Results

Table (1) : Body weight [Kgs] :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	9.50	13.82	14.17	22.14	27.71	38.75
S.D.	0.79	2.52	2.98	3.00	5.58	9.24
S.E.	0.35	0.76	1.22	0.80	2.11	2.47
t	5.17		5.52		3.39	
P	<0.001		<0.001		<0.01	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (2) : Body length and height [cm] : Number, mean, standard deviation (S.D), standard error (S.E) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	78.20	77.77	95.50	107.25	131.43	134.82
S.D.	7.26	8.86	13.94	9.43	10.92	11.55
S.E.	3.24	2.67	5.69	2.52	4.12	3.09
t	0.10		1.90		0.66	
P	>0.05		>0.05		>0.05	
	N.S.		N.S.		N.S.	

N.S : Not significant

Table (3) : Upper Segment [cm] :
Number, mean, standard deviation (S.D) standard error (S.E), and (t) of studied obese and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	46.60	47.68	51.00	56.43	67.93	67.60
S.D.	3.58	5.23	6.88	4.06	6.73	7.83
S.E.	1.60	1.58	2.81	1.09	2.54	2.09
t	0.48		1.8		0.1	
P	>0.05		>0.05		>0.05	
	N.S.		N.S.		N.S.	

N.S. : Not significant.

Table (4) : Lower segment [cm] :
Number, mean, standard deviation (S.D) standard error (S.E), and (t) of studied obese and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	31.60	30.00	44.50	49.75	63.00	64.36
S.D.	3.97	3.63	7.11	5.41	4.76	3.23
S.E.	1.77	1.09	2.90	1.45	1.80	0.86
t	0.77		1.62		0.68	
P	>0.05		>0.05		>0.05	
	N.S.		N.S.		N.S.	

N.S. : Not significant.

Table (5) : Triceps skin fold thickness [mm] : Number, mean, standard deviation (S.D) standard error (S.E), and (t) of studied obese and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	11.24	16.07	10.33	16.03	10.31	21.33
S.D.	0.82	0.91	0.79	0.39	1.26	3.43
S.E.	0.37	0.27	0.32	0.10	0.48	0.92
t	10.54		17		10.62	
P	<0.001		<0.001		<0.001	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (6) : Subscapular skin fold thickness [mm] : Number, mean, standard deviation (S.D) standard error (S.E), and (t) of studied obese and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	7.40	10.40	7.10	9.11	6.03	12.54
S.D.	0.57	0.61	0.86	0.83	0.98	3.25
S.E.	0.25	0.18	0.35	0.22	0.37	0.87
t	9.74		4.86		6.89	
P	<0.001		<0.001		<0.001	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (7) : Mid arm circumference [cm] :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	14.20	17.55	14.50	19.14	18.00	21.36
S.D.	1.30	1.51	1.05	0.74	1.26	1.98
S.E.	0.58	0.45	0.43	0.20	0.48	0.27
t	4.56		9.78		6.1	
P	<0.001		<0.001		<0.001	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (8) : Chest circumference [cm] :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	46.90	49.51	52.08	55.39	62.57	74.50
S.D.	0.89	3.01	1.43	1.73	6.00	8.55
S.E.	0.40	0.91	0.58	0.46	2.26	2.29
t	2.63		4.46		3.71	
P	<0.05		<0.001		<0.01	
	S.		H.S.		H.S.	

S. : Significant.
H.S.: Highly significant.

Table (9) : Abdominal circumference [cm] :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	42.00	49.12	48.08	52.50	57.00	74.36
S.D.	1.06	3.41	1.36	1.83	5.17	10.63
S.E.	0.47	1.03	0.56	0.49	1.95	2.84
t	6.29		5.94		5.33	
P	<0.001		<0.001		<0.001	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (10) : Ponderal index [cm/kg] : Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	36.90	32.45	39.50	38.20	43.74	40.04
S.D.	2.52	1.85	3.10	1.70	1.46	1.12
S.E.	1.13	0.48	1.27	0.45	0.55	0.30
t	3.625		0.964		5.9	
P	<0.01		>0.2		<0.001	
	H.S.		N.S.		H.S.	

N.S. : Not significant.

H.S. : Highly significant.

Table (11) : Weight/Height ratio [kg/m] : Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	12.163	17.640	14.720	20.569	20.634	28.439
S.D.	0.495	1.617	1.146	1.078	2.285	4.299
S.E.	0.221	0.488	0.468	0.288	0.864	1.149
t	10.22		10.64		5.429	
P	<0.001		<0.001		<0.001	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (12) : Body built index [kg/m] :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	15.72	22.80	15.56	19.30	15.70	21.01
S.D.	1.68	1.60	1.48	1.05	1.13	1.75
S.E.	0.75	0.48	0.60	0.28	0.43	0.47
t	6.189		5.649		8.336	
P	<0.001		<0.001		<0.001	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (13) : Fat index :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	18.64	26.47	17.47	25.14	16.34	33.87
S.D.	1.35	0.93	1.57	0.96	2.16	6.40
S.E.	0.60	0.28	0.64	0.26	0.82	1.71
t	11.83		11.1		9.24	
P	<0.001		<0.001		<0.001	
	H.S.		H.S.		H.S.	

H.S. : Highly significant.

Table (14) : Systolic blood pressure [mm Hg] : Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	>2-<6 years		6-12 years	
	control	obese	control	obese
Number	(6)	(14)	(7)	(14)
Mean	90.00	98.57	100.00	106.78
S.D.	6.32	4.97	5.78	6.38
S.E.	2.58	1.33	2.18	1.71
t	2.95		2.45	
P	<0.01		<0.05	
	H.S.		S.	

S. : Significant.

H.S. : Highly significant.

