R E S U L T S

The results of the control group

Are summarized in tables (4 to 8 and 22 to 27) and figures (16 to 22), they are as follows

- Their ages ranged from 3 - 16 years with the mean value of 10.07 ± 3.58 years, 10 were males and 10 were females, no family history of diabetes and no treatment that might cause alteration of blood glucose level as corticosteroids or salicylates.

- Their urine examination were completely free from glucose or acetone.

Height (tables 4)

Measured as centile, ranged from 25 to 85 centile with a mean of 57.85 ± 16.77.

Weight (tables 4)

Measured as centile, ranged from 40 to 80 centile with the mean value of 58.75 ± 11.68.

Weight by stature (table 4)

Measured as centile, ranged from 25 to 97 centile with the mean value of 59.25 ± 20.45.

Growth hormone releasing hormone (table 5)

Ranged from 5 to 46 pg/ml with the mean value of 21.2 ± 10.99 pg/ml.

Growth hormone (table 5)

Ranged from 3.2 to 8.1 ng/ml with the mean of 5.81 ± 1.68 ng/ml.

Glycosylated haemoglobin (table 5)

Ranged from 4.1 to 5.45%, with the mean of 4.52 ± 0.36%.

Blood Picture (table 6)

Haemoglobin

Ranged from 11.6 to 15.1 gm/dl, with the mean of 13.35 ± 0.86 gm/dl.

WBC

Ranged from 4 500 to 9 700 /mm^3, with a mean of 6 665 ± 1 626 /mm^3.

Platelets

Ranged from 210 000 to 488 000, with a mean value of 325 400 ± 89 924.

SR

Ranged from 3 to 20 with mean value 7.7 ± 4.6.

Blood urea (table 6)

Ranged from 21 to 30 mg/dl with a mean value of 24.6 ± 2.4 mg/dl.

Serum creatinine (table 6)

Ranged from 0.7 to 0.9 mg/dl, with a mean value of 0.78 ± 0.8 mg/dl.

The results of the diabetic patients

Are summarized in tables (4 - 19) and figures (16 - 44).

They are as follows:

Their ages ranged from 2 to 15 years, with a mean value of 8.79 ± 4.15 years. 24 were females and 12 were males.

From table 12 - 19 it is evident that:

- Family history was positive in 3 cases for a similar disease.
- They all received insulin injection twice daily with a mean of 0.97 units/Kg/day.
- The duration of illness varied from 3 months to 7 years.
- Sugar was detected in all the urine samples of the diabetic children and varied from + to ++.

Height (table 4) (figure 16)

Measured as centile, ranged from 5 to 95 centile with a mean of 48.8 ± 26.5 centile.

There was non significant difference between diabetic and control group (P > 0.05). (Although the mean for diabetic group is lower than for control group).

Weight (table 4) (figure 17)

Measured as centile, ranged from 5 to 95 centile with a mean of 50.6 ± 26.5.

There was non significant difference between diabetic and control group (P > 0.05). (Although the mean for diabetic group is lower than that for control group).

Weight by stature (table 4) (figure 18)

Measured as centile, ranged from 12 to 97 centile with a mean of 57.6 ± 22.3 centile and there was no statistically significant difference between diabetic and control group.

Growth hormone releasing hormone (table 5) (figure 19)

Ranged from 10 to 42 pg/ml with a mean of 24.16 ± 9.49 pg/ml and there was no statistically significant difference between diabetic and control group (P > 0.05). Although, the mean for diabetic group is higher than that for control group.

Growth hormone (table 5) (figure 20)

Ranged from 2.3 to 16.9 ng/ml with a mean of 7.95 ± 3.95 ng/ml and there was a statistically significant

difference between diabetic and control group (P < 0.05). So, serum growth hormone was higher in diabetic patient group than the control group.

Glycosylated haemoglobin (table 5) (figure 21)

Ranged from 9.8 to 15.4 % with a mean of 12.24 ± 1.84 %. So, glycosylated haemoglobin was much higher in diabetic patient than the control group which is highly significant (P < 0.001).

Blood Picture (table 6)

Haemoglobin

Ranged from 8.6 to 14.8 gm/dl with a mean of 12.79 ± 1.10 gm/dl. So, haemoglobin was lower in diabetic patient group than the control group, which is statistically significant ($P < 0.05$).

WBC

Ranged from 3 500 to 12 900 /mm³ with a mean of 6 818 ± 2 005/ mm³ with non significant difference between both groups (patient group and control group) ($P > 0.05$).

Platelets

Ranged from 350 000 to 354 000 /mm³ with a mean of 234 694 ± 60 661 /mm³. So, platelets was higher in diabetic patient group thant the control group, which is statistically significant.

ESR

Ranged from 3 to 65 with a mean of 9.5 ± 10.5. There was non statistically significant difference between diabetic and control group.

Blood Urea (table 7)

Ranged from 21 to 33 mg/dl. with a mean of 26.1 $\pm$ 3.4 mg/dl. So, there was non statistically significant difference between diabetic and control group.

Serum Creatinine (table 7)(figure 22)

Ranged from 0.7 to 1.3 mg/dl with a mean of 0.88 $\pm$ 0.13 mg/dl. So, serum creatinine was higher in diabetic group than the control group, which is significant ($P < 0.01$). Yet, serum creatinine for both groups lies within the normal range.

Comparison between patients with average control (glycosylated haemoglobin is less than 12%) °19 patients§ and patients with bad control (glycosylated hamoglobin is more than 12%) °17 patients§

* There is statistically non significant difference between both groups regarding the age, duration of illness, height, weight by stature, GHRH, GH, blood picture, SR, blood urea and serum creatinine ($P > 0.05$).

* Regarding glycosylated haemoglobin, there is a highly significant difference between both groups ($P < 0.001$). **°table 8§ (figure 23).**

* Regarding insulin treatment, the average controlled group required less insulin than the bad controlled group which is statistically significant ($P < 0.05$) **°table 8§ (figure 24).**

Comparison between female patient and male patient (table 9)

* Regarding the duration of illness there is statistically significant difference ($P < 0.05$), female patient have a longer duration of illness than male patient (figure 25).

* Regarding insulin treatment, female patients require higher dose of insulin in comparison with male patient which is statistically significant ($P < 0.05$) (figure 26).

* Glycosylated haemoglobin is higher in female patient group than in male patient group which is statistically highly significant ($P < 0.001$).

* Platelet count is higher in female patient group than in male patient group which is highly significant ($P < 0.01$) °But both lie within normal range§.

* Regarding age, height, weight, weight by stature, GH, GHRH, haemoglobin, WBCs, SR, blood urea or serum creatinine there is no statistically significant difference between both groups.

Comparison between female patient group and female control group: (table 10)

* There is a statistically significant difference ($P < 0.05$), the female patient group is shorter than the female control group.

* Statistically highly significant difference regarding glycosylated haemoglobin ($P < 0.001$).

* There is non significant difference between both groups regarding age, weight, weight by stature, GHRH, GH, blood picture, SR or blood urea.

Comparison between male patient and male control group (table 11)

* Regarding GHRH is higher in male patient group than in male control group which is statistically significant ($P < 0.05$).

* Regarding GH, is higher in male patient group than in male control group which is statistically significant ($P < 0.05$).

* Glycosylated haemoglobin is much higher in male patient group than in male control group which is highly significant ($P < 0.001$).

* Regarding age, height, weight, weight by stature, blood picture, SR or blood urea there is non significant difference between both groups.

The following statistical correlations were detected on diabetic patient group (table 27)

* A significant negative correlations was found between age and:
  - insulin treatment (units/Kg).
  - Height (centile) **(figure 27)**
  - Weight (centile) **(figure 28)**
  - Weight by stature **(figure 29)**
* A significant positive correlations was found between:
  - Age and GHRH **(figure 30)**
  - Duration of illness and GHRH **(figure 31)**
  - Height (centile) and weight (centile)
  - Height and weight by stature.
  - Weight and weight by stature.
  - GHRH and GH **(figure 32)**
  - Glycosylated haemoglobin and insulin treatment **(figure 33)**
  - Insulin treatment and - SR
    - Blood urea
    - Serum creatinine **(figure 34)**

The following statistical correlations were detected in female diabetic patient group (table 28)

* *A significant negative correlations were found between:*
  - age and either height,
    weight,
    WBCs
  - Duration of illness and either:
    - insulin treatment
    - glycosylated haemoglobin
    - platelets.

* *A significant positive correlations were found between:*

  - Duration of illness and either GHRH and GH **(figure 35, 36)**
  - Height and either weight and weight by stature.
  - Weight and GHRH
  - Insulin treatment and either SR and serum creatinine.

The following statistical correlations were detected in male diabetic patient group (table 29)

** A significant positive correlations were found between:*

- Age and either : GHRH **(figure 37)**
  GH **(figure 38)**
  Blood urea
- Duration of illness and either height or weight.
- Insulin treatment and either - Glycosylated haemoglobin
  - Serum creatinine
- Height and either - Weight
  - GHRH **(figure 39)**
  - GH **(figure 40)**
- Weight and GH.
- GHRH and GH.
- Blood urea and either - GHRH
  - GH

** A significant negative correlations were found between:*

- Age and haemoglobin
- Insulin treatment and either - WBCs
  - Platelets

The following statistical correlations were found in average controlled patient group (glycosylated Hb ≤ 12%) °table 30§

** A significant positive correlations were found between:*

- Age and either - duration of illness
  - GHRH
- Duration of illness and either - GHRH
  - Glycosylated Hb.
- Insulin treatment and platelet count.
- Height and weight.
- Weight and weight by stature.
- GHRH and GH.

The following statistical correlations were found in bad controlled patient group (glycosylated Hb > 12%) (table 31)

** A significant negative correlations were found between:*

- Age and either - Height (figure 41)
  - Weight (figure 42)
- Duration of illness and glycosylated Hb (figure 43)
- Insulin treatment and weight by stature (figure 44)

** A significant positive correlations were found between:*

- Insulin treatment and either - SR
  - Serum creatinine
- Height and either - weight
  - weight by stature.
- Weight and weight by stature.

Table 4 Values of Height, Weight and Weight by stature in Diabetic patient in comparison to the control group

		Patient Group	Control Group	P	T
Height	Range Mean SD	5 – 95 48.80 26.53	25 – 85 57.85 16.77	P > 0.05	1.37
Weight	Range Mean SD	5 – 95 50.63 27.73	40 – 80 58.75 11.68	P > 0.05	1.24
Weight by Stature	Range Mean SD	12 – 97 57.69 22.31	25 – 97 59.25 20.45	P > 0.05	0.25

* Statistical analysis is done using Wilcoxins test for the height and weight and "t" test for weight by stature

* P > 0.05 is non significant

Table 5 Values of GHRH, GH, Glycosylated haemoglobin in Diabetic patient in comparison to the control Group

		Patient Group	Control Group	P	T
GHRH pg/ml	Range Mean SD	10 – 42 24.16 9.49	5 – 46 21.2 10.99	P > 0.05	1.05
GH ng/ml	Range Mean SD	2.3 – 16.9 7.95 3.95	3.2 – 8.1 5.81 1.68	P < 0.05	2.29
Glycosylated Hb %	Range Mean SD	9.8 – 15.4 12.24 1.84	4.1 – 5.45 4.52 0.36	P < 0.001	18.40

* Statistical analysis using " t" test
  P > 0.05 is non significant
  P < 0.05 is significant
  P < 0.001 is highly significant

Table 6 Values of Haemoglobin, WBC, Platelets and SR in Diabetic patient in comparison to the control group

		Patient Group	Control Group	P	T
Hb gm/dl	Range Mean SD	8.6 – 14.8 12.79 1.1	11.6 – 15.1 13.35 0.86	P < 0.05	1.95
WBC per cubic mm	Range Mean SD	3,500 – 12,900 6,818 2,500	4,500 – 9,700 6,665 1,626	P > 0.05	0.29
Platelets Thousand per cubic mm	Range Mean SD	350 – 354 234 60	210 – 488 325 89	P < 0.001	4.49
S.R.	Range Mean SD	3 – 65 9.5 10.5	3 – 20 7.7 4.6	P > 0.05	0.74

* Statistical analysis using "t" test:
  P > 0.05 is non significant
  P < 0.05 is significant
  P < 0.001 is highly significant

Table 7 Values of urea and creatinine (in blood) of Diabetic patient in comparison to the control

		Patient Group	Control Group	P	T
Blood Urea mg/dl	Range Mean SD	21 – 33 26.11 3.41	21 – 30 24.65 2.47	P > 0.05	1.68
Serum Creatinine mg/dl	Range Mean SD	0.7 – 1.3 0.88 0.13	0.7 – 0.9 0.78 0.08	P < 0.001	2.92

* Statistical analysis using " t" test
  P > 0.05 is non significant
  P < 0.001 is highly significant

Table 8 Comparison between average controlled patient group (glycosylated Hb < 12%) and bad controlled patient group (glycosylated Hb > 12%)

		Patient Group "Average control"	Patient Group "Bad Control"	P	T
Insulin Treatment (units/Kg)	Range Mean SD	0.4 – 1.4 0.82 0.26	0.5 – 2.5 1.13 0.5	P < 0.05	2.33
Glycosylated Hb	Range Mean SD	9.8 – 11.9 10.7 0.7	12.1 – 15.4 13.9 1.1	P < 0.001	10.15

* Statistical analysis using "t" test
P < 0.05 is significant
P < 0.001 is highly significant

Table 9 Comparison between female patient and male patient regarding the duration of illness, insulin treatment, glycosylated haemoglobin and Platelet count

		Female Patient	Male Patient	P	T
Duration of illness (Years)	Range Mean SD	0.5 – 7 2.83 1.71	0.25 – 2.5 1.37 0.65	$P < 0.05$	2.82
Insulin Treatment (Units/Kg)	Range Mean SD	0.5 – 2.5 1.08 0.45	0.4 – 1.4 0.75 0.24	$P < 0.05$	2.32
Glycosylated Hb %	Range Mean SD	10.2 – 15.4 12.91 1.57	9.8 – 14.8 10.89 1.64	$P < 0.001$	3.58
Platelet Count (Thousand/ cubic mm)	Range Mean SD	160 – 354 255 54	35 – 230 193 52	$P < 0.001$	3.26

* Statistical analysis using "t" test
  $P < 0.05$ is significant
  $P < 0.001$ is highly significant

Table 10 Comparison between female patient and female control Regarding Height and glycosylated Hb.

		Female Patient	Female Control	P	T
Height (Centile)	Range Mean SD	5 – 95 46.33 26.94	25 – 85 63.00 18.88	P < 0.05	1.77
Glycosylated Hb	Range Mean SD	10.2 – 15.4 12.91 1.57	4.1 – 5.45 4.59 0.46	P < 0.001	16.28

* Statistical analysis using Wilcoxins for Height
"t" test for glycosylated Hb
P < 0.05 is significant
P < 0.001 is highly significant

Table 11 Comparison between male patient group and male control group Regarding the GHRH, GH and Glycosylated Hb.

