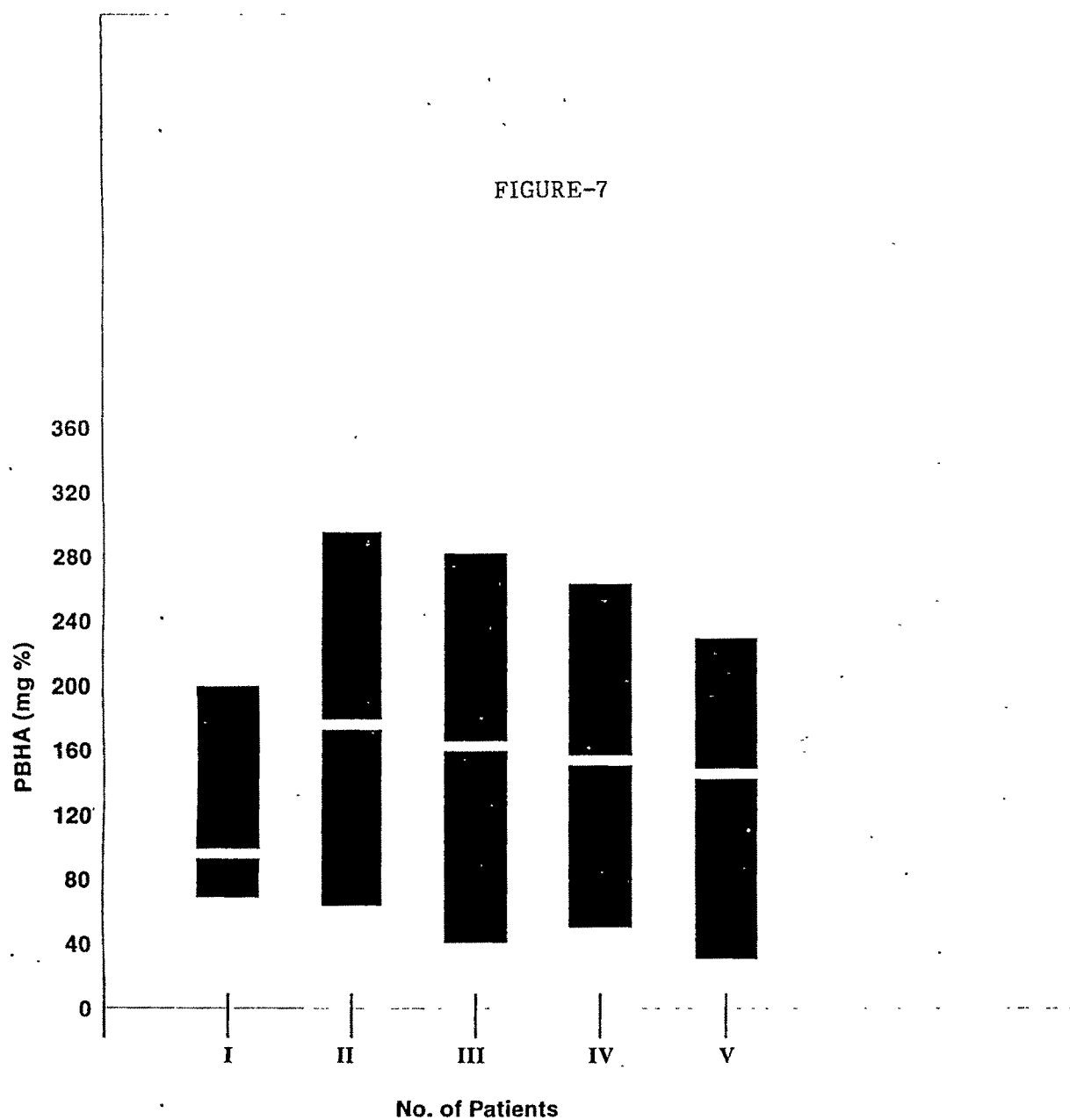


Histogram showing levels of PBF in

- I → Normal Subjects
- II → Diabetes Mellitus Patients
- III → Cardiac Compication Patients
- IV → Renal Complication Patients
- V → Hypertension Patients
- VI → Neuromuscular disorder Patients

Break line shows mean level.

FIGURE-7



Histogram showing PBHA levels in

- I → Normal Subjects
- II → Diabetes Mellitus Patients
- III → Cardiac Complication Patients
- IV → Renal Complication Patients
- V → Hypertension Patients
- VI → Neuromuscular disorder Patients

Break line shows mean level.