Table (15) : Diastolic blood pressure [mm Hg] : Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	>2-<6 years		6-12 years	
	control	obese	control	obese
Number	(6)	(14)	(7)	(14)
Mean	57.83	63.21	61.43	66.07
S.D.	4.88	5.04	3.78	6.26
S.E.	1.99	1.35	1.43	1.67
t	2.24		2.11	
P	<0.05		<0.05	
	S.		S.	

S. : Significant.

Table (16) : Order of birth of studied obese infants and children and percentage according to family history of obesity :

	Children with +ve family history		Children with -ve family history	
	No.	%	No.	%
1	7	26.9	5	38.5
2	12	46.2	3	23.1
3	5	19.2	2	15.4
4	2	7.7	2	15.4
5	0	0	1	7.6
Total	26	100	13	100

Table (17) : Insulin [uU/ml] :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	12.70	24.00	23.83	36.64	26.92	39.98
S.D.	4.92	11.86	8.96	14.96	4.30	14.12
S.E.	2.20	3.58	3.66	4.00	0.62	3.77
t	2.021		1.937		2.365	
P	<0.05		<0.05		<0.025	
	S.		S.		S.	

S. : Significant.

Table (18) : Growth hormone [ng/ml] :
Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	3.540	3.510	2.510	1.943	2.110	1.286
S.D.	2.230	2.828	1.442	1.442	0.873	0.592
S.E.	0.997	0.850	0.589	0.385	0.329	0.158
t	0.0229		0.8059		2.568	
P	>0.475		>0.2		<0.01	
	N.S.		N.S.		H.S.	

N.S. : Not significant.
H.S. : Highly significant.

Table (19) : T3 (ng/dl), T4 (µg/dl) and T3/T4 ratio : Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

	Age group	0-2 years		>2-<6 years		6-12 years	
		control	obese	control	obese	control	obese
	Number	(5)	(11)	(6)	(14)	(7)	(14)
T3 (ng/dl)	Mean	112.400	152.700	144.830	154.070	160.850	154.500
	S.D.	36.882	40.662	41.691	34.949	24.606	47.531
	S.E.	11.120	12.260	15.762	9.341	9.300	12.703
	t	1.844		0.5126		0.3458	
	P	<0.05		>0.3		>0.35	
		S.		N.S.		N.S.	
T4 (µg/dl)	Mean	7.640	10.370	9.716	9.771	8.142	10.328
	S.D.	2.960	2.029	1.869	3.369	0.885	2.398
	S.E.	1.324	0.612	0.763	0.900	0.334	0.641
	t	2.169		0.036		2.309	
	P	<0.025		>0.475		<0.05	
		S.		N.S.		S.	
T3/T4 Ratio	Mean	15.19	14.90	14.670	17.770	20.100	16.100
	S.D.	1.94	4.41	1.630	7.200	4.910	8.020
	S.E.	0.87	1.33	0.665	1.924	1.856	2.143
	t	0.182		1.523		1.41	
	P	>0.05		>0.05		>0.05	
		N.S.		N.S.		N.S.	

N.S. : Not significant.
S. : Significant

Table (20) : Cortisol (µg/dl) :

Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	7.460	12.318	5.660	5.518	3.450	5.426
S.D.	3.177	4.187	3.626	3.123	2.648	2.920
S.E.	1.421	1.262	1.480	0.835	1.000	0.780
t	2.2918		0.0889		1.5642	
P	<0.025		>0.45		>0.05	
	S.		N.S.		N.S.	

N.S. : Not significant.

S. : Significant

Table (21) : Cyclic AMP (nm/l) :

Number, mean, standard deviation (SD), standard error (SE) and (t) of studied obese, and control infants and children according to age.

Age group	0-2 years		>2-<6 years		6-12 years	
	control	obese	control	obese	control	obese
Number	(5)	(11)	(6)	(14)	(7)	(14)
Mean	2.070	3.415	3.408	2.356	1.889	2.532
S.D.	1.107	1.590	2.126	1.443	1.864	1.668
S.E.	0.494	0.479	0.868	0.386	0.705	0.445
t	2.1452		1.2978		0.8018	
P	<0.025		>0.1		>0.2	
	S.		N.S.		N.S.	

N.S. : Not significant.

S. : Significant

Table (22) : Correlation coefficient between insulin and growth hormone :

	r	P	Linear regression equation y = a + b x
0-2 years	-0.578	<0.05 S.	6.90 - 0.138 x
>2-<6 years	-0.406	<0.05 S.	3.38 - 0.039 x
6-12 years	-0.069	>0.05 N.S.	1.40 - 2.890 x

N.S. : Not significant.

S. : Significant.

Table (23) : Correlation coefficient between insulin and cortisol :

	r	P	Linear regression equation y = a + b x
0-2 years	+5.637		N.S.	
>2-<6 years	+0.015	>0.05	N.S.	5.466 + 0.0031 x
6-12 years	+0.439	<0.05	S.	1.790 + 0.0910 x

N.S. : Not significant.

S. : Significant.

Table (24) : Correlation coefficient between insulin and cyclic AMP :

	r	P	Linear regression equation y = a + b x
0-2 years	-0.357	>0.05 N.S.	4.56 - 0.048 x
>2-<6 years	-0.233	>0.05 N.S.	3.18 - 0.233 x
6-12 years	+0.461	<0.05 S.	0.36 + 0.054 x

N.S. : Not significant.