		Male Patient	Male Control	P	T
GHRH pg/ml	Range Mean SD	10 – 32 22.75 8.93	5 – 21 15.10 5.38	$P < 0.05$	2.36
GH ng/ml	Range Mean SD	3.2 – 15.2 9.65 4.05	3.2 – 8.1 6.03 1.83	$P < 0.05$	2.60
Glycosylated Hb %	Range Mean SD	9.8 – 14.8 10.89 1.64	4.2 – 4.8 4.46 0.21	$P < 0.001$	12.26

* Statistical analysis using "t" test
  $P < 0.05$ is significant
  $P < 0.001$ is highly significant

Table 12: Male Patients

No.	Age (years)	Duration of illness (years)	History of coma	Treatment insulin (unit/Kg)	Family history	Height (centile)	Weight (centile)	Weigh by stature (centile)
1	12	2.5	twice	0.6	–ve	80	70	40
2	8	1	–	0.4	–ve	30	30	50
3	9	1	–	0.9	–ve	20	15	20
4	8	2	–	0.7	–ve	90	95	85
5	7	3/4	once	0.75	–ve	60	60	60
6	15	1/4	once	1.4	+ve	50	45	50
7	3	1	once	0.9	–ve	25	50	75
8	2	1	once	0.7	–ve	45	50	50
9	11.5	2	3	0.7	–ve	80	70	40
10	8	1.5	–	0.6	–ve	25	40	65
11	11	2	twice	0.7	–ve	90	75	50
12	2.5	1.5	once	0.75	–ve	50	50	52

Table 13: Male Patients

No.	GHRH pg/ml	G.H. ng/ml	HbA_{1c} %	
1	32	14.8	9.9	
2	11	3.2	9.8	
3	28	5.8	10.2	
4	30	9.4	11.1	
5	25	10.5	10.3	
6	30	13.8	14.8	ITP Malaria
7	22	11.4	13.8	VSD Infective Hepatitis
8	10	6.4	10.2	
9	30	15.2	10.2	
10	13	5.2	10.4	
11	31	12.8	10.1	
12	11	7.3	9.9	

Table 14: Male Patients

No.	Urine Albumin	Urine		Complete Blood Picture			SR	Renal function tests		Fundus	X-ray Chest
		sugar	acetone	Hb	WBC	Platelet		Blood urea	Serum creatinine		
1	–	+	–	12.5	6 800	210 000	5	32	0.9	Free	Free
2	–	++	–	11.8	7 700	195 000	7	22	0.9	Free	Free
3	+	+	–	13.3	6 800	210 000	22	24	0.7	Free	Free
4	–	+	–	13.5	6 900	220 000	12	24	0.8	Free	Free
5	+	++	–	12.9	7 700	210 000	8	25	0.8	Free	Free
6	+	++ +	++	10.9	3 500	35 000	5	33	1.3	Free	Free
7	–	++	+	12.5	4 600	185 000	4	26	1.1	Free	Free
8	–	+	–	13.6	5 100	215 000	3	24	0.9	Free	Free
9	–	+	–	13.0	7 200	230 000	6	30	0.8	Free	Free
10	–	++	–	12.1	7 500	210 000	15	21	0.7	Free	Free
11	+	++ +	+	11.8	4 200	170 000	7	27	1.0	Free	Free

Table 15: Female patients (I)

No.	Age (years)	Duration of illness (years)	History of coma	Treatment insulin (unit/Kg)	Family history	Height (centile)	Weight (centile)	Weigh by stature (centile)
1	13	7	twice	0.5	–ve	20	30	50
2	4	1	–	1	–ve	60	50	50
3	13	6	twice	0.5	–ve	20	35	50
4	5	1.5	–	1	–ve	40	40	60
5	4	3	–	1.1	–ve	60	90	50
6	13.5	3	–	0.7	–ve	5	5	50
7	7	2	–	0.8	–ve	45	60	90
8	10	4	–	0.8	–ve	60	85	90
9	9.5	1.5	8	2.2	–ve	50	45	50
10	15	0.5	once	1	–ve	8	5	52
11	3	1.5	–	1.2	–ve	70	50	45
12	14	4	–	1.1	–ve	40	15	35

Table 16: Female Patients (I)

No.	GHRH pg/ml	G.H. ng/ml	HbA_{1c} %
1	29	15.5	12.4
2	23	8.3	14.8
3	40	16.9	11.8
4	21	8.4	15.0
5	40	4.1	14.0
6	41	4.3	15.2
7	10	2.9	11.4
8	23	3.5	11.8
9	21	3.1	13.9
10	20	2.3	15.4
11	15	8.3	12.4
12	30	8.2	10.2

Table 17: Female Patients (I)

No.	Urine Albumin	Urine		Complete Blood Picture			SR	Renal function tests		Fundus	X-ray Chest	
		sugar	acetone	Hb	WBC	Platelet		Blood urea	Serum creatinine			
1	–	++	–	13.2	7 100	220 000	7	25	0.9	Free	Free	
2	–	+	–	12.7	12 900	354 000	15	30	0.8	Free	Free	
3	–	++	–	13.4	6 900	240 000	6	23	0.8	Free	Free	
4	–	+	–	13.0	10 800	330 000	12	28	0.8	Free	Free	
5	+	++	–	13.4	8 100	272 000	8	31	0.8	Free	Free	
6	–	+	–	11.8	7 700	195 000	7	22	0.9	Free	Free	
7	–	++	–	13.4	5 600	240 000	6	25	0.9	Free	Free	
8	+	+	–	14.0	4 800	160 000	7	24	0.9	Free	Free	
9	+	++ ++	++	13.2	6 100	224 000	65	27	1.1	Free	Hilar L.N. +ve	Tuberculous, under ttt
10	–	+	–	14.2	5 400	320 000	8	23	0.9	Free	Free	
11	–	+	–	8.6	5 100	265 000	15	25	0.9	Free	Free	Microcytic hypochromic anaemia. Intestinal Parasite
12	–	+	–	13.8	4 900	330 000	4	22	0.8	Free	Free	

Table 18: Female Patients (II)

No.	Age (years)	Duration of illness (years)	History of coma	Treatment insulin (unit/Kg)	Family history	Height (centile)	Weight (centile)	Weigh by stature (centile)
13	10	2	–	0.9	–ve	15	8	25
14	13	3	twice	1.0	+ve	50	60	40
15	3.5	4	–	1.1	–ve	95	95	97
16	3	1	–	1	–ve	92	90	75
17	15	5	twice	1	+ve	35	46	50
18	14	3/4	–	1	–ve	12	15	50
19	9.5	4.5	–	0.8	–ve	95	95	90
20	9	4	–	1.4	–ve	70	95	97
21	3	1.5	–	1.3	–ve	80	60	55
22	6.5	2	–	1.1	–ve	50	60	92
23	12	3.5	–	0.8	–ve	20	30	50
24	10	1 3/4	–	2.5	–ve	30	15	12

Table 19: Female patients (II)

No.	GHRH pg/ml	G.H. ng/ml	HbA_{1c} %
13	12	5	10.7
14	32	12	11.2
15	38	7.2	13.5
16	22	4.8	15.2
17	26	8	11.9
18	18	6.5	14.2
19	23	9	12.1
20	24	8	11.3
21	12	7.4	11.8
22	11	3	12.6
23	42	6.5	14.4
24	24	7.4	12.8

Table 20: Female patients

No.	Urine Albumin	Urine		Complete Blood Picture			SR	Renal function tests		Fundus	X-ray Chest
		sugar	acetone	Hb	WBC	Platelet		Blood urea	Serum creatinine		
13	–	+	–	12.6	6 300	224 000	7	32	1.0	Free	Free
14	+	++	–	12.1	9 500	260 000	4	25	0.7	Free	Free
15	–	++	–	13.0	8 200	275 000	3	30	0.9	Free	Free
16	–	+	–	12.9	10 900	320 000	5	28	0.8	Free	Free
17	+	+	–	13.4	4 800	170 000	6	24	0.8	Free	Free
18	–	++	–	14.8	5 600	280 000	5	25	0.7	Free	Free
19	+	+	–	14.1	4 850	180 000	5	23	0.9	Free	Free
20	–	+	–	11.8	7 800	240 000	4	27	1.1	Free	Free
21	–	++	–	13.8	5 600	320 000	7	23	0.9	Free	Free
22	–	++	–	12.7	7 700	230 000	10	22	0.8	Free	Free
23	–	+	–	12.0	7 500	270 000	3	30	0.8	Free	Free

Table 21: Male control

No.	Age (years)	Duration of illness (years)	History of coma	Treatment insulin (unit/Kg)	Family history	Height (centile)	Weight (centile)	Weigh by stature (centile)
1	7					46	50	60
2	14					85	75	80
3	16					40	40	56
4	11					45	50	48
5	9					50	60	50
6	6.5					45	50	55
7	14					60	70	90
8	15					50	50	80
9	11					52	45	25
10	9					60	60	55

Table 22: Male Control

No.	GHRH pg/ml	G.H. ng/ml	HbA_{1c} %
1	17	8.1	4.3
2	16	6.4	4.2
3	21	7.3	4.7
4	17	5.4	4.2
5	5	3.2	4.7
6	16	7.8	4.5
7	18	5.8	4.3
8	20	8.0	4.4
9	15	5.1	4.5
10	6	3.2	4.8

Table 23: Male control

No.	Urine Albumin	Urine		Complete Blood Picture			SR	Renal function tests		Fundus	X-ray Chest
		sugar	acetone	Hb	WBC	Platelet		Blood urea	Serum creatinine		
1	–	–	–	11.6	9 700	488 000	12	22	0.8	Free	Free
2	–	–	–	13.1	7 700	210 000	3	24	0.7	Free	Free
3	–	–	–	14.2	6 800	220 000	4	24	0.7	Free	Free
4	–	–	–	12.9	5 500	330 000	7	27	0.8	Free	Free
5	–	–	–	13.8	4 800	340 000	9	25	0.9	Free	Free
6	–	–	–	12.0	8 800	480 000	5	21	0.7	Free	Free
7	–	–	–	13.5	4 600	410 000	6	28	0.7	Free	Free
8	–	–	–	13.7	8 800	280 000	5	22	0.8	Free	Free
9	–	–	–	11.8	9 600	270 000	14	30	0.9	Free	Free
10	–	–	–	14.1	7 600	390 000	4	26	0.7	Free	Free

Table 24: Female Control

No.	Age (years)	Duration of illness (years)	History of coma	Treatment insulin (unit/Kg)	Family history	Height (centile)	Weight (centile)	Weigh by stature (centile)
1	3.5					75	60	50
2	11					25	75	97
3	14					50	40	40
4	9					80	70	55
5	9					85	65	50
6	3					85	60	50
7	10					60	80	95
8	13					50	50	25
9	8.5					60	65	60
10	8					60	60	70

Table 25: Female control

No.	GHRH pg/ml	G.H. ng/ml	HbA_{1c} %
1	46	6.3	4.7
2	17	5.4	4.2
3	25	8.0	4.24
4	45	4.2	4.53
5	17	3.7	4.7
6	38	6.2	4.1
7	15	4.8	5.3
8	24	7.8	5.45
9	30	3.5	4.2
10	16	6.1	4.5

Table 26: Female Control

No.	Urine Albumin	Urine		Complete Blood Picture			SR	Renal function tests		Fundus	X–ray Chest
		sugar	acetone	Hb	WBC	Platelet		Blood urea	Serum creatinine		
1	–	–	–	13.5	5 600	320 000	4	22	0.7	Free	Free
2	–	–	–	12.8	6 100	220 000	3	24	0.8	Free	Free
3	–	–	–	13.1	5 800	410 000	7	25	0.8	Free	Free
4	–	–	–	13.8	7 100	240 000	5	27	0.9	Free	Free
5	–	–	–	14.2	4 500	330 000	15	21	0.8	Free	Free
6	–	–	–	13.4	5 800	340 000	6	25	0.9	Free	Free
7	–	–	–	15.1	6 600	380 000	7	24	0.7	Free	Free
8	–	–	–	13.5	7 300	210 000	13	25	0.9	Free	Free
9	–	–	–	14.1	5 700	220 000	20	23	0.8	Free	Free
10	–	–	–	12.9	4 900	420 000	5	28	0.7	Free	Free

Table 27 Correlations between clinical data and laboratory data in diabetic patients

	Age	Illness	Insulin ttt	Height	Weight	Wt by stat	GHRH	GH	Gly. Hb
Age									
Illness									
Insl. ttt	−*								
Height	−*								
Weight	−*			+*					
Wt by Stat	−*			+*	+*				
GHRH	+*	+*							
GH							+*		
Gly. Hb			+*						
Hb. blood									
WBC									
Platelet									
SR			+*						
Urea			+*						
Creatinine			+*						

Table 28 Correlations between clinical data and laboratory data in female diabetic patient

	Age	Illness	Insulin ttt	Height	Weight	Wt by stat	GHRH	GH	Gly. Hb
Age									
Illness									
Insl. ttt		−*							
Height	−*								
Weight	−*			+*					
Wt by Stat				+*					
GHRH		+*			+*				
GH		+*							
Gly. Hb		−*							
Hb. blood									
WBC	−*								
Platelet		−*							
SR			+*						
Urea									
Creatinine			+*						

Table 29 Correlations between clinical data and laboratory data in male diabetic patient

	Age	Illness	Insulin ttt	Height	Weight	Wt by stat	GHRH	GH	Gly. Hb
Age									
Illness									
Insl. ttt									
Height		+*							
Weight		+*		+*					
Wt by Stat									
GHRH	+*			+*					
GH	+*			+*	+*		+*		
Gly. Hb			+*						
Hb. blood	−*								
WBC			−*						
Platelet			−*						
SR									
Urea	+*						+*	+*	
Creatinine			−*						

Table 30 Correlations between clinical data and laboratory data in average controlled patient (glycosylated Hb < 12%)

	Age	Illness	Insulin ttt	Height	Weight	Wt by stat	GHRH	GH	Gly. Hb
Age									
Illness	+*								
Insl. ttt									
Height									
Weight				+*					
Wt by Stat					+*				
GHRH	+*	+*							
GH							+*		
Gly. Hb		+*							
Hb. blood									
WBC									
Platelet			+*						
SR									
Urea									
Creatinine									

Table 31 Correlations between clinical data and laboratory data in bad controlled patient (glycosylated Hb > 12%)

	Age	Illness	Insulin ttt	Height	Weight	Wt by stat	GHRH	GH	Gly. Hb
Age									
Illness									
Insl. ttt									
Height	−*								
Weight	−*			+*					
Wt by Stat			−*	+*	+*				
GHRH									
GH									
Gly. Hb		−*							
Hb. blood									
WBC									
Platelet									
SR			+*						
Urea									
Creatinine			+*						