S. : Significant.

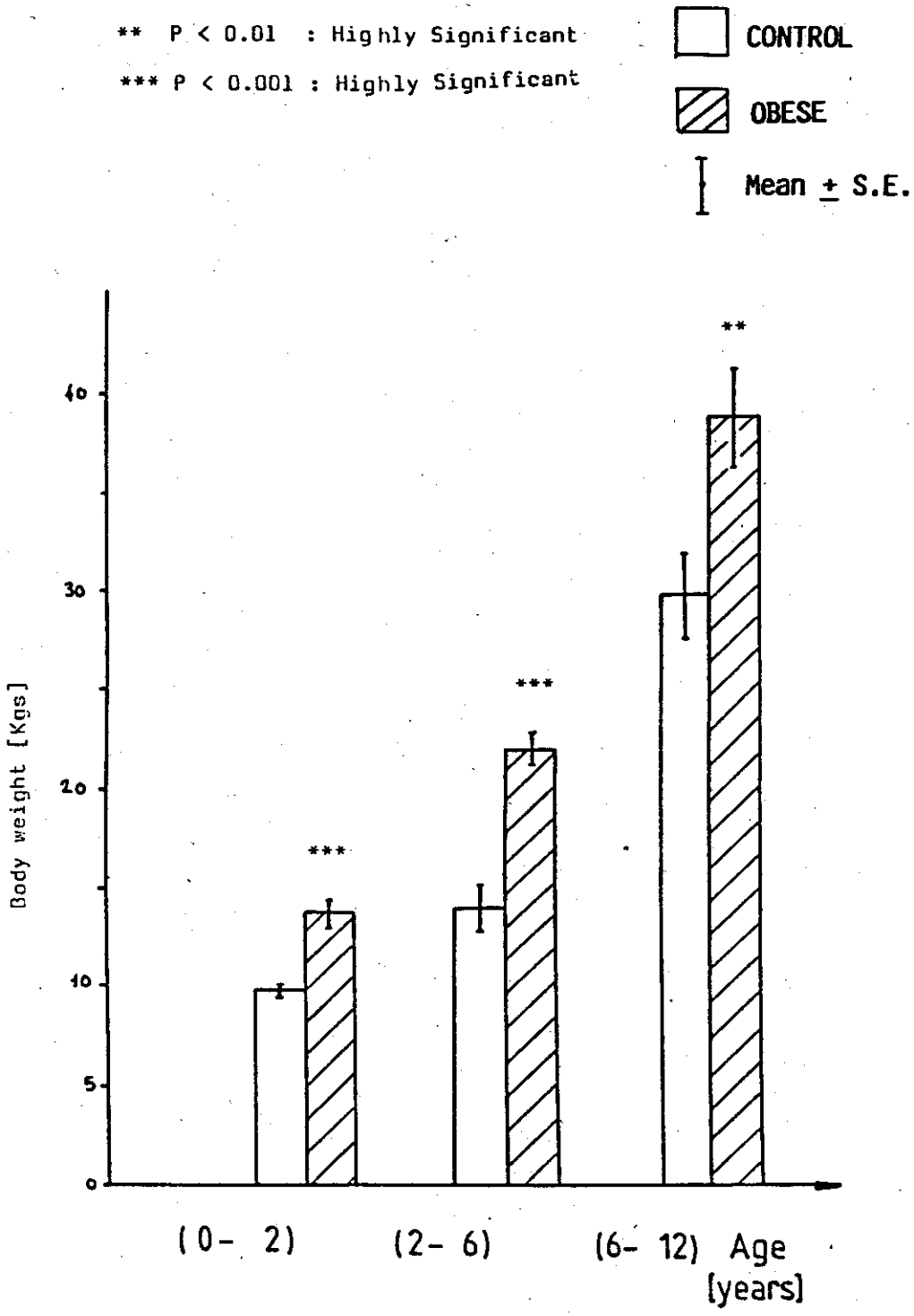

Figure (1) : Mean + standard error (SE) of body weight [kgs] of studied obese and control infants and children according to age.

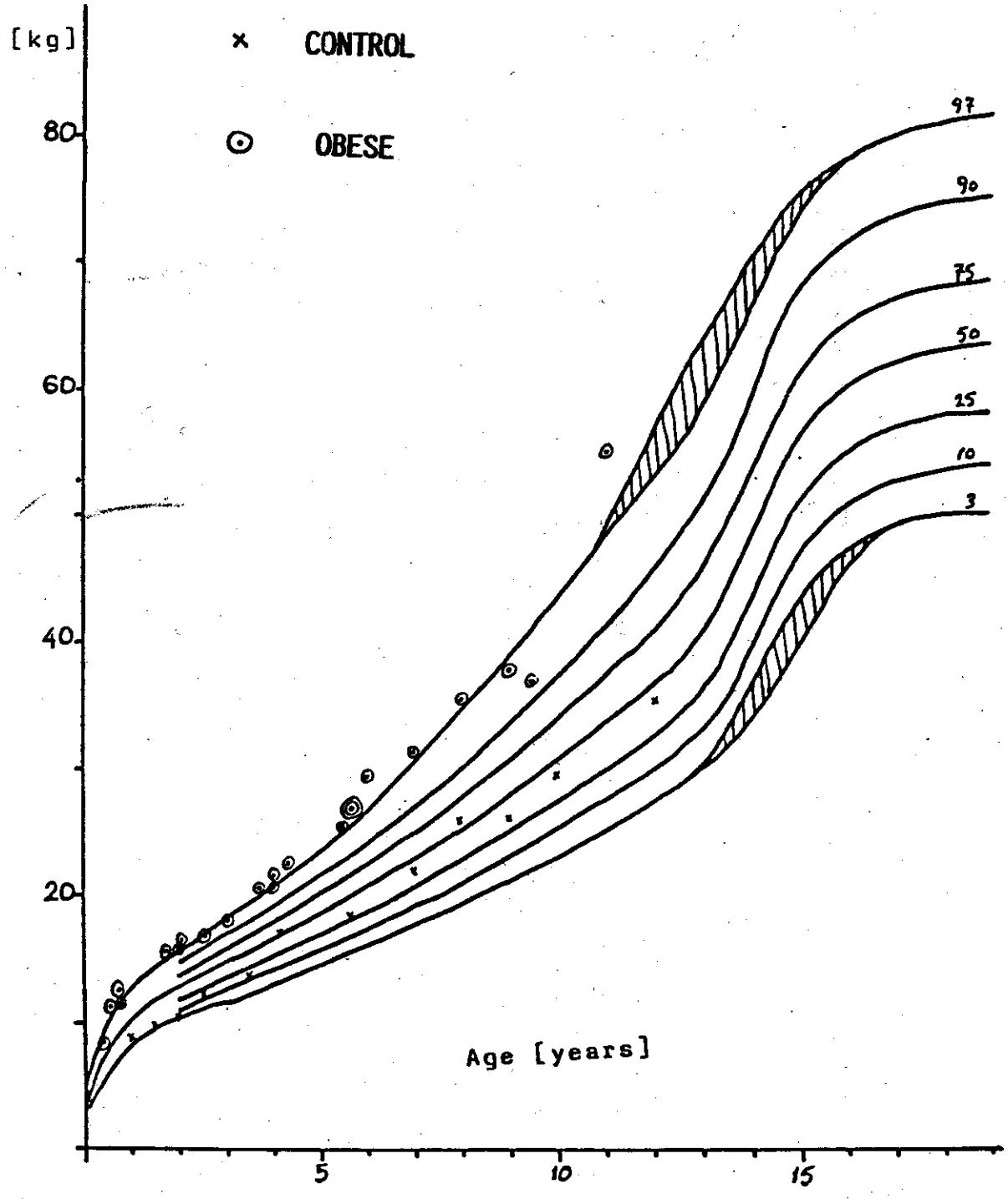

Figure (2) : Body weight of obese and control boys distributed on growth curve of Tanner and Whitehouse (1976).

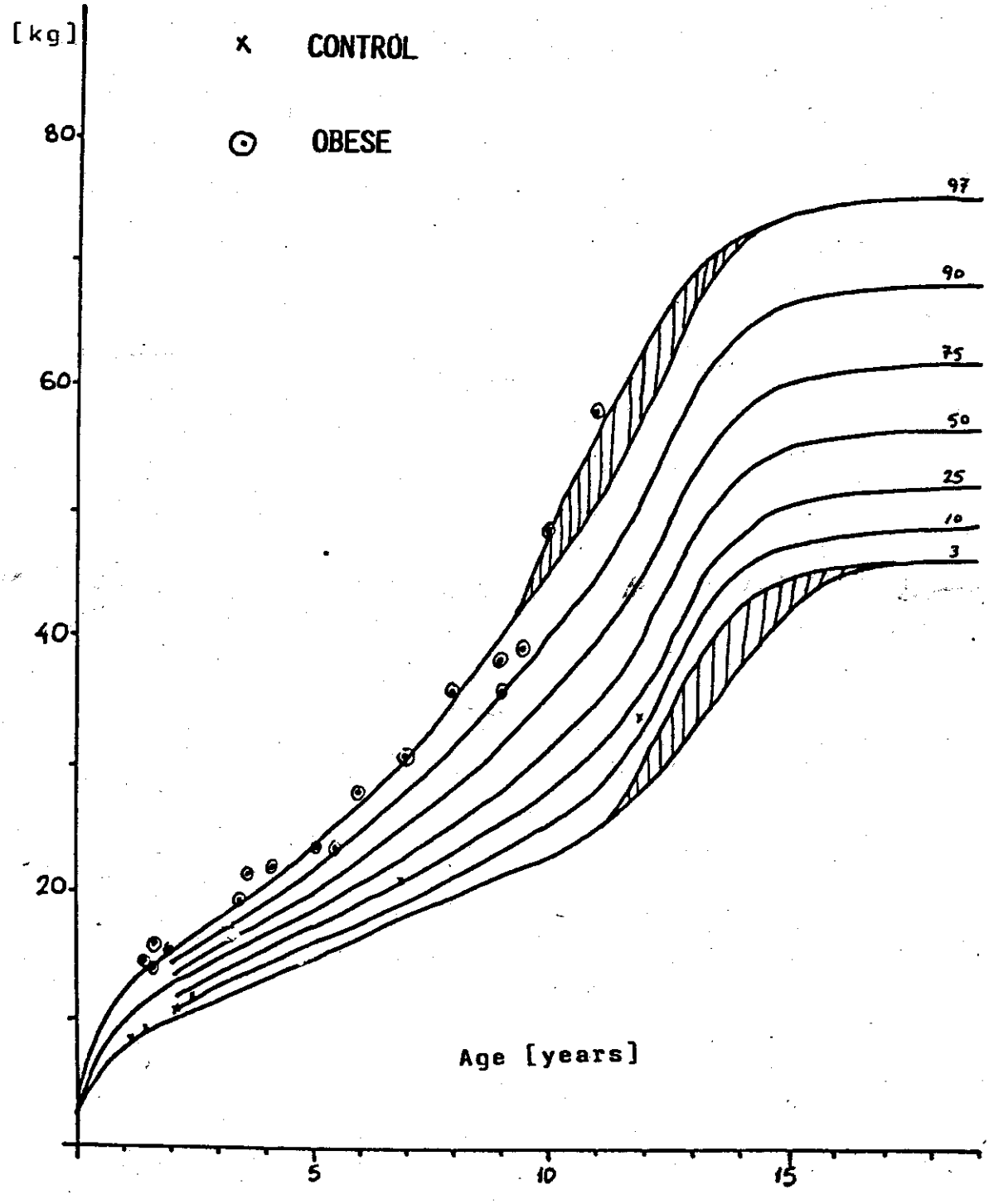

Figure (3) : Body weight of obese and control girls distributed on growth curve of Tanner and Whitehouse (1976).