FIGURE 16
Average Height among Diabetic Patients versus Controls

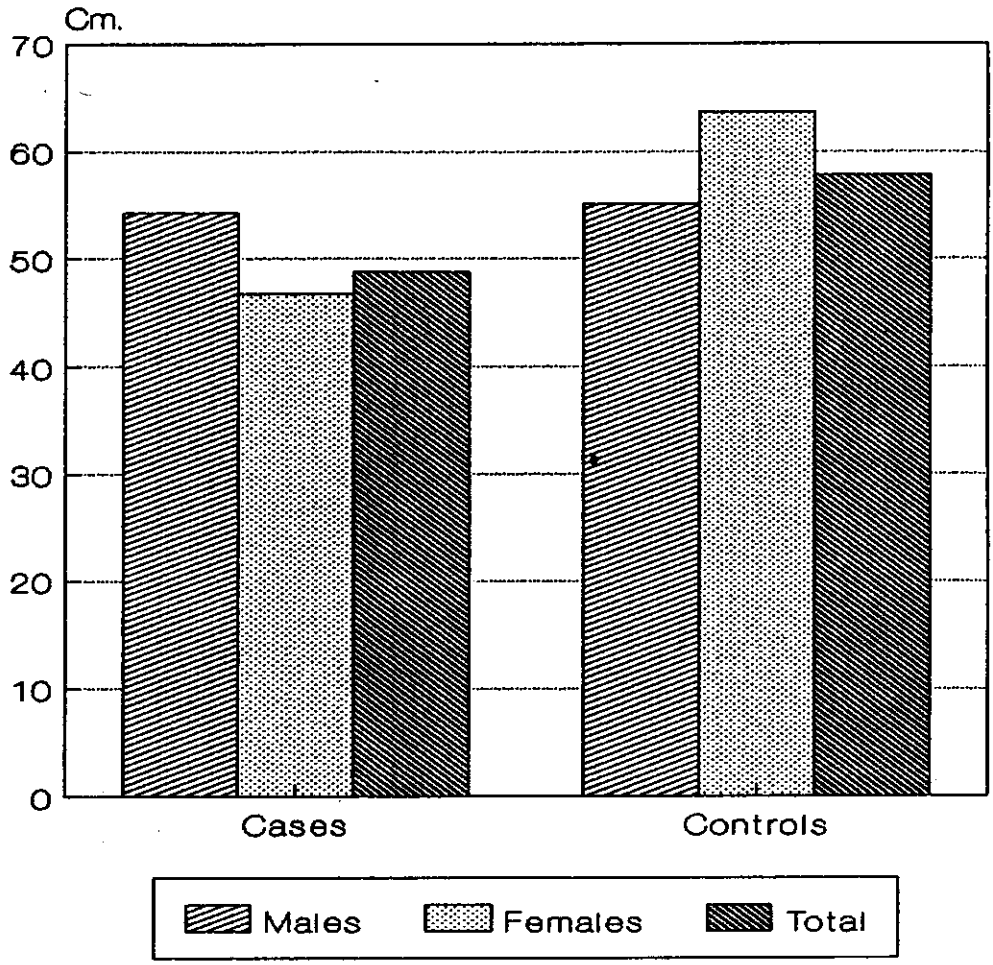


FIGURE 17

FIGURE 17

Average Weight among Diabetic Patients versus Controls

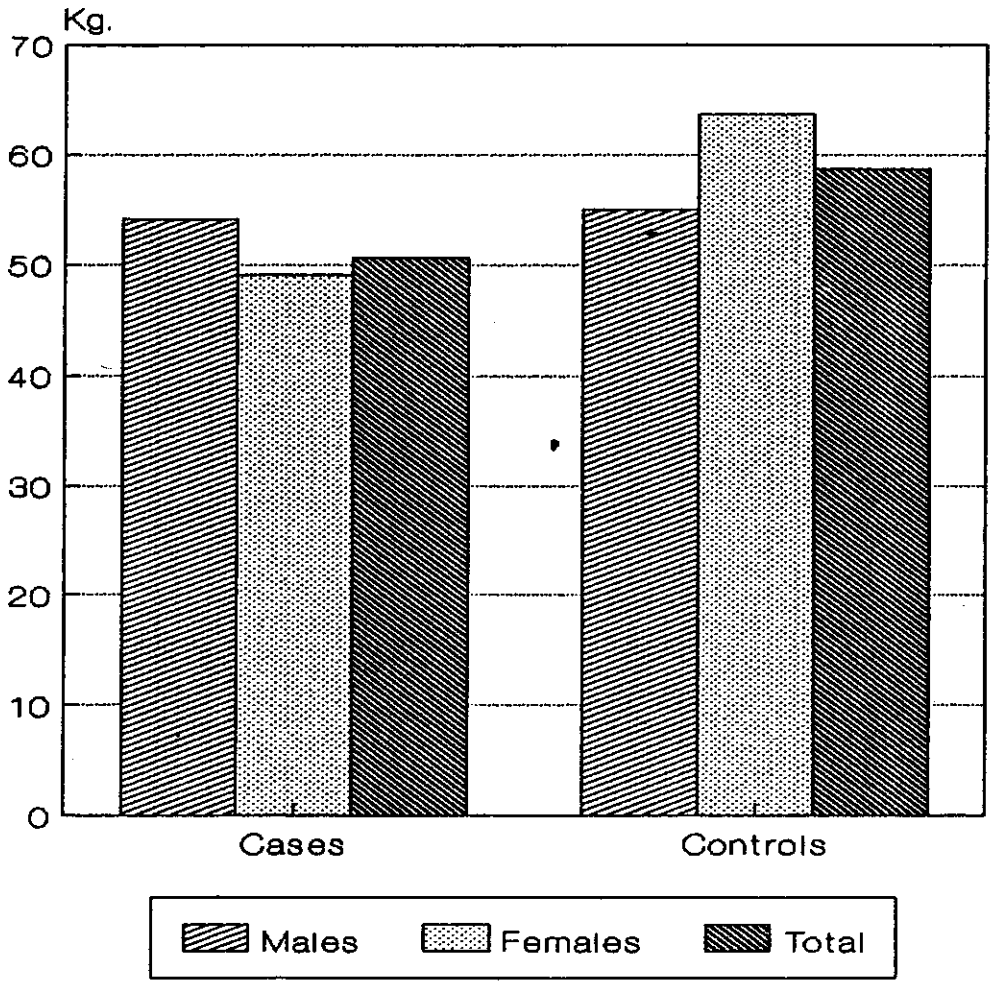


FIGURE 18

Average Weight by Stature among Diabetic Patients versus Controls

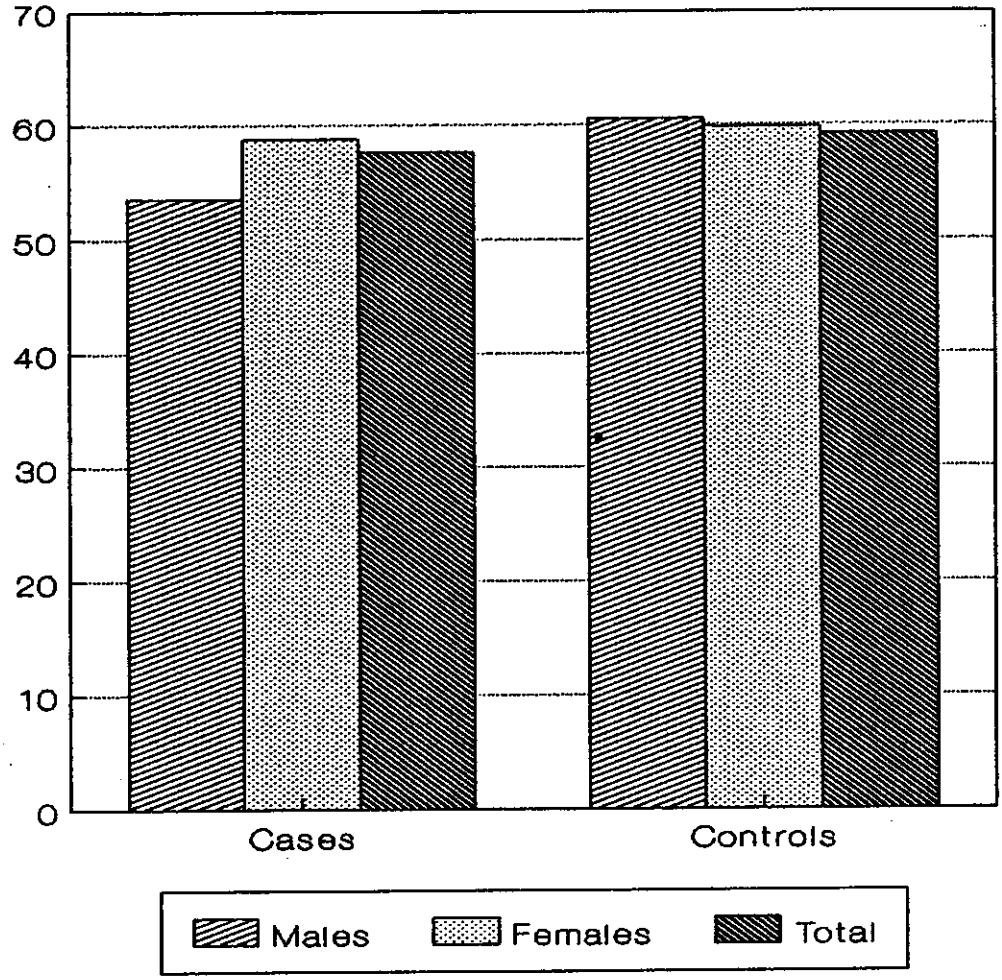


FIGURE 19

Average Level of Growth Hormone among Diabetic Patients vs Controls

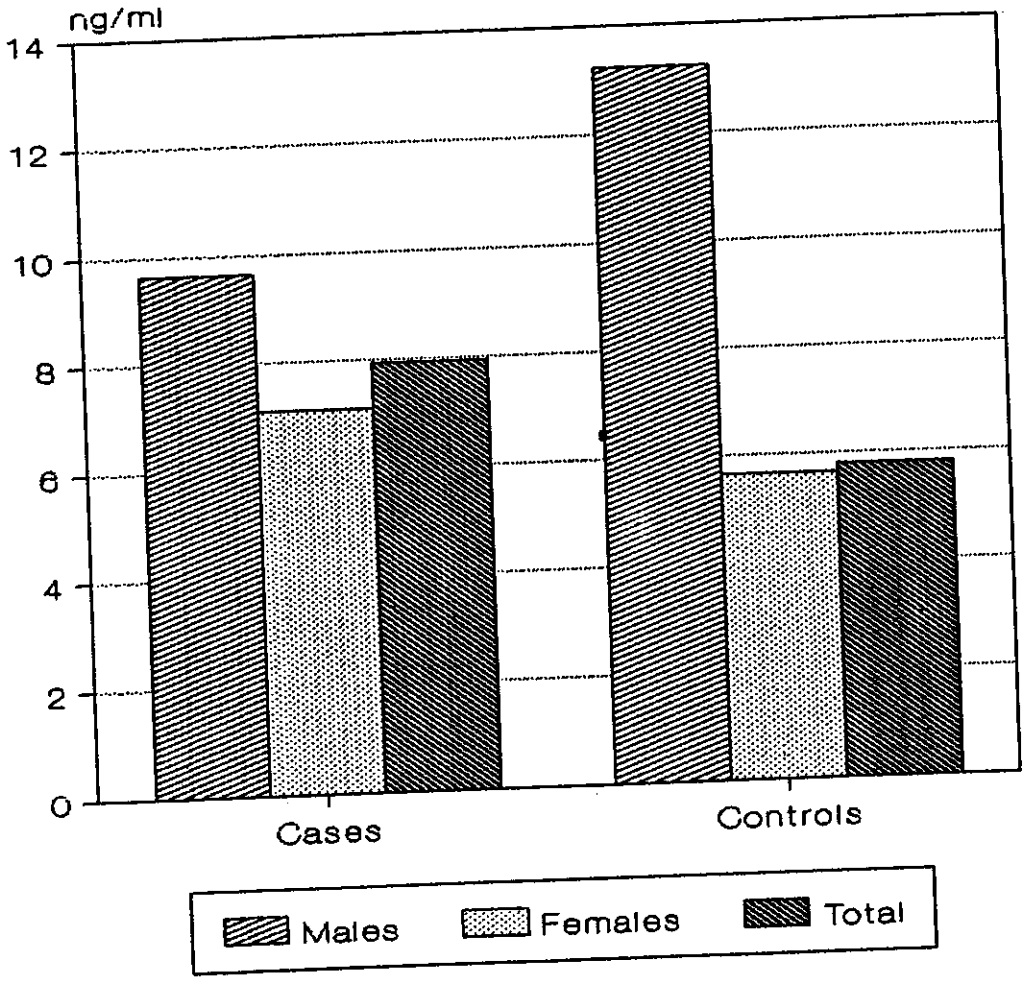


FIGURE 20

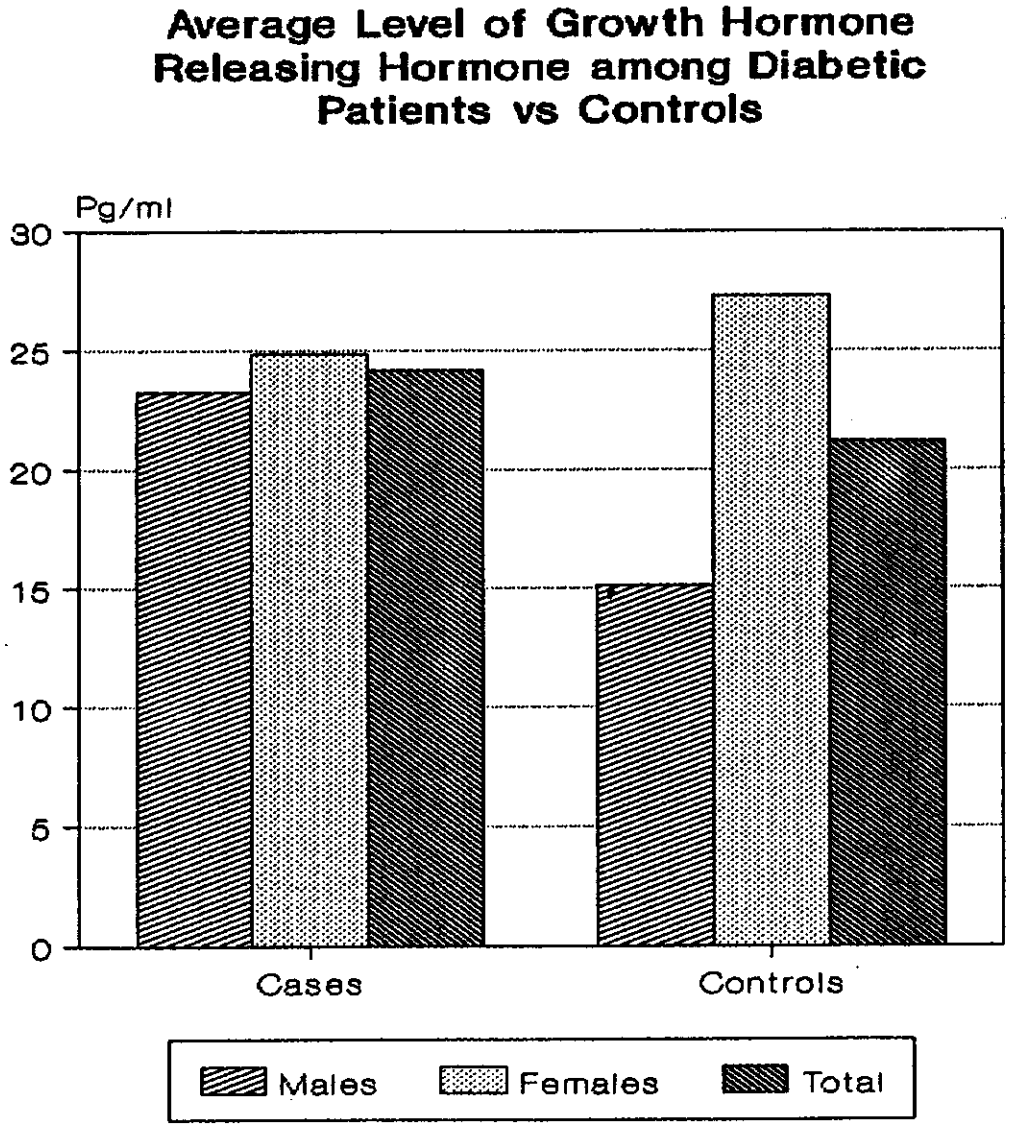

Average Level of Growth Hormone Releasing Hormone among Diabetic Patients vs Controls
Pg/ml
30
25
20
15
10
5
0
Cases
Controls
Males
Females
Total

FIGURE 21

Average Level of Glycosylated Haemoglobin among Diabetic Patients vs Controls

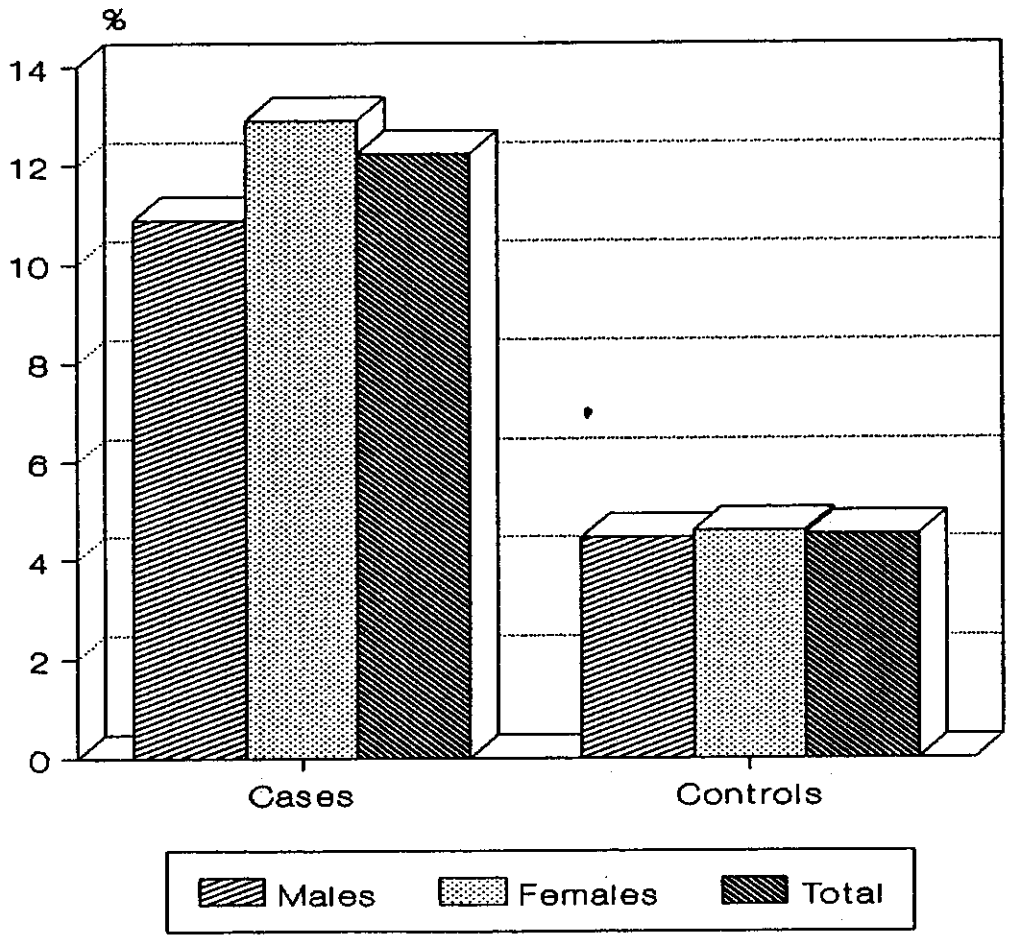


FIGURE 22

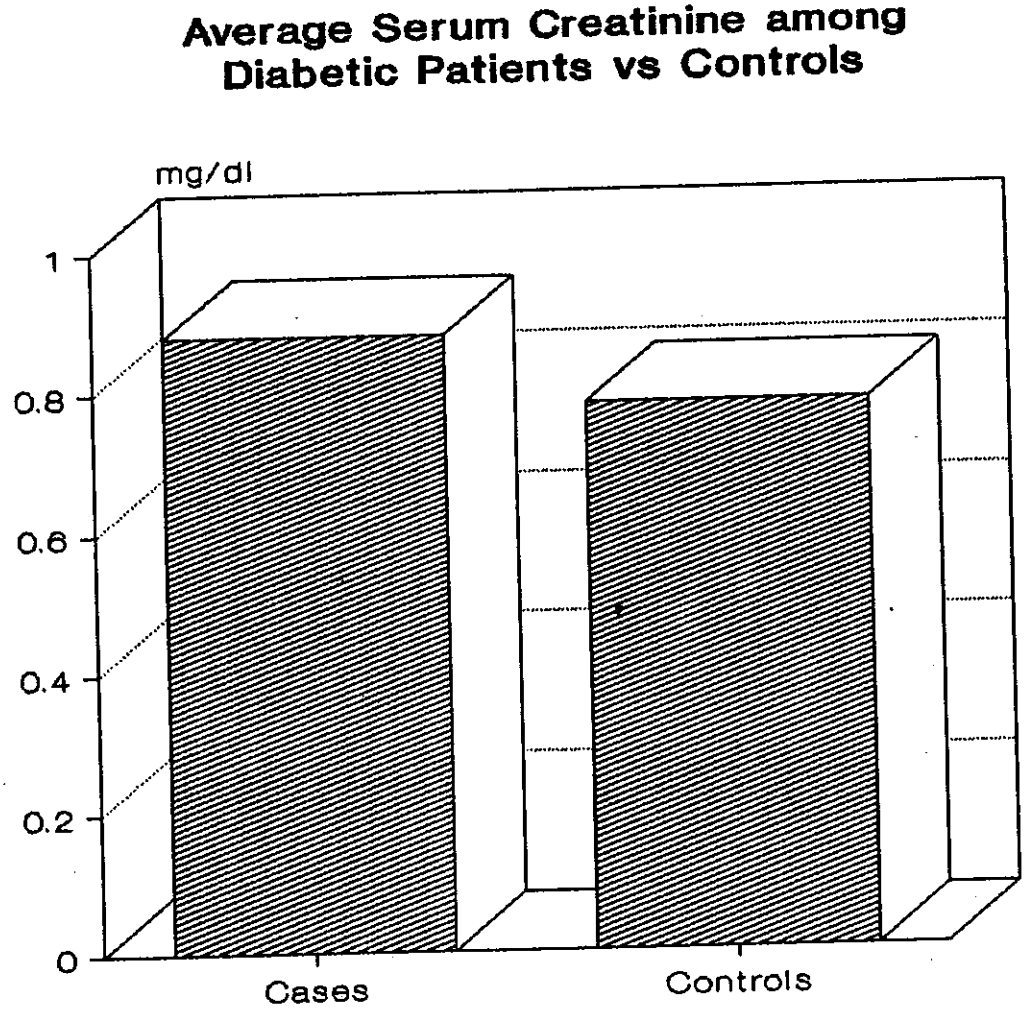

Average Serum Creatinine among Diabetic Patients vs Controls
mg/dl
1
0.8
0.6
0.4
0.2
0
Cases
Controls