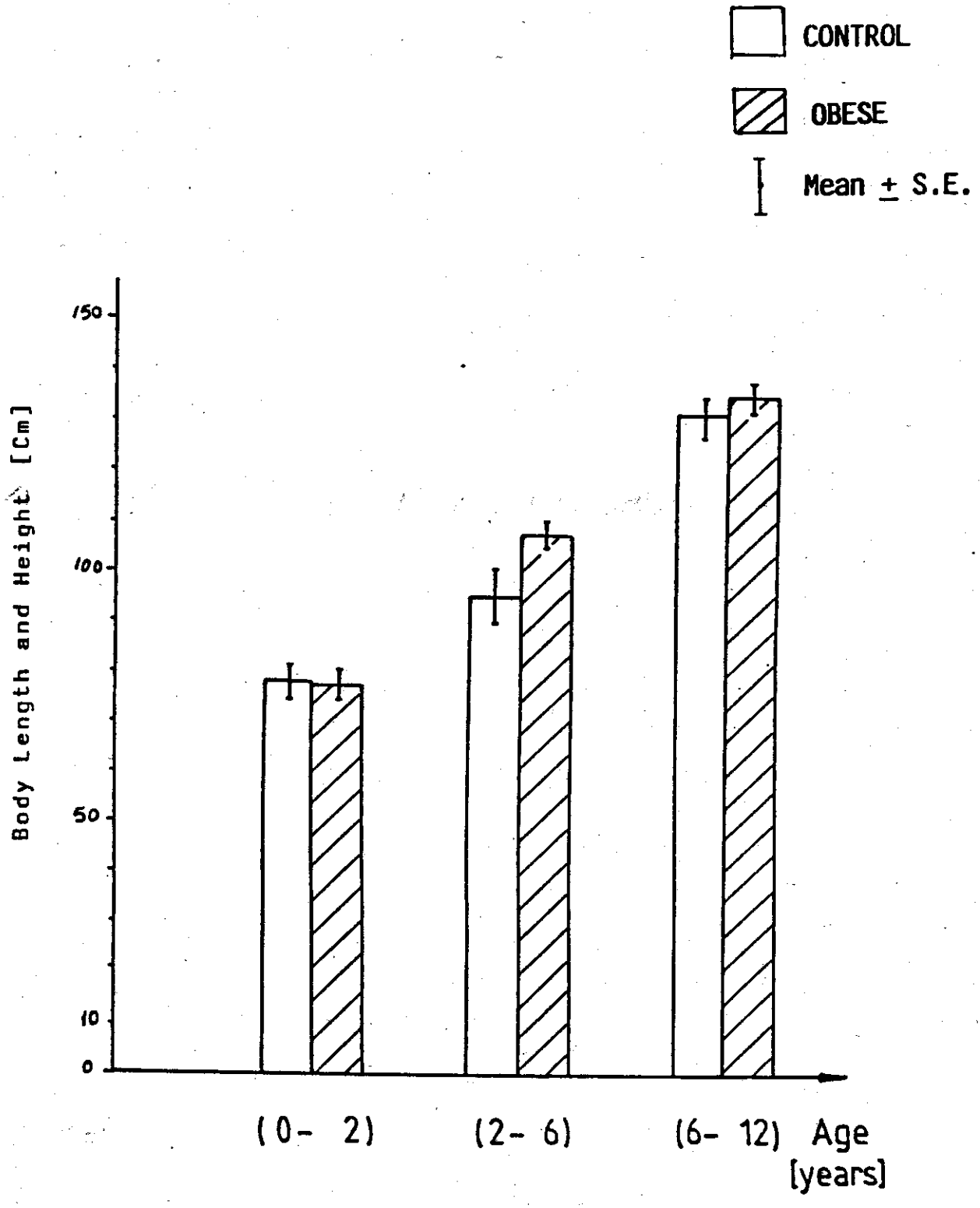

Figure (4) : Mean + SE of body length and height [cm] of studied obese and control infants and children according to age.

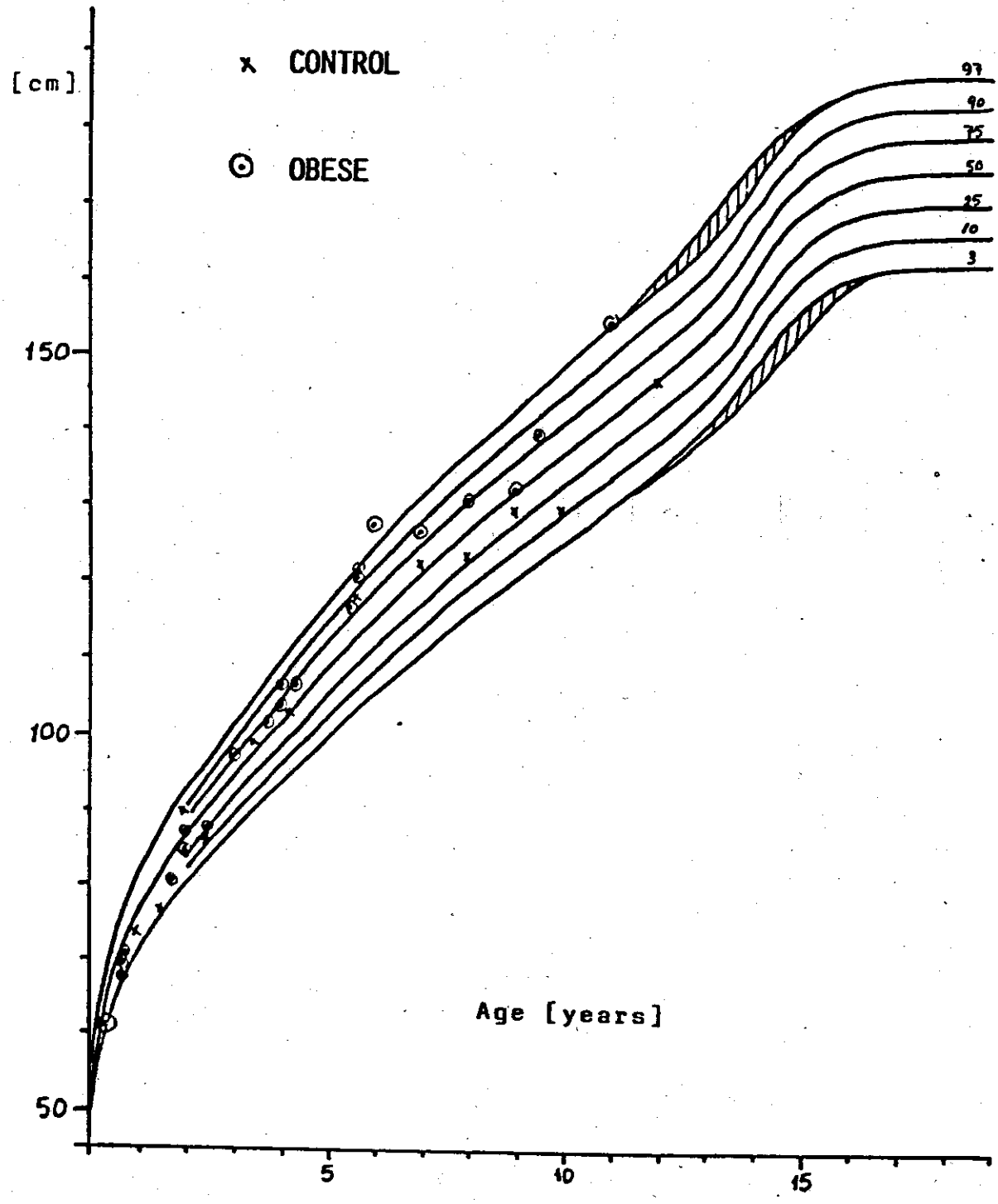

Figure (5) : Body length and height of obese and control boys distributed on growth curve of Tanner and Whitehouse (1976).

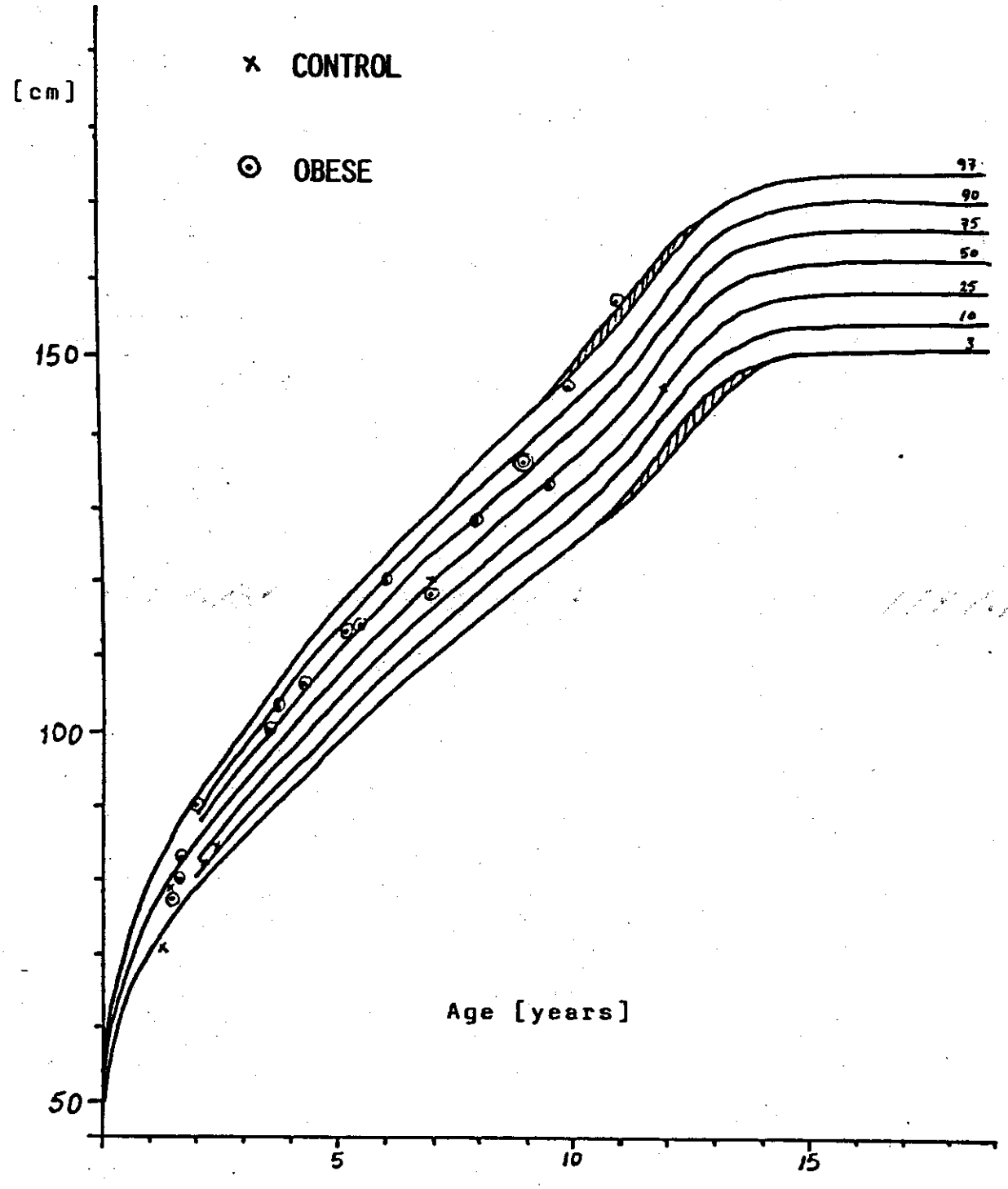

Figure (6) : Body length and height of obese and control girls distributed on growth curve of Tanner and Whitehouse (1976).