FIGURE 23

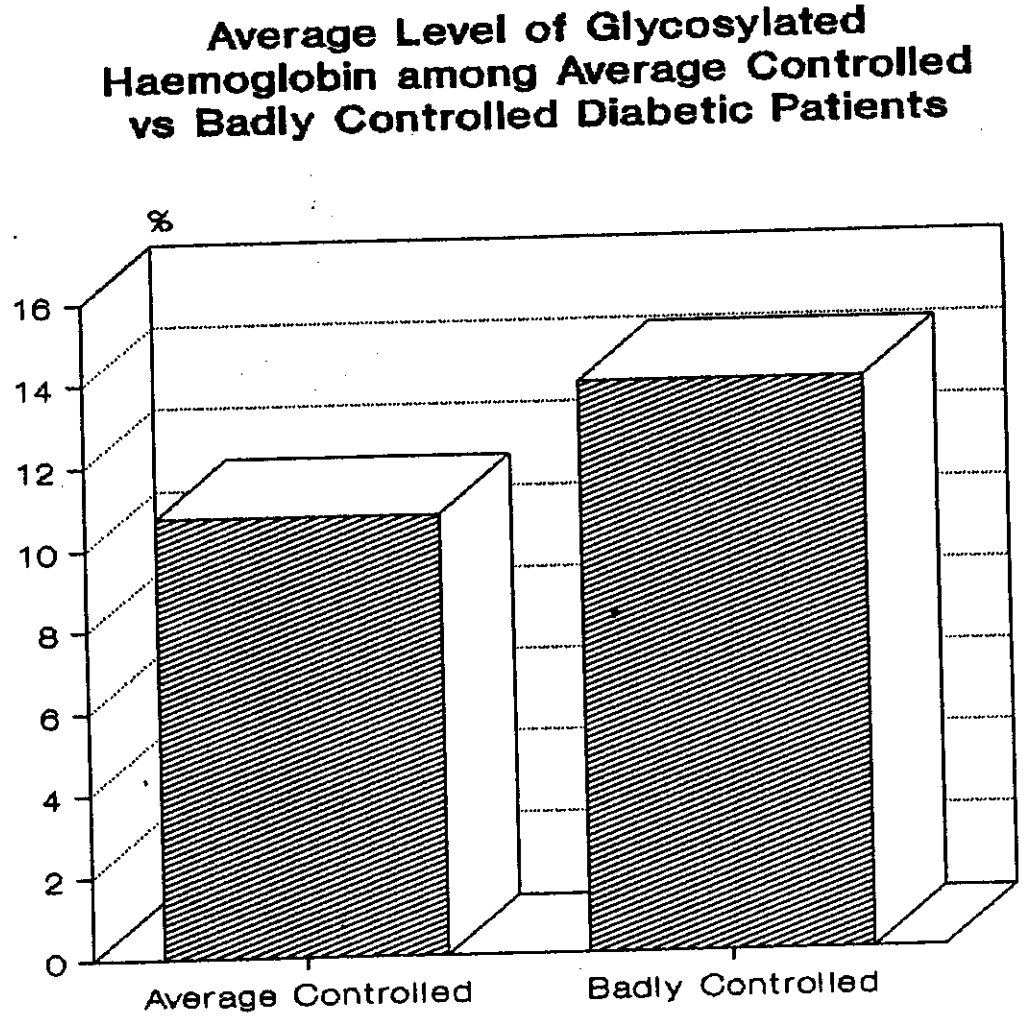
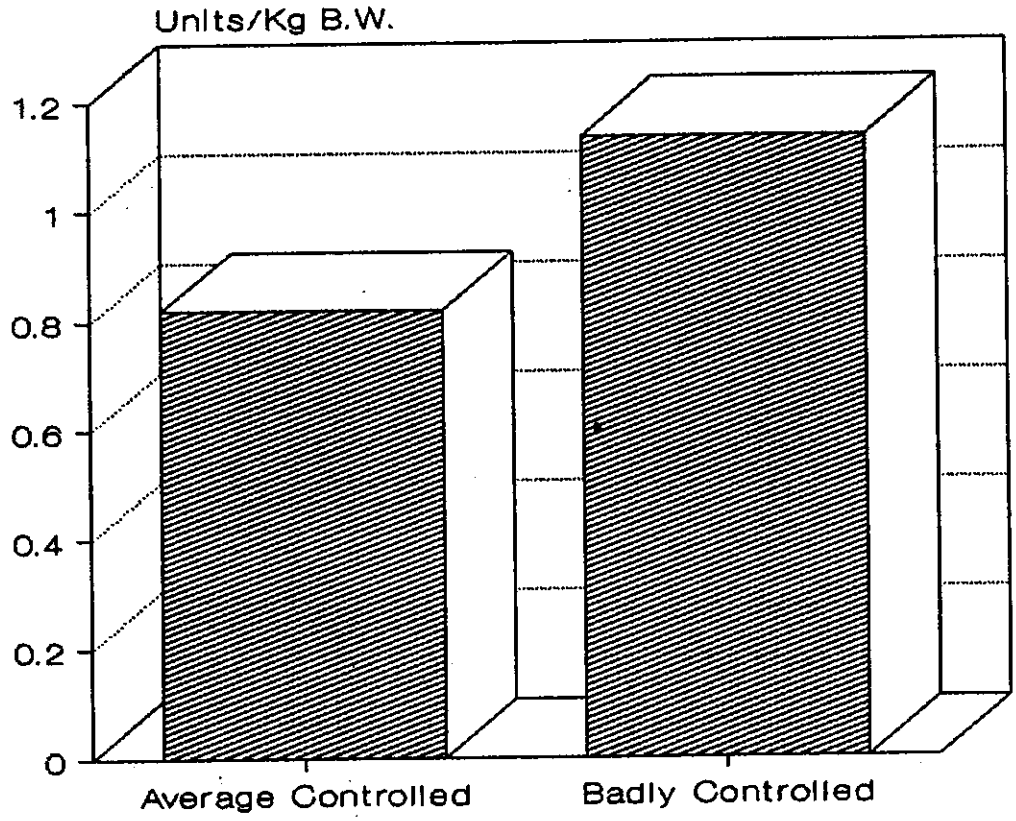

Average Level of Glycosylated Haemoglobin among Average Controlled vs Badly Controlled Diabetic Patients
%
16
14
12
10
8
6
4
2
0
Average Controlled
Badly Controlled

FIGURE 24

Average Insulin Requirement among Average Controlled vs Badly Controlled Diabetic Patients



B.W. (Body Weight)

FIGURE 25

Average Duration of Illness among Males vs Females Diabetic Patients

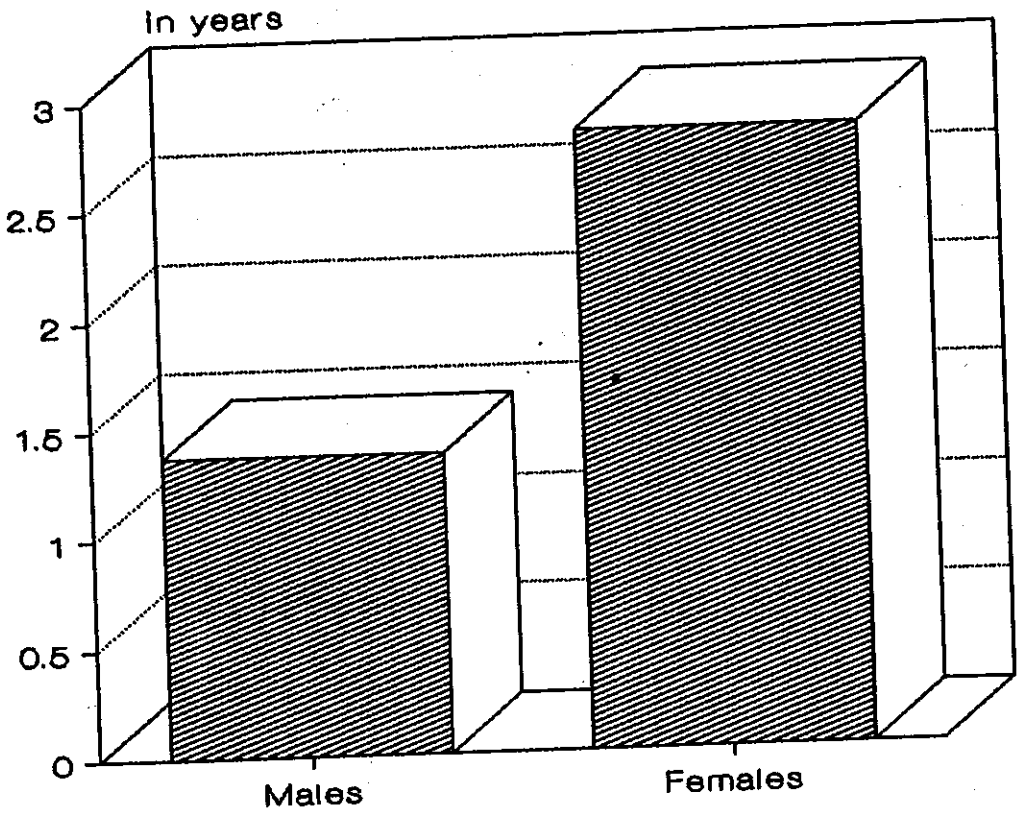
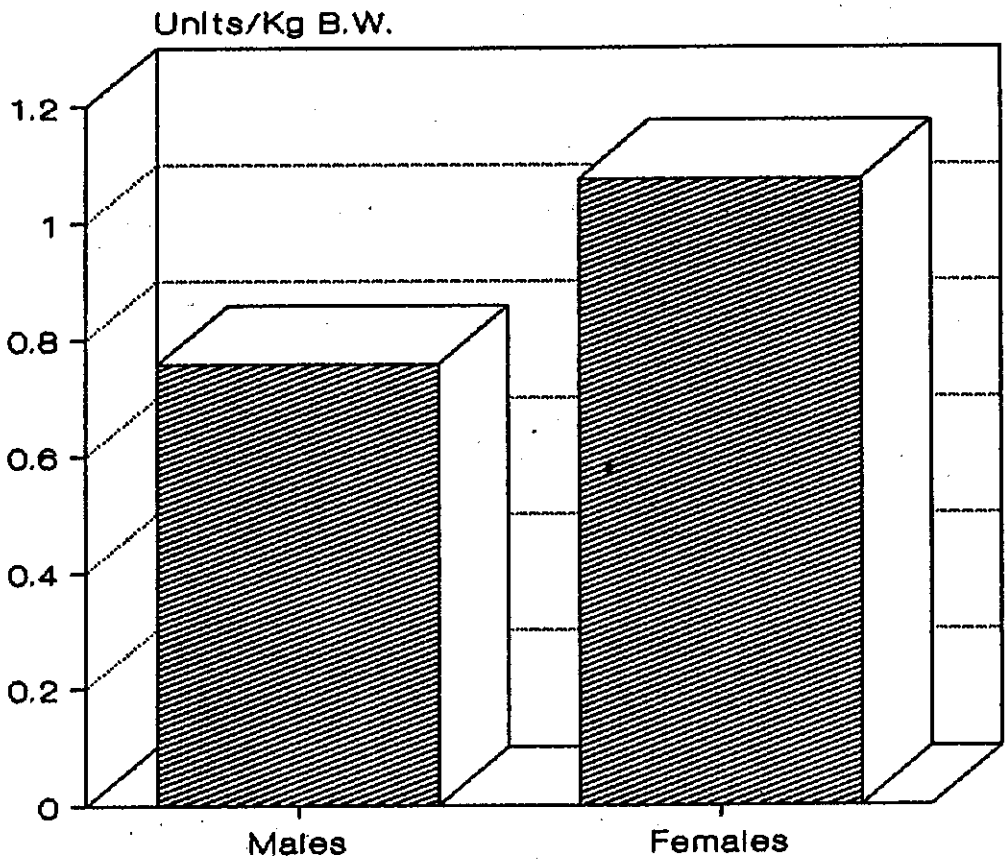


FIGURE 26

Average Insulin Requirement among Males vs Females Diabetic Patients



B.W. (Body Weight)

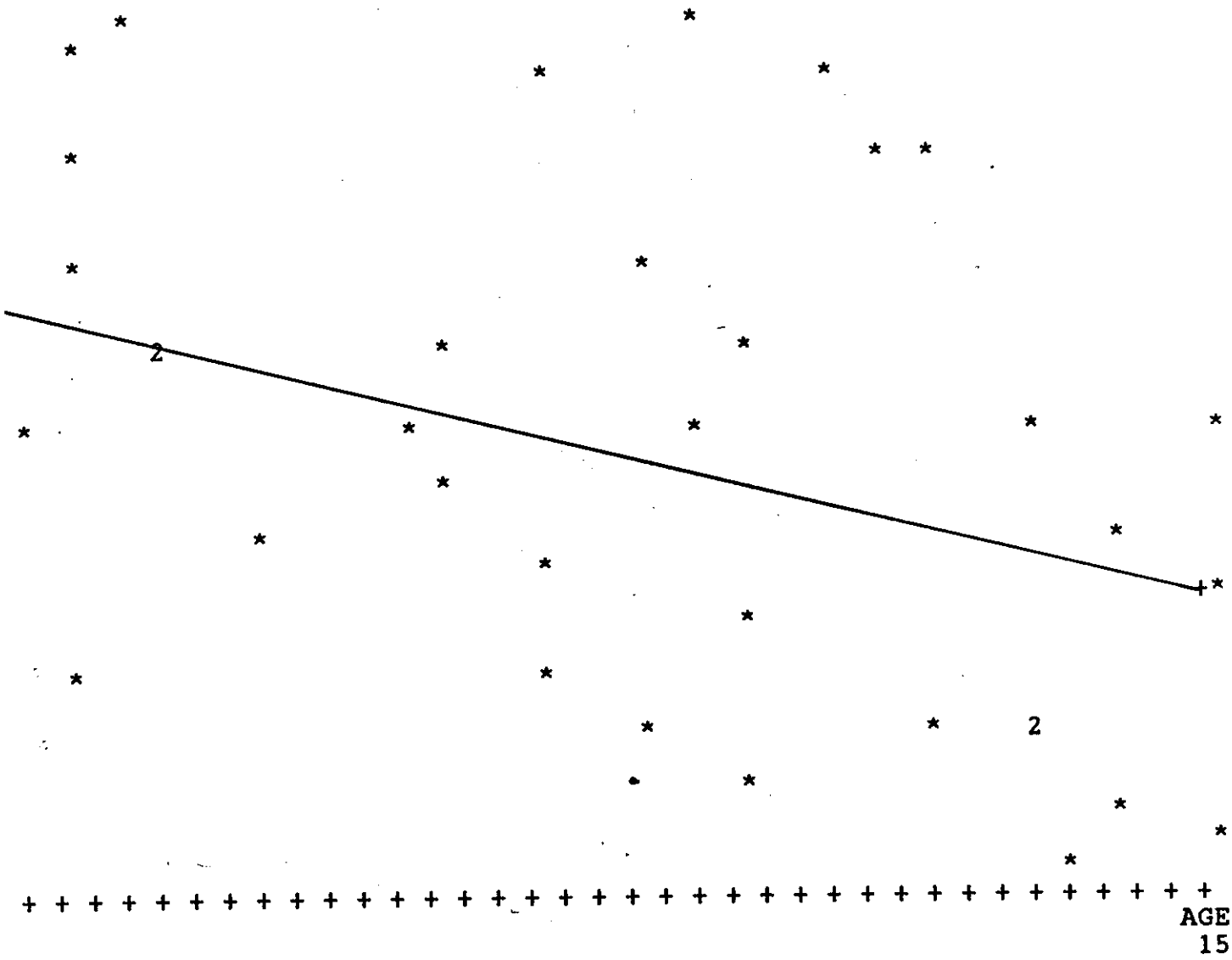


FIGURE 27

Correlation between Age and Height among Cases

DATA FOR: A:AYMAN LABEL: DIABETES
OF CASES: 56 NUMBER OF VARIABLES: 16

SSION EQUATION (Shown by +'s on scatterplot):