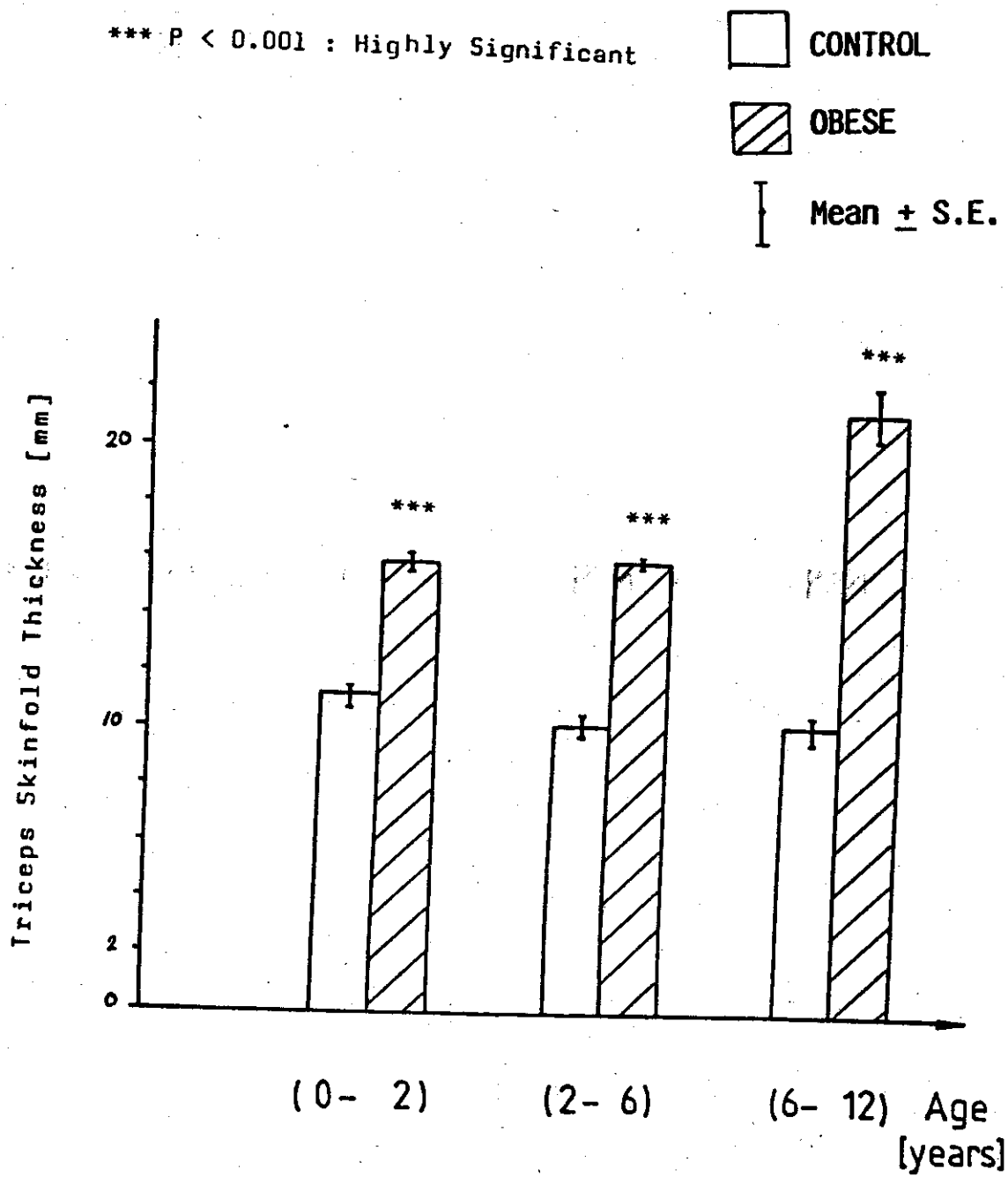

Figure (7) : Mean + SE of triceps skinfold thickness [mm] of studied obese and control infants and children according to age.