ERCEPT= 72.248339013394 SLOPE= -2.6159248166893

-.4048 r squared = .1639

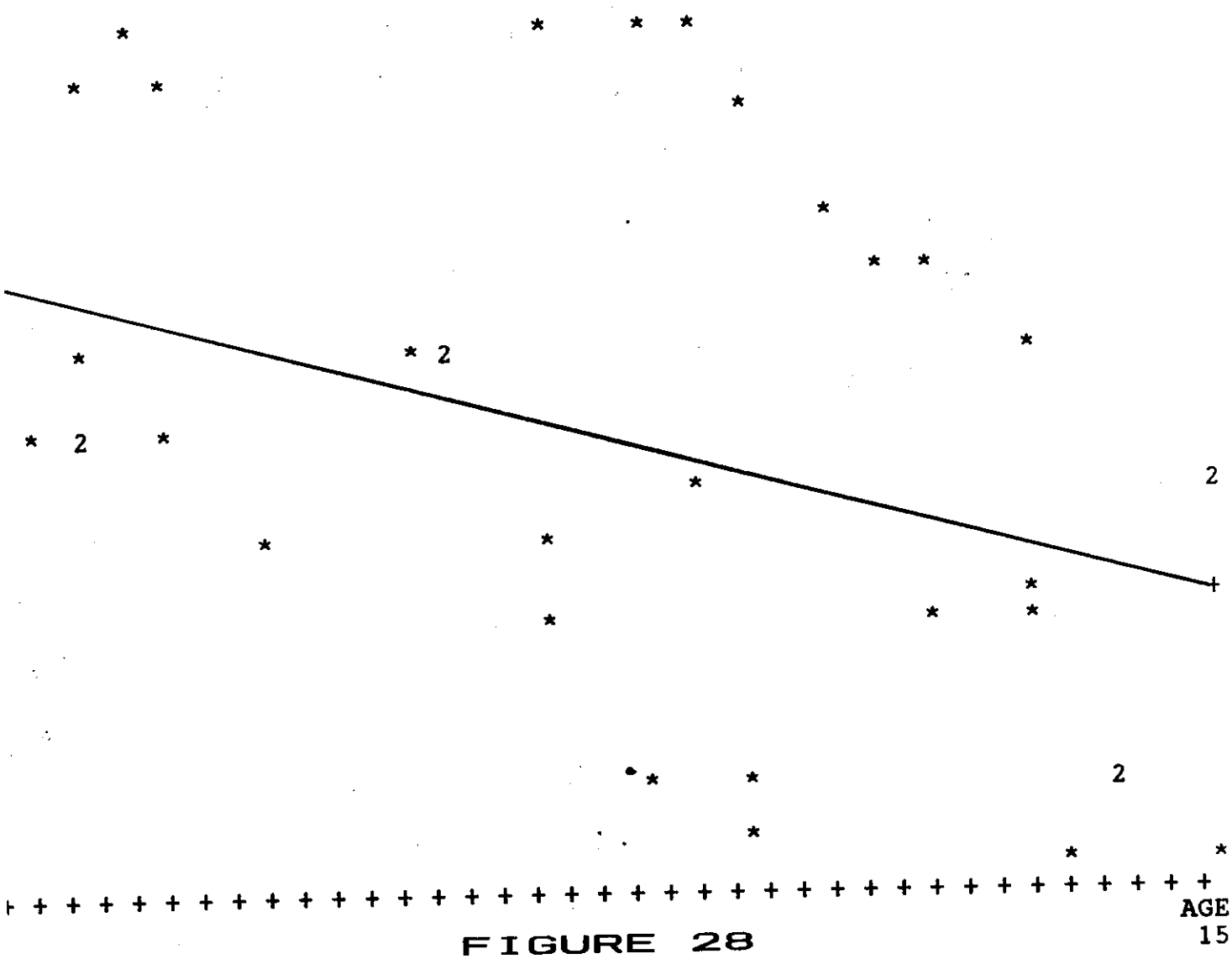


FIGURE 28

Correlation between Age and Weight among Cases

R DATA FOR: A:AYMAN LABEL: DIABETES
R OF CASES: 56 NUMBER OF VARIABLES: 16

ESSION EQUATION (Shown by +'s on scatterplot):

TERCEPT= 75.210609659544 SLOPE= -2.7759303246242

= -.4169 r squared = .1738

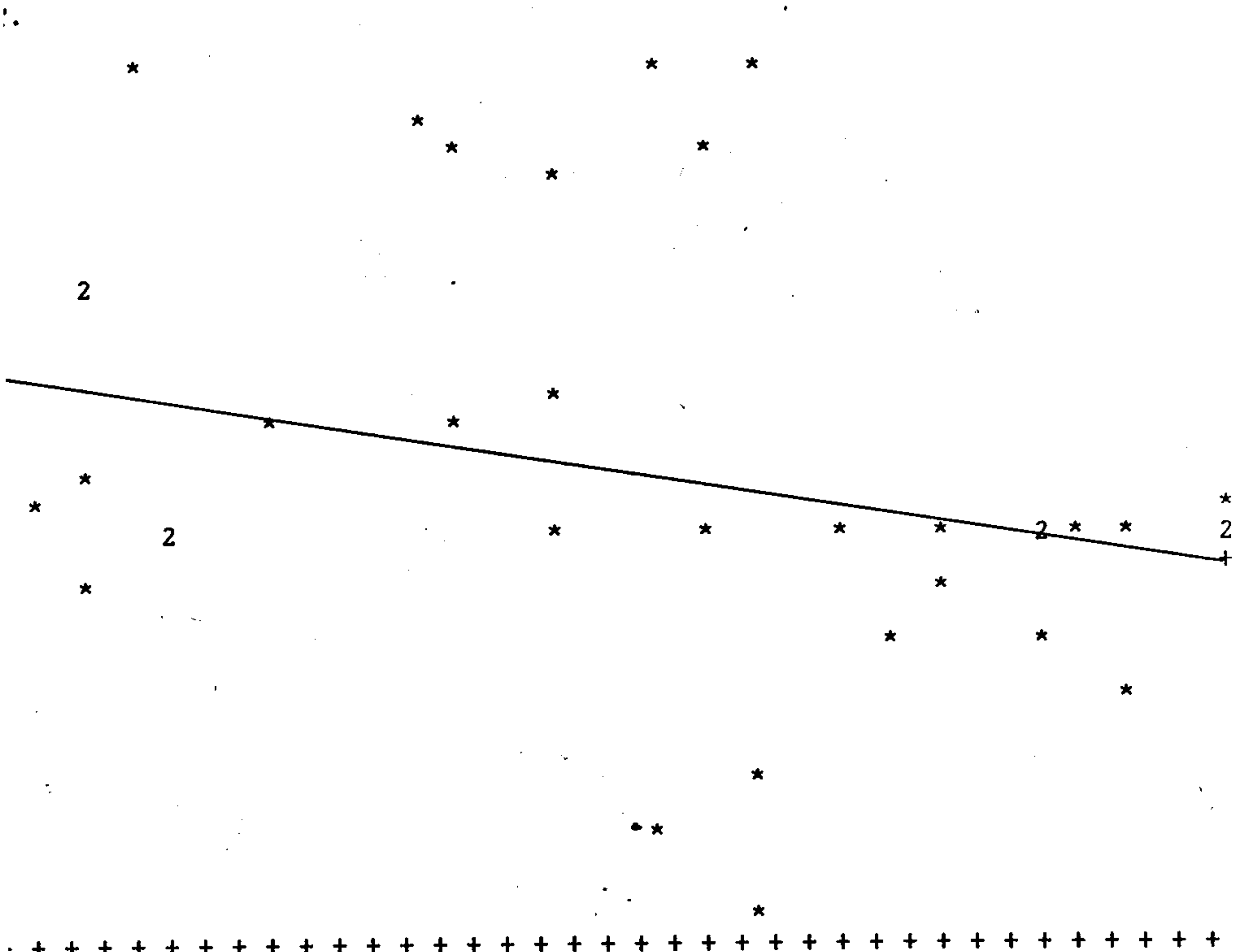


FIGURE 29

ːrelation between Age and Weight by Stature among Cases

ʀ DATA FOR: A:AYMAN LABEL: DIABETES
ʀ OF CASES: 56 NUMBER OF VARIABLES: 16

ESSION EQUATION (Shown by +'s on scatterplot):

TERCEPT= 70.864849048161 SLOPE= -1.5707253261731

: -.3048 r squared = .0929

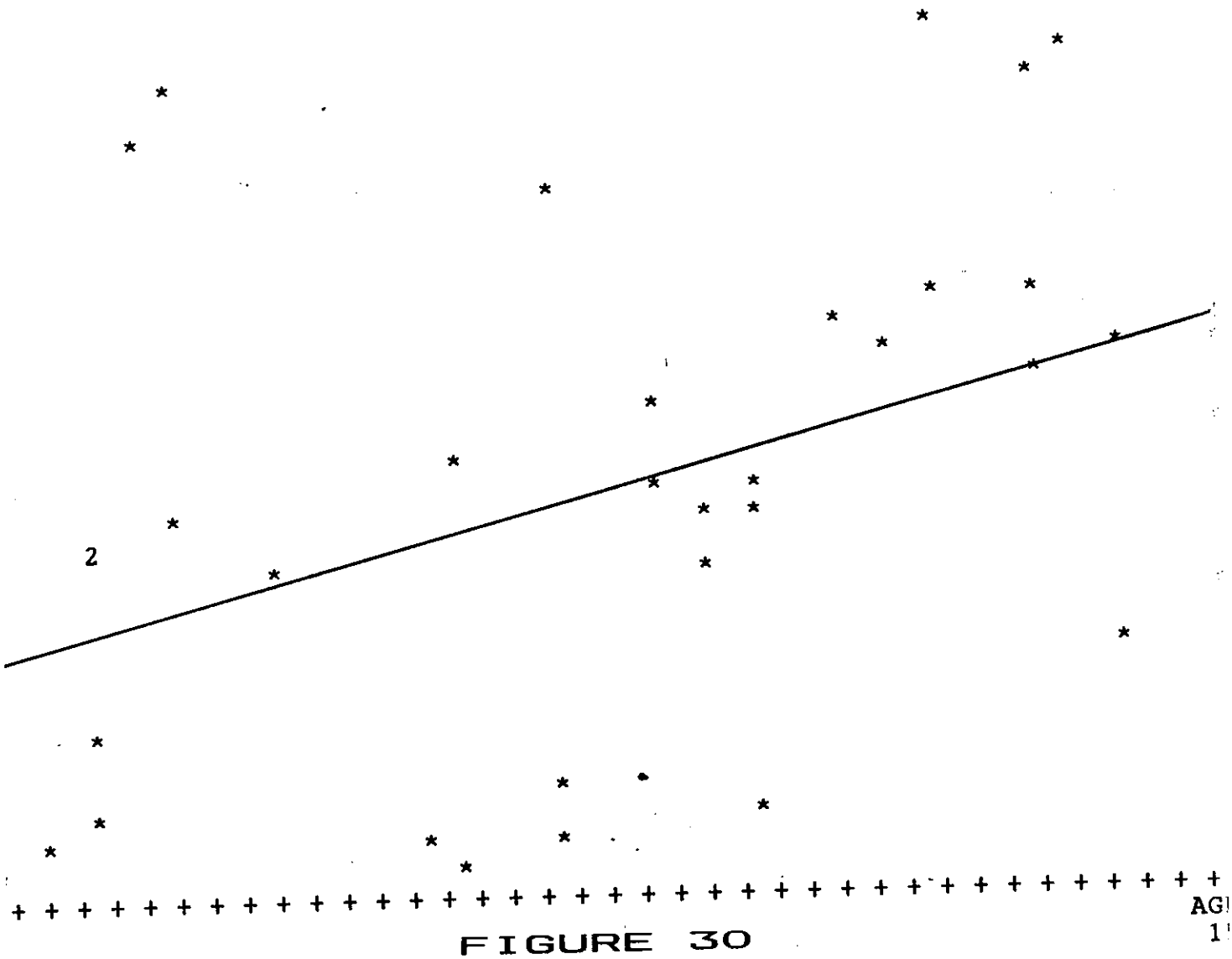


FIGURE 30

Correlation between Age and G.H.R.H. among Cases

ER DATA FOR: A:AYMAN LABEL: DIABETES
ER OF CASES: 56 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 15.994733037281 SLOPE= .94846638438502

= .4085 r squared = .1669

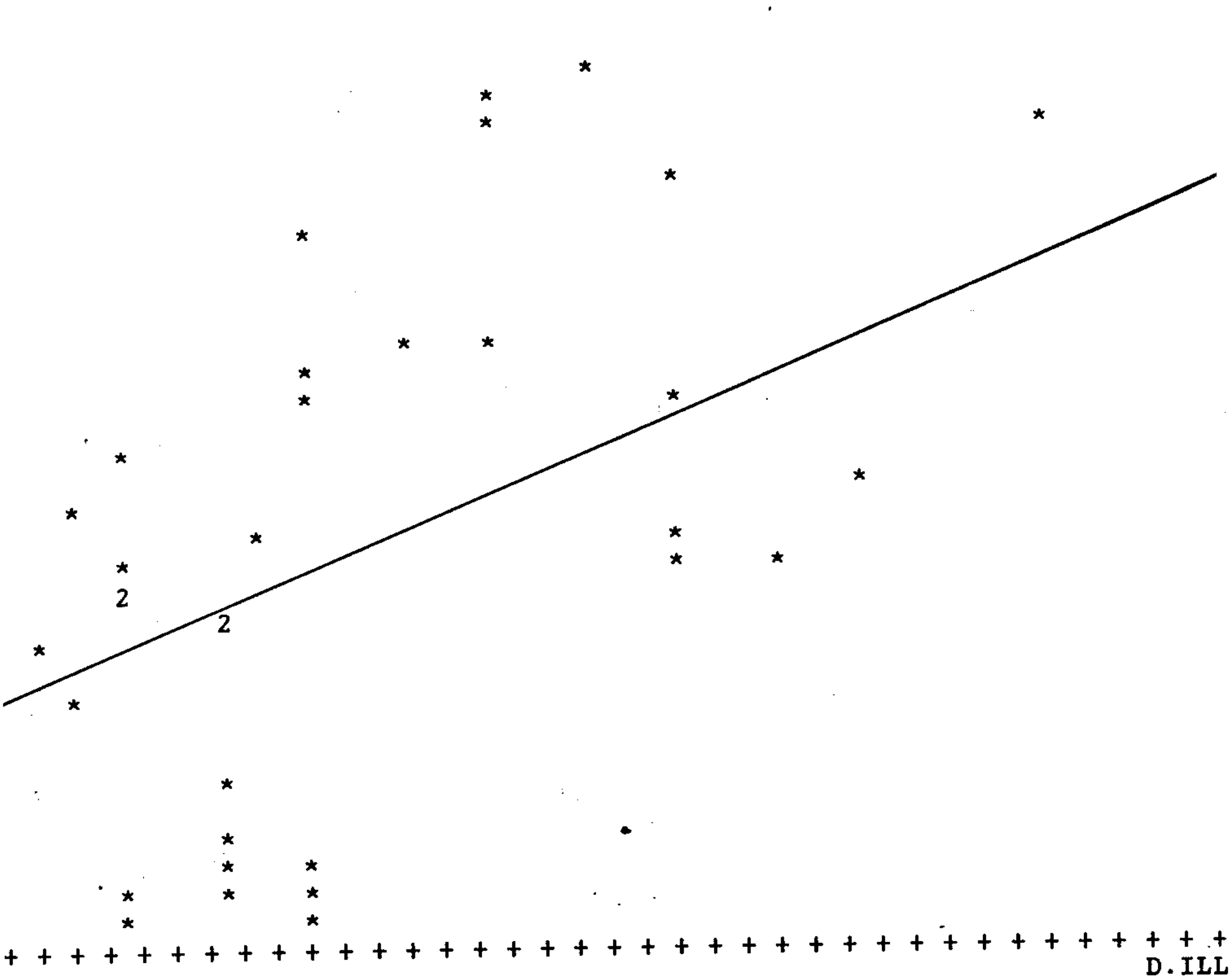


FIGURE 31

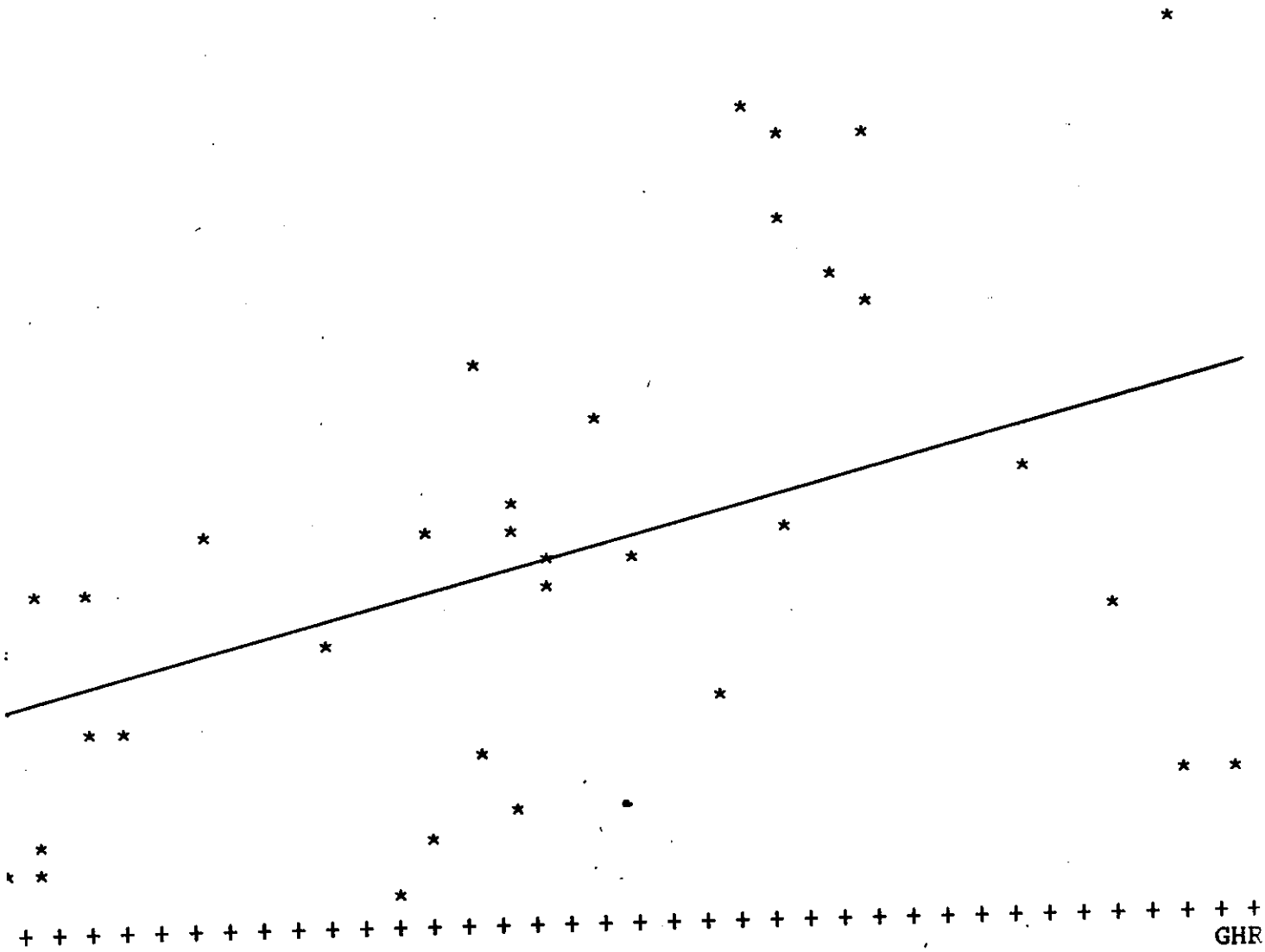
lation between Duration of Illness and G.H.R.H. among Cases

R DATA FOR: A:AYMAN LABEL: DIABETES
R OF CASES: 56 NUMBER OF VARIABLES: 16

ESSION EQUATION (Shown by +'s on scatterplot):

TERCEPT= 17.676155339806 SLOPE= 2.8361941747572

= .4696 r squared = .2205



GHR
4

FIGURE 32

rrelation between G.H.R.H. and Growth Hormone among Cases

ER DATA FOR: A:AYMAN LABEL: DIABETES
ER OF CASES: 56 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 3.6563185503099 SLOPE= .17668097281832

= .4311 r squared = .1859

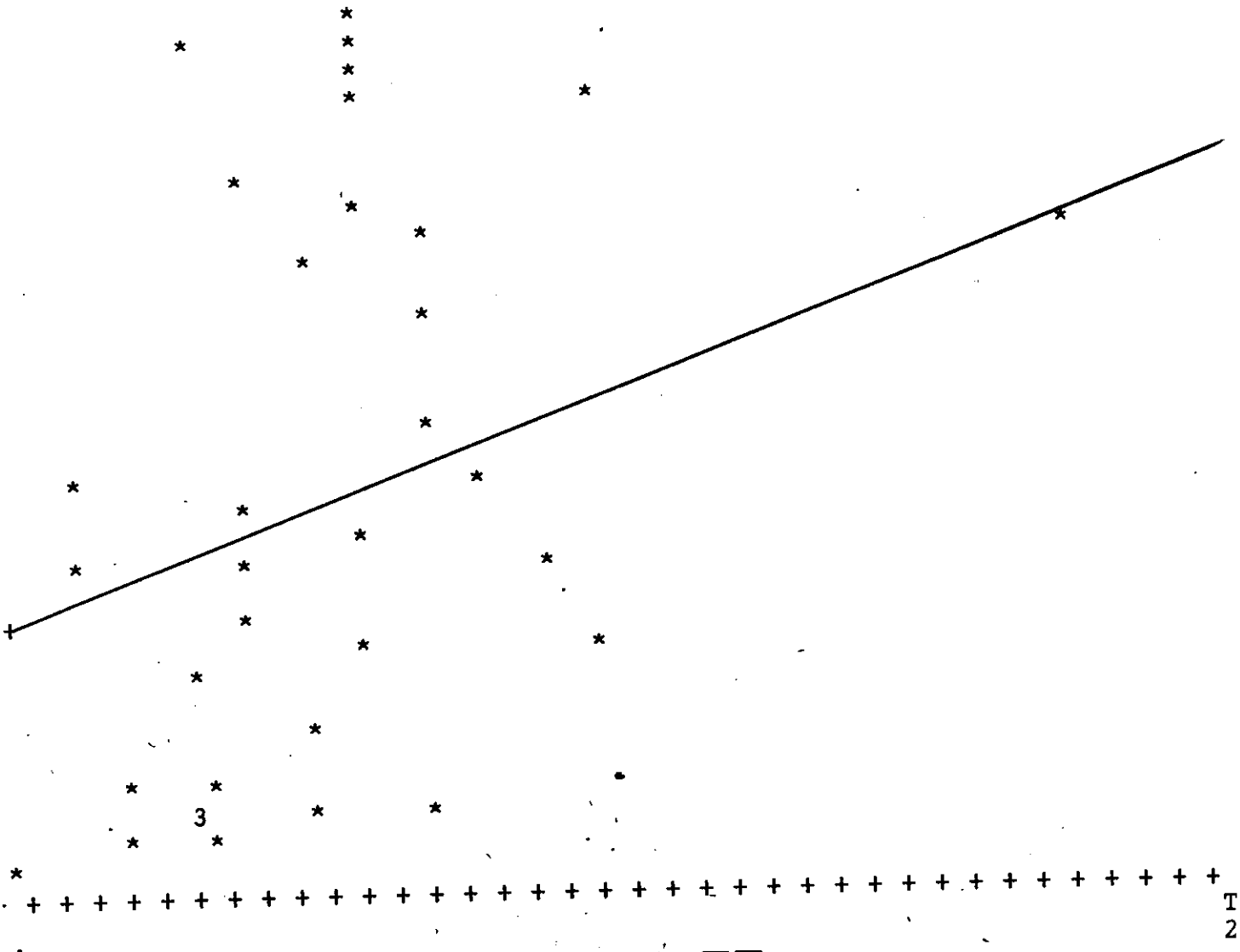


FIGURE 33

Correlation between Insulin TTT. and Glycosylated Hb.

)ER DATA FOR: A:AYMAN LABEL: DIABETES
3ER OF CASES: 56 NUMBER OF VARIABLES: 16

GRESSION EQUATION (Shown by +'s on scatterplot):

INTERCEPT= 10.771783939077 SLOPE= 1.5162114095489

r = .3424 r squared = .1172

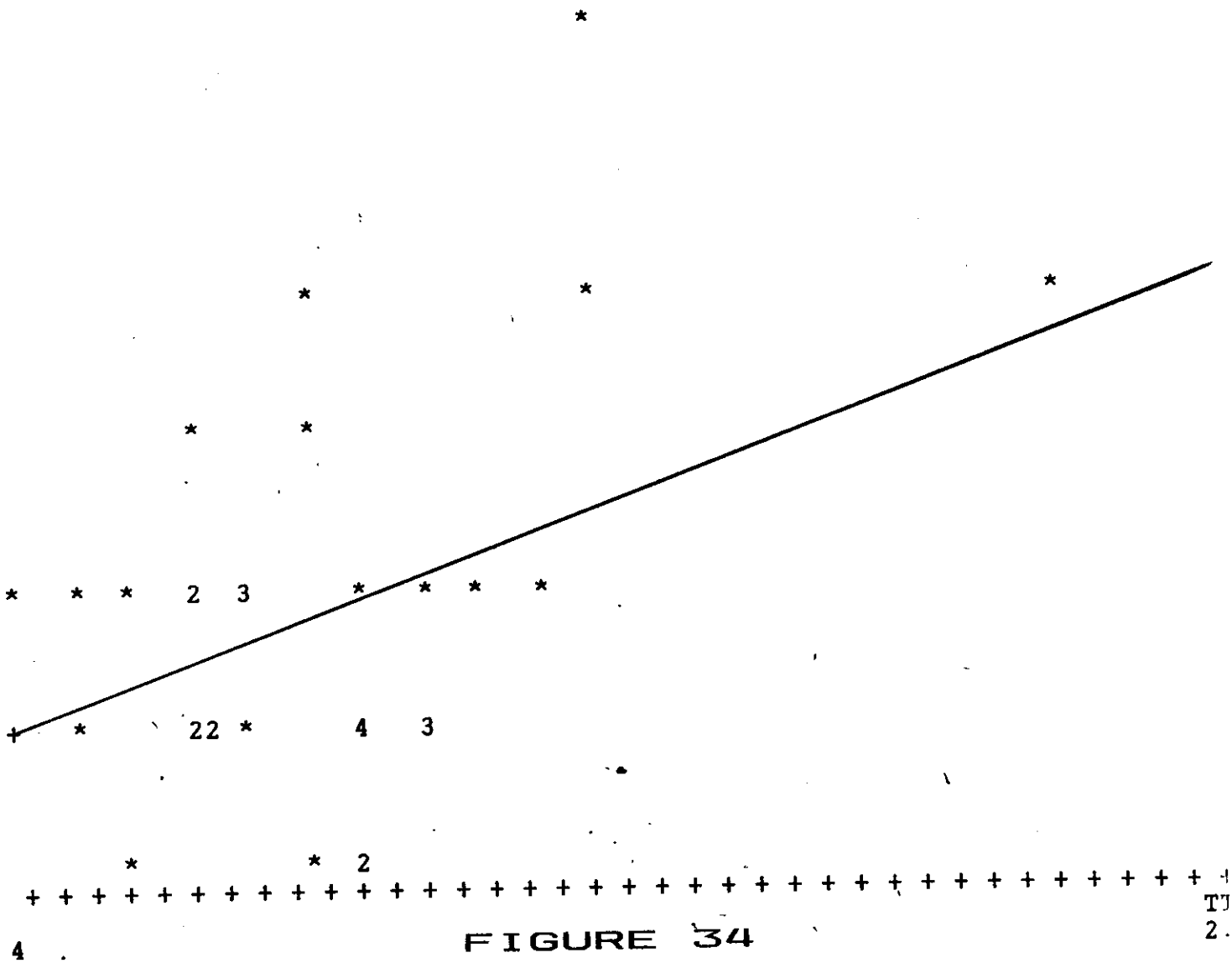


FIGURE 34

rrelation between Insulin TTT. and Creatinine among Cases

ER DATA FOR: A:AYMAN LABEL: DIABETES
ER OF CASES: 56 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= .72958411236263 SLOPE= .15572985544256

= .4896 r squared = .2397

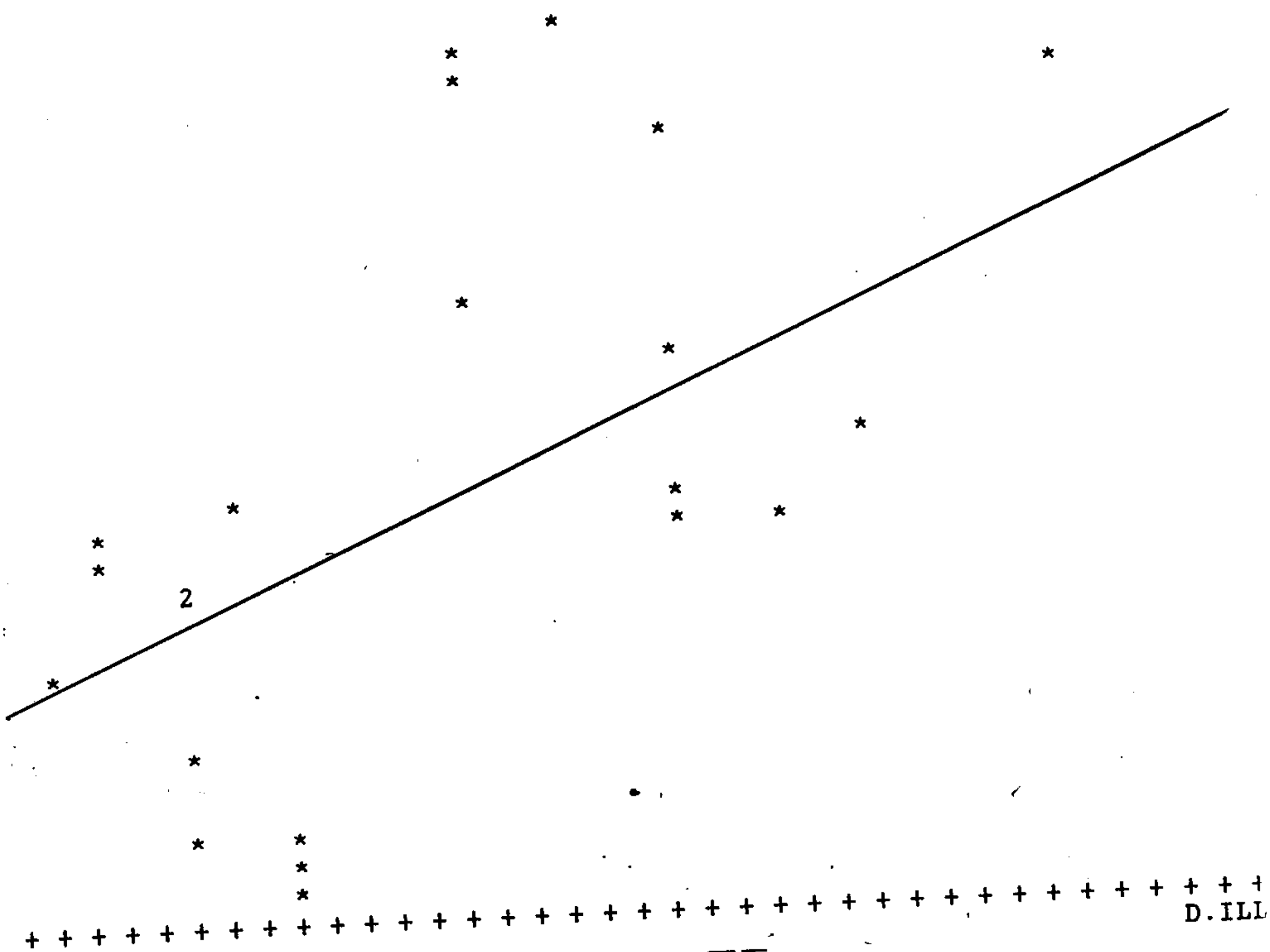


FIGURE 35

5

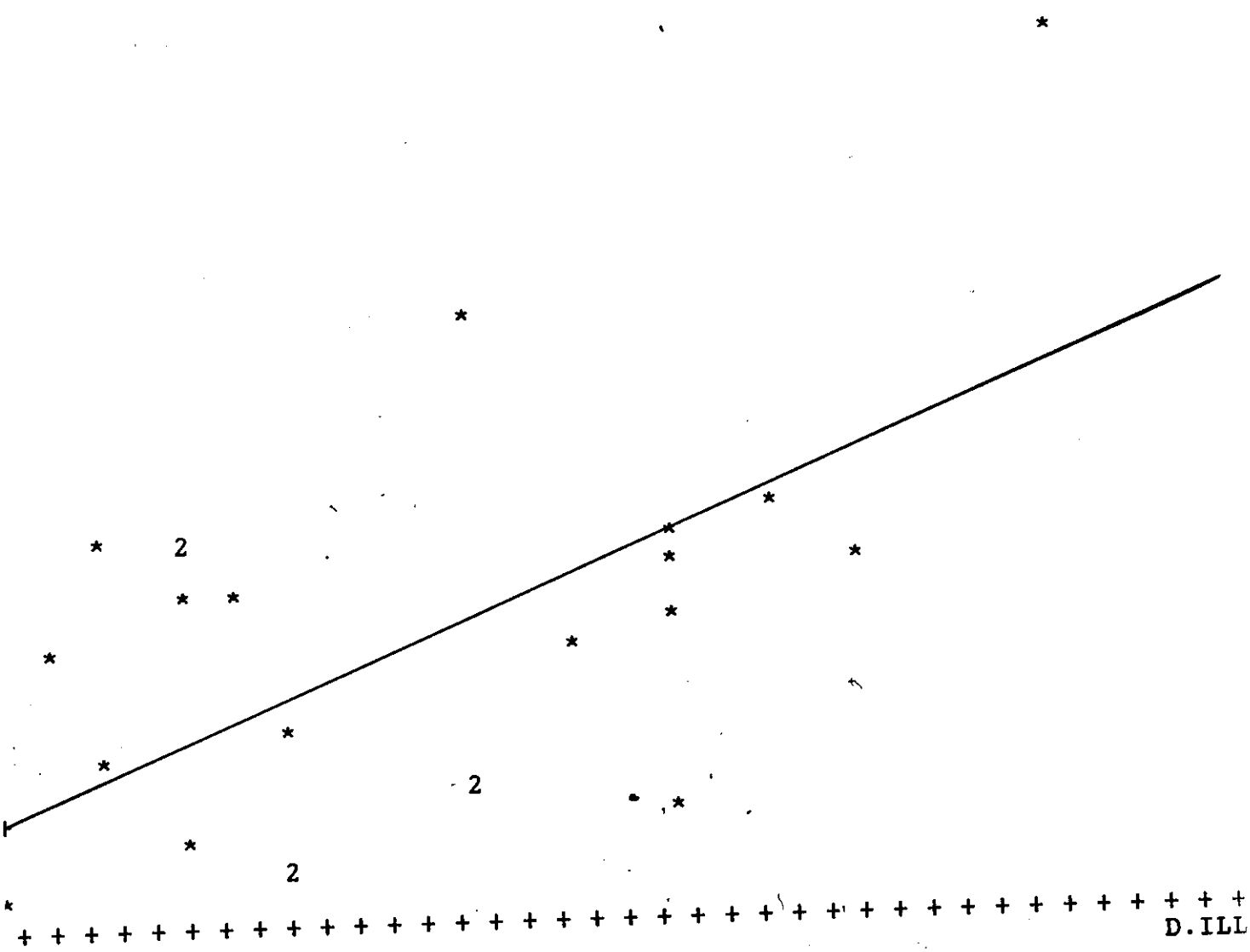
elation between Duration of Illness and G.H.R.H. in Females

ER DATA FOR: A:AYMAN LABEL: DIABETES
ER OF CASES: 56 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 16.04546153846 SLOPE= 3.1163076923082

: = .5415 r squared = .2932



D.ILL

FIGURE 36

5

elation between Duration of Illness and Growth H. in Females

ER DATA FOR: A:AYMAN LABEL: DIABETES
ER OF CASES: 56 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 3.2058307692309 SLOPE= 1.3773538461538

= .6380 r squared = .4071

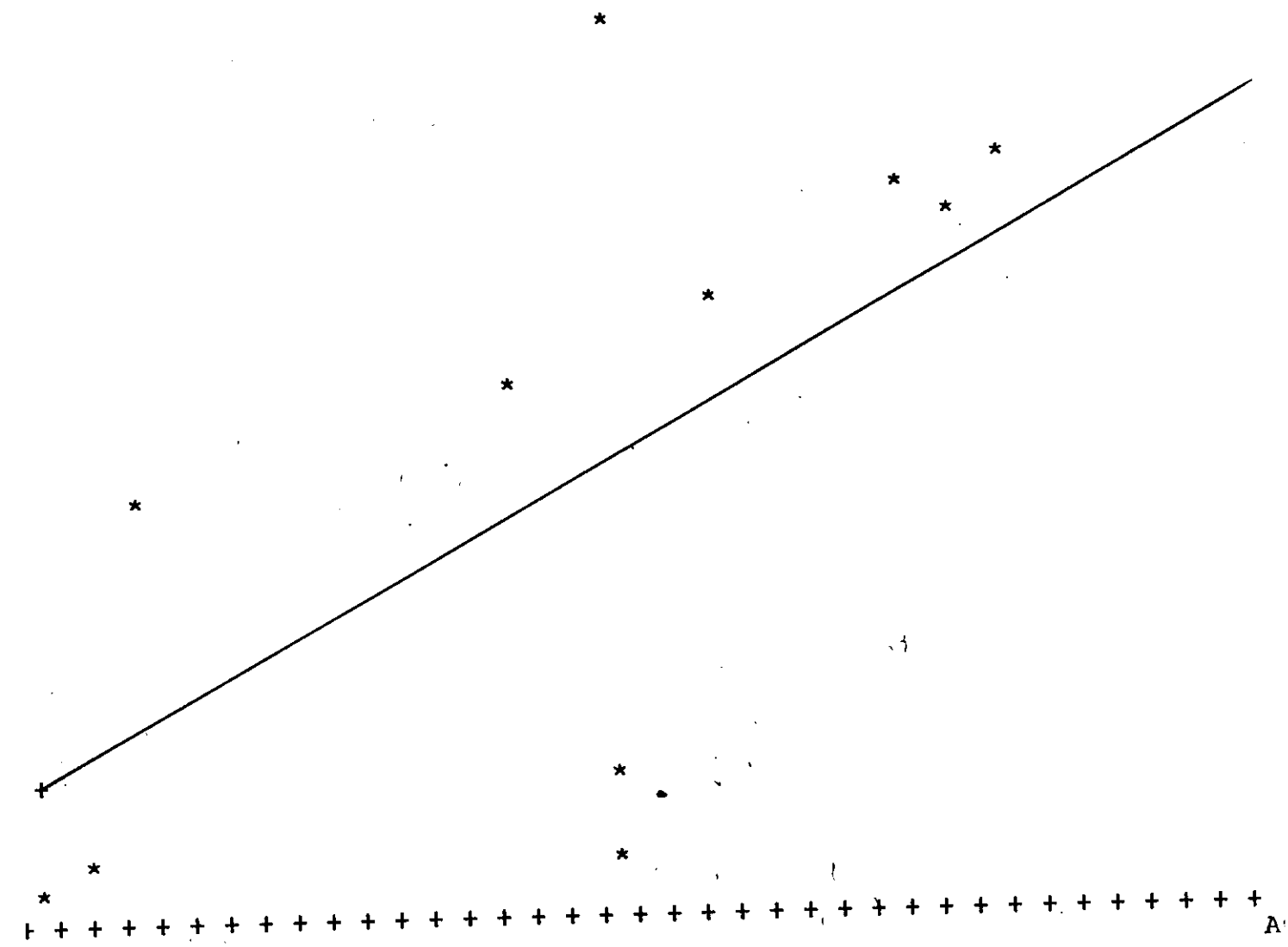


FIGURE 37

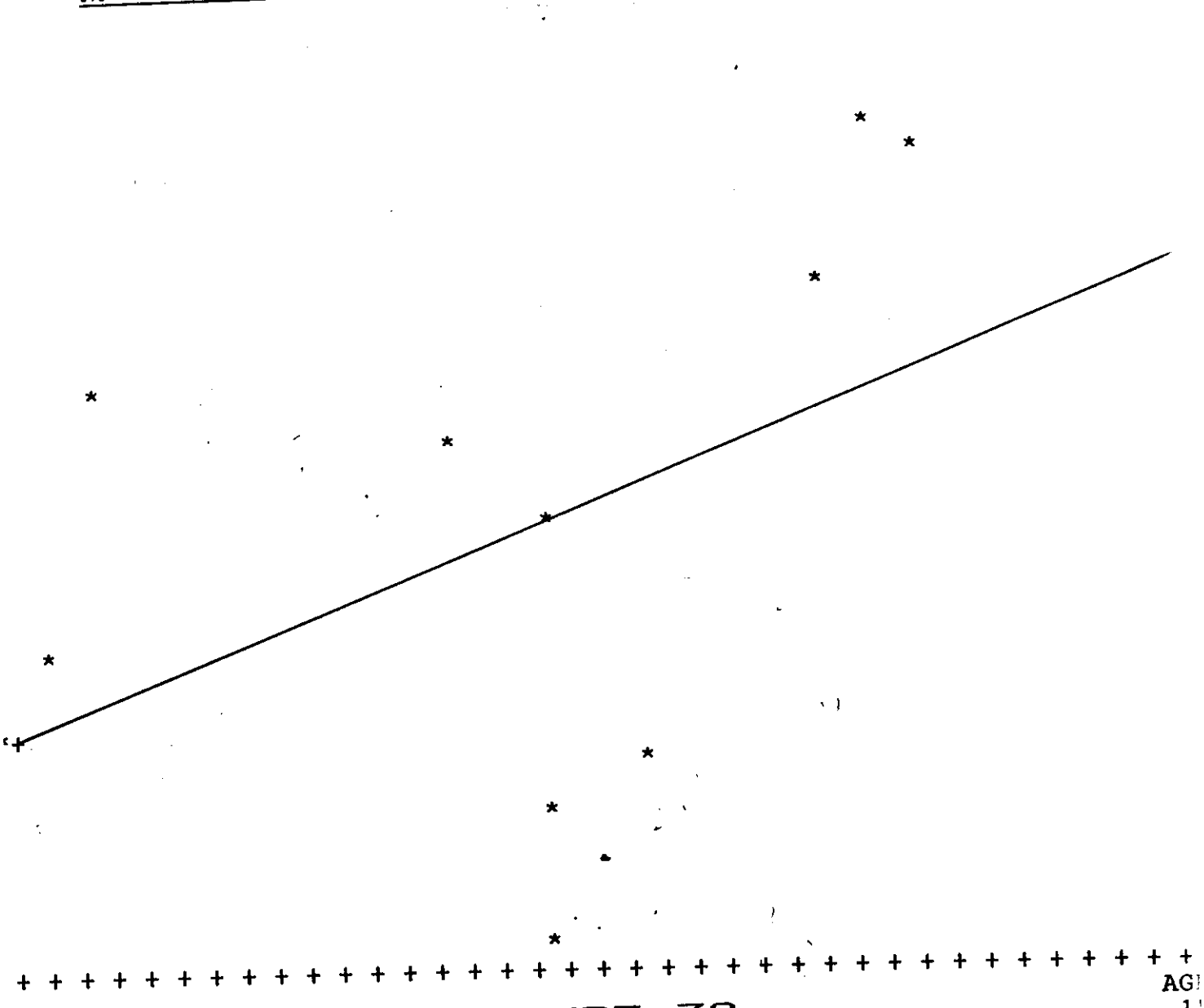
Correlation between Age & GHRH among Male Patients

DER DATA FOR: A:AYMAN LABEL: DIABETES
BER OF CASES: 56 NUMBER OF VARIABLES: 16

GRESSION EQUATION (Shown by +'s on scatterplot):

INTERCEPT= 10.39851370181 SLOPE= 1.5898745935905

r = .6740 r squared = .4543



AG
1

FIGURE 38

Correlation between Age & GH. among Male Patients

ER DATA FOR: A:AYMAN LABEL: DIABETES
ER OF CASES: 56 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 5.2572921504873 SLOPE= .54342777519745

= .5416 r squared = .2933

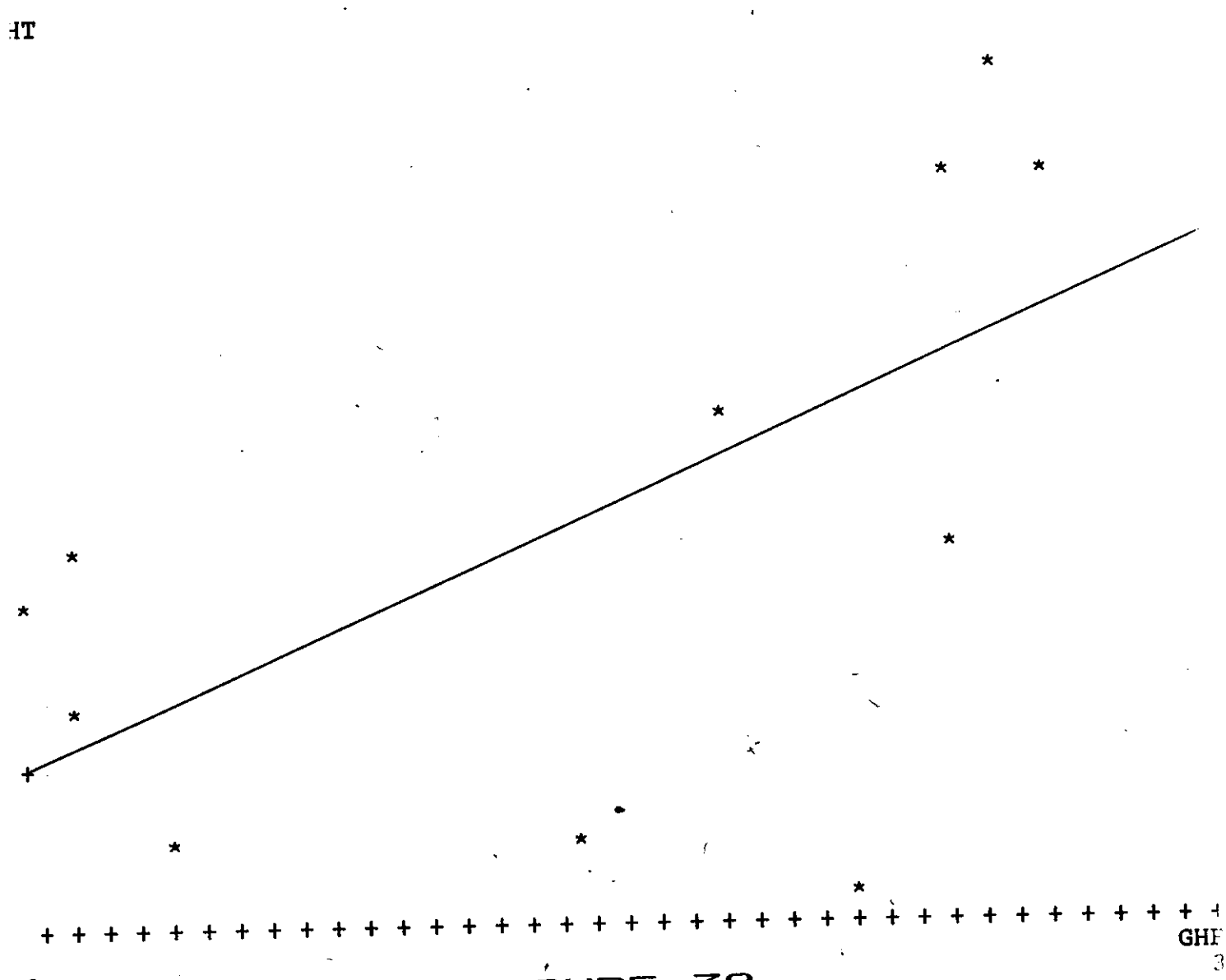


FIGURE 39

Correlation between GHRH & Height among Male Patients

ER DATA FOR: A:AYMAN LABEL: DIABETES
ER OF CASES: 56 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 14.9992486852 SLOPE= 1.6882043576258

= .6263 r squared = .3922

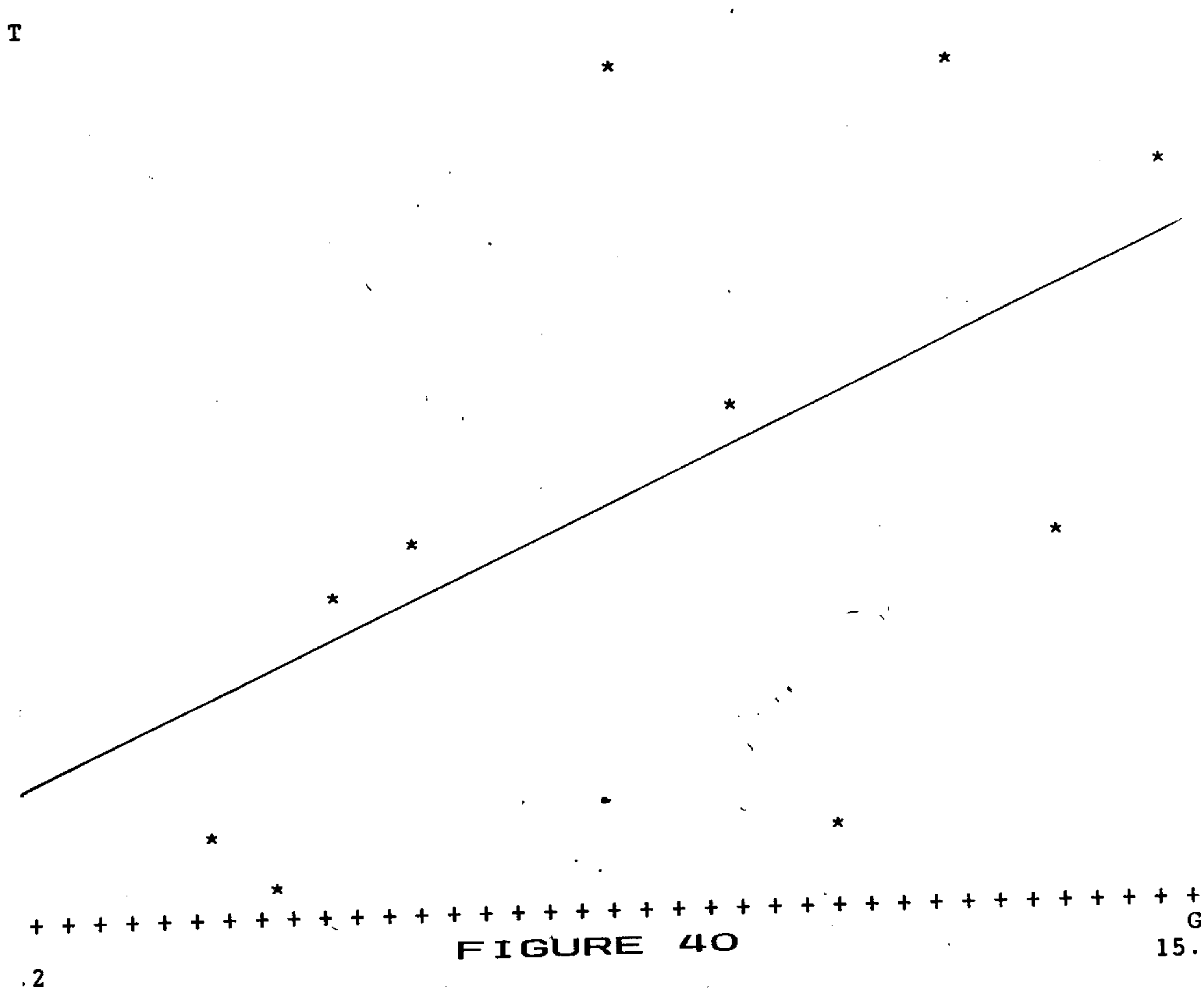


FIGURE 40

Correlation between GH. & Height among Male Patients

ER DATA FOR: A:AYMAN   LABEL: DIABETES
ER OF CASES: 56   NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 14.980595692852   SLOPE= 4.0693683219842

= .6421   r squared = .4123

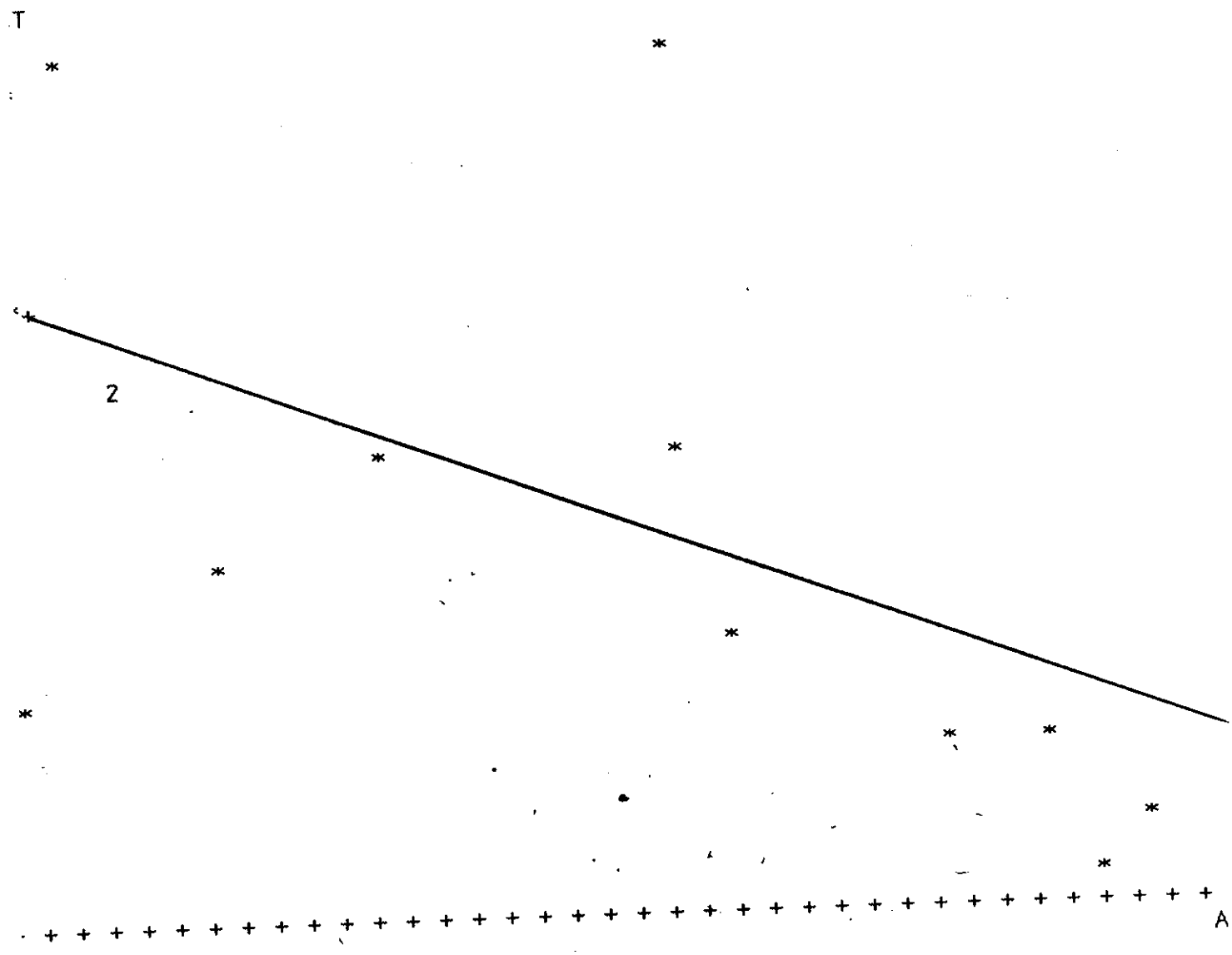


FIGURE 41

relation bet. Age & Height among Badly Controlled Diabetics

DER DATA FOR: A:AYMAN1 LABEL: Male & Female Patients
BER OF CASES: 36 NUMBER OF VARIABLES: 16

GRESSION EQUATION (Shown by +'s on scatterplot):

INTERCEPT= 80.338882333109 SLOPE= -4.0680209035739

r = -.6355 r squared = .4038

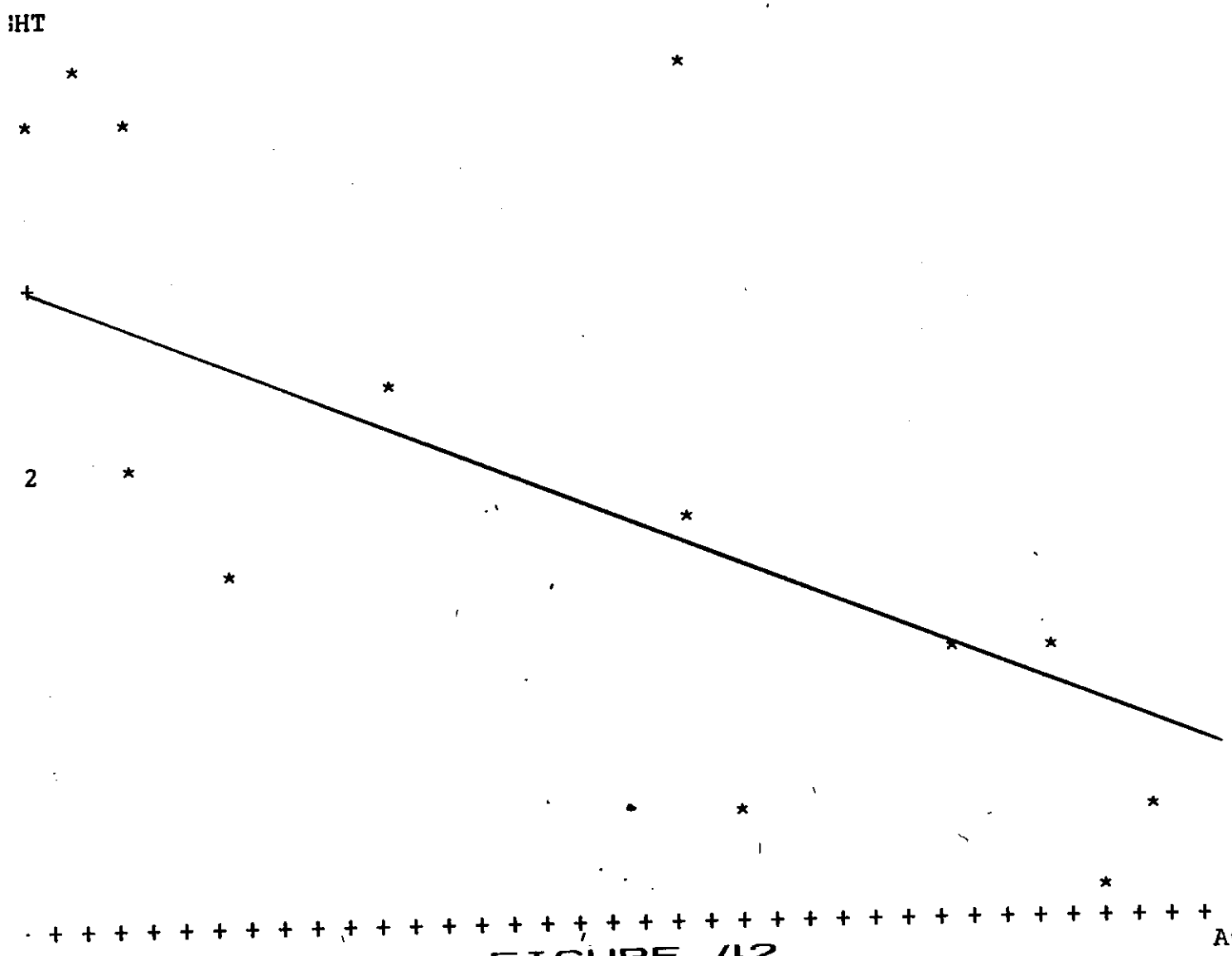


FIGURE 42

:relation bet. Age & Weight among Badly Controlled Patients

)ER DATA FOR: A:AYMAN1 LABEL: Male & Female Patients
)ER OF CASES: 36 NUMBER OF VARIABLES: 16

;RESSION EQUATION (Shown by +'s on scatterplot):

[NTERCEPT= 84.594993256909 SLOPE= -4.3771072151043

: = -.6742 r squared = .4546

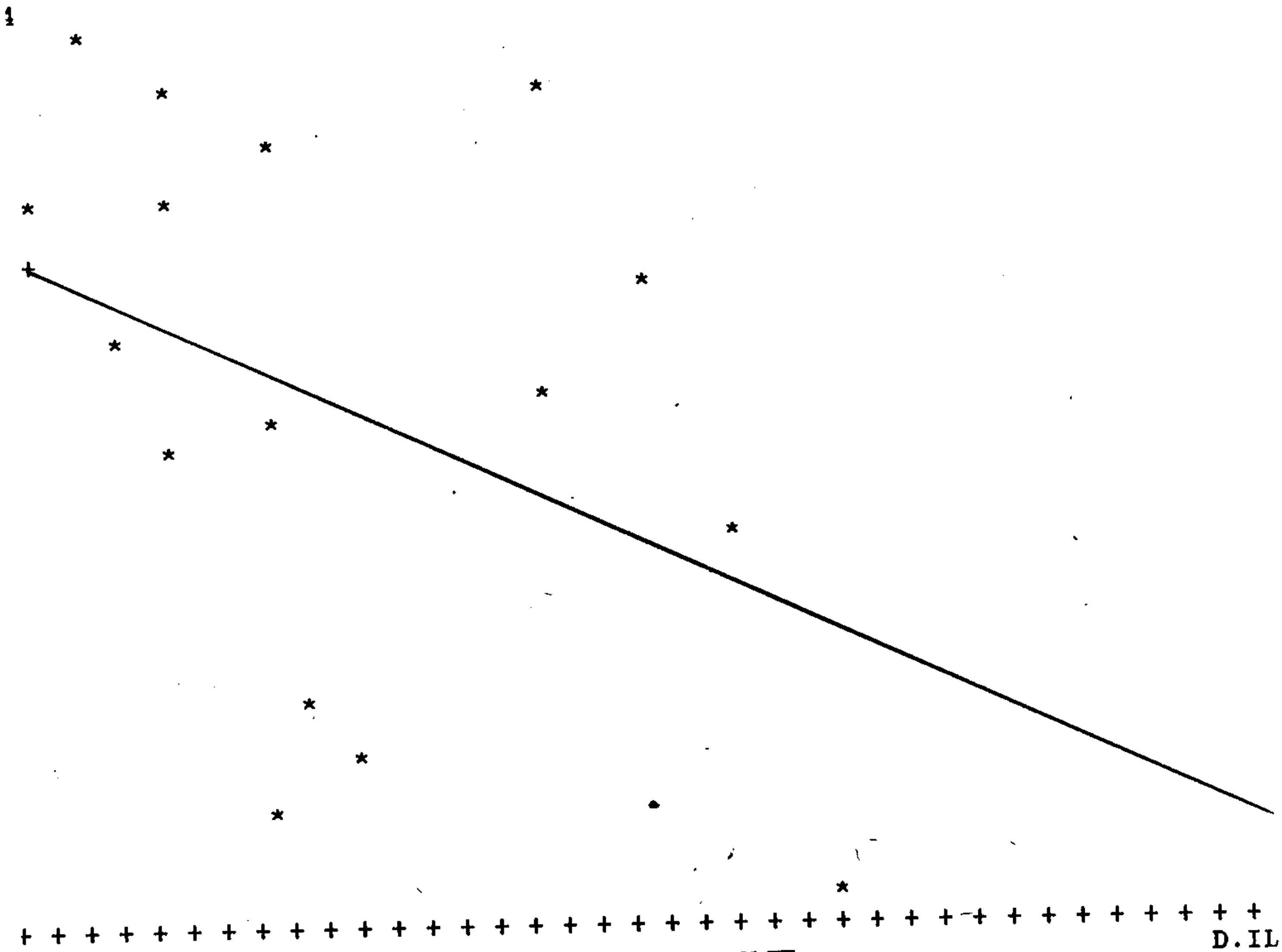


FIGURE 43

relation bet Duration of Illness & Glyc. Hb. in Badly Con.Pts

DER DATA FOR: A:AYMAN1   LABEL: Male & Female Patients
BER OF CASES: 36   NUMBER OF VARIABLES: 16

GRESSION EQUATION (Shown by +'s on scatterplot):

INTERCEPT= 14.654915834947   SLOPE= -.33466408461196

r = -.5309   r squared = .2818

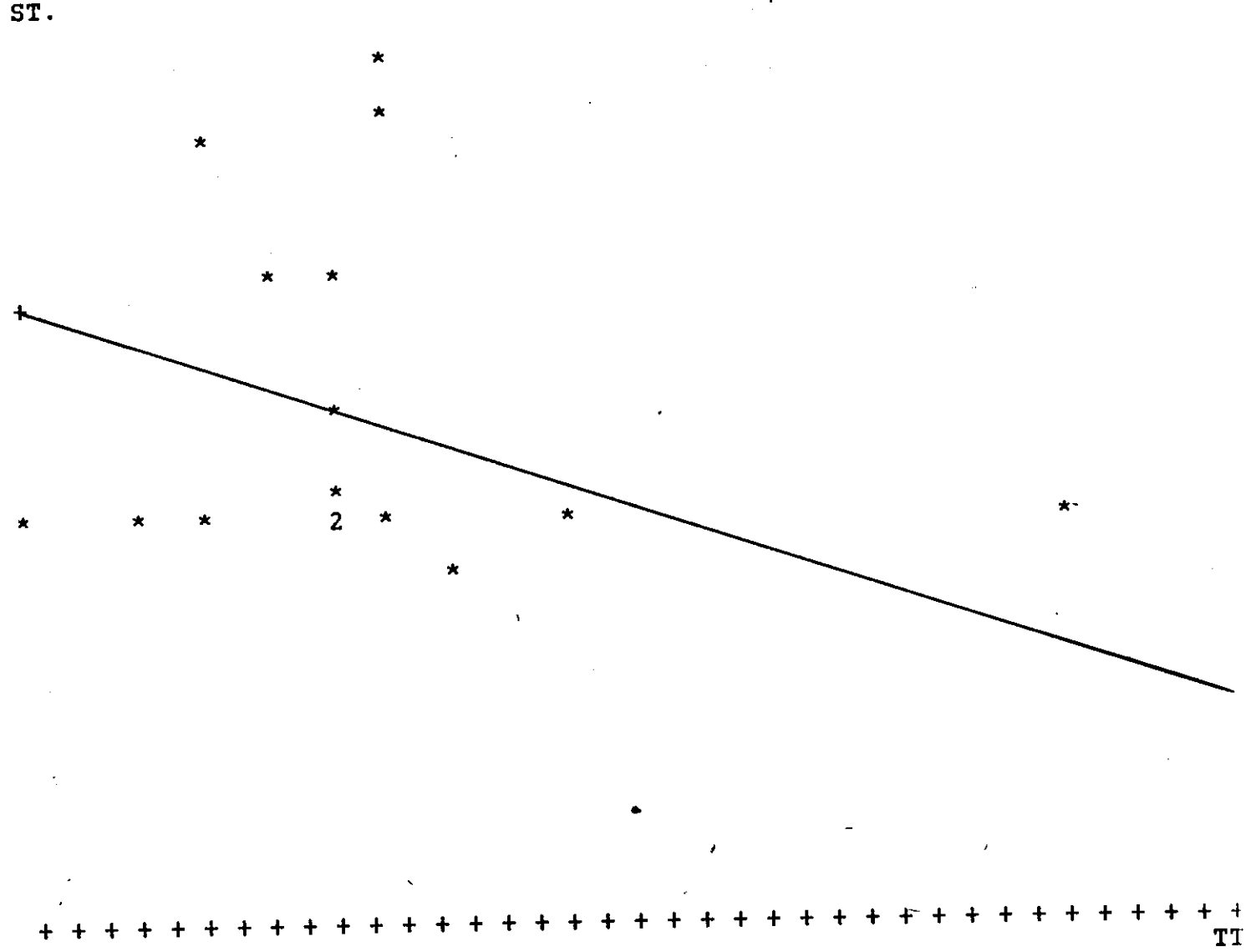


FIGURE 44

relation bet. Insulin TTT & Wt. by Stature in Bad. C. Pts.

ER DATA FOR: A:AYMAN1 LABEL: Male & Female Patients
ER OF CASES: 36 NUMBER OF VARIABLES: 16

RESSION EQUATION (Shown by +'s on scatterplot):

NTERCEPT= 81.08767841538 SLOPE= -19.714535391785

= -.4700 r squared = .2209