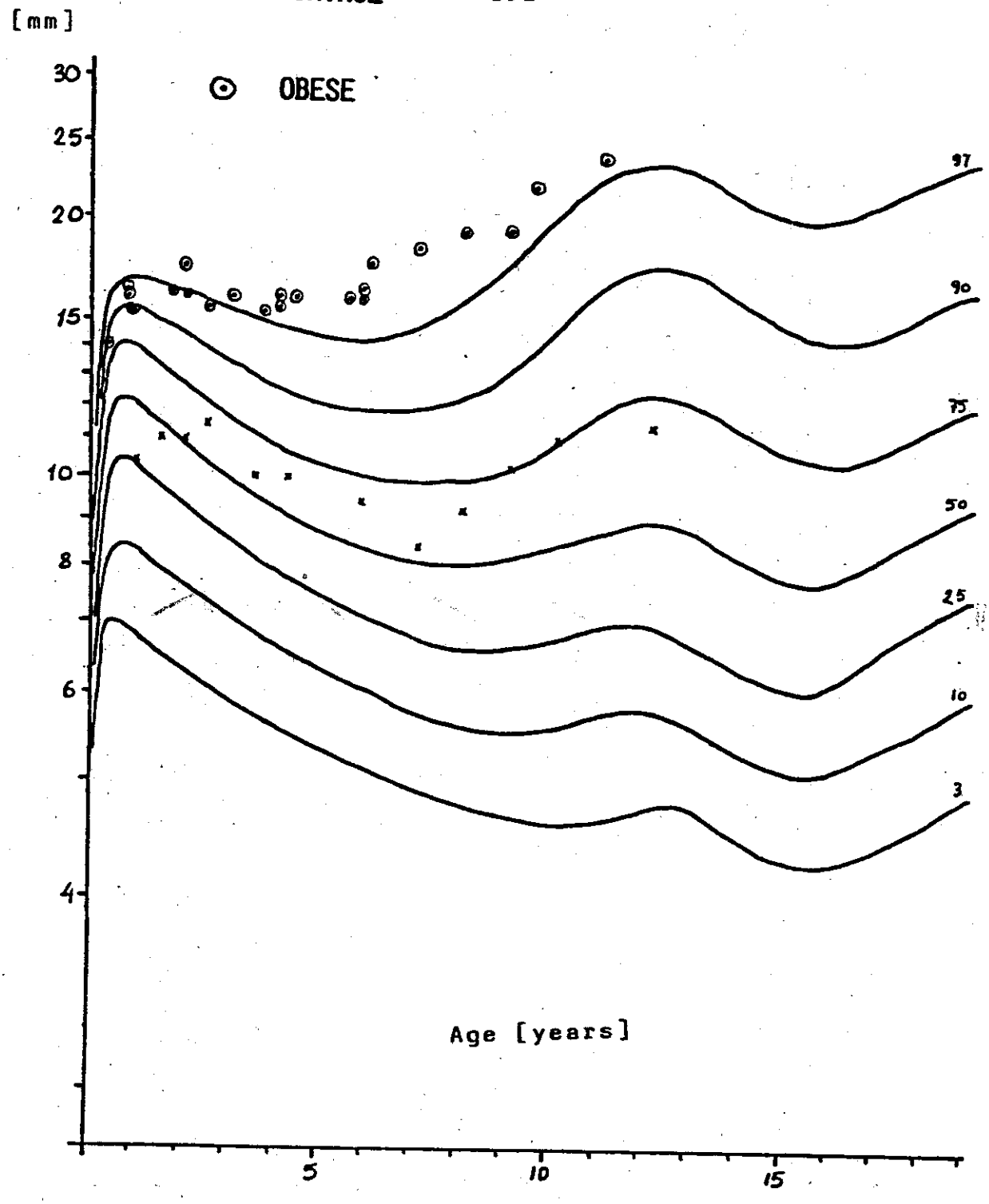

Figure (8) : Triceps skinfold thickness of obese and control boys distributed on growth curve of Tanner and Whitehouse (1975).

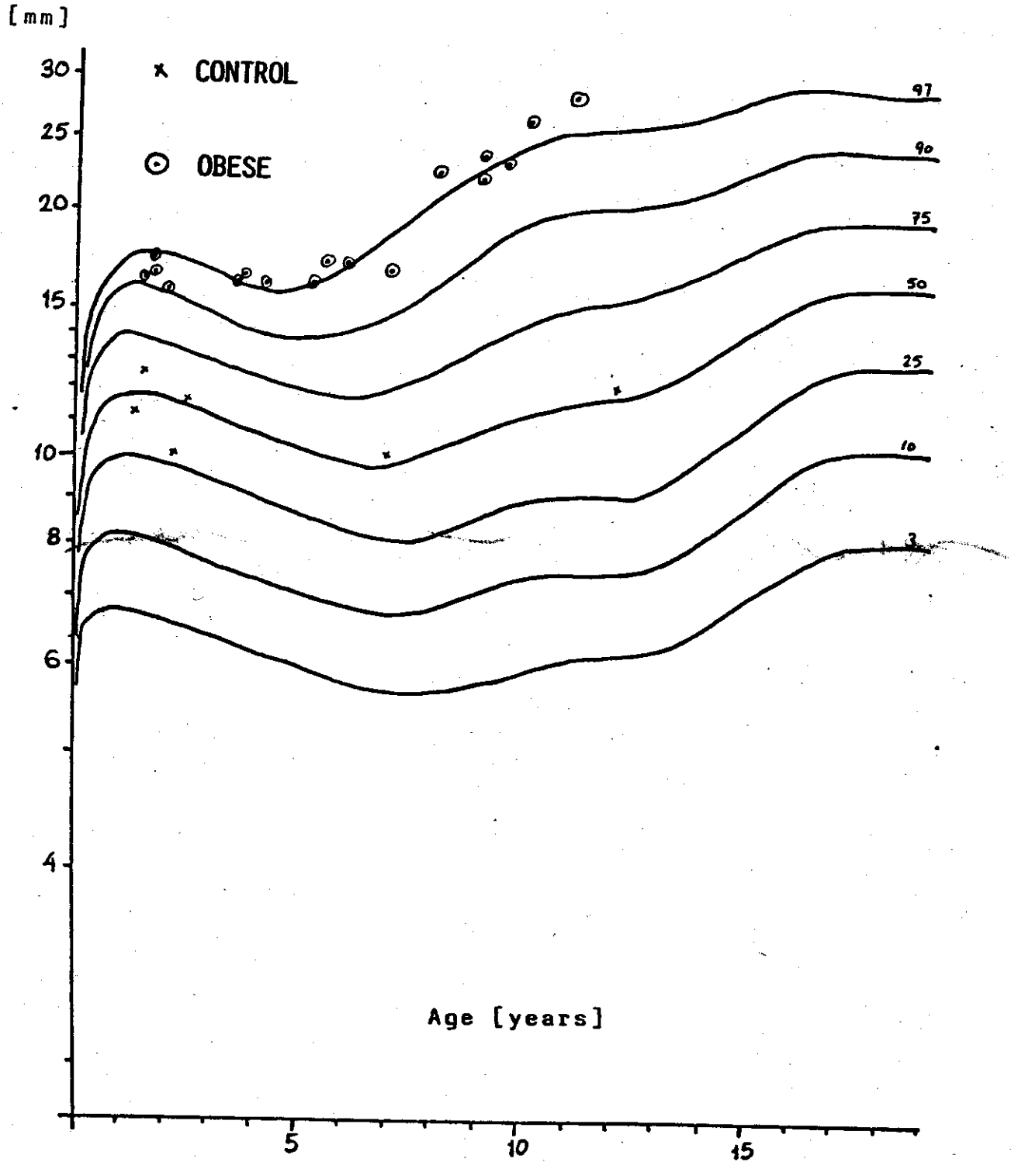

Figure (9) : Triceps skinfold thickness of obese and control girls distributed on growth curve of Tanner and Whitehouse (1975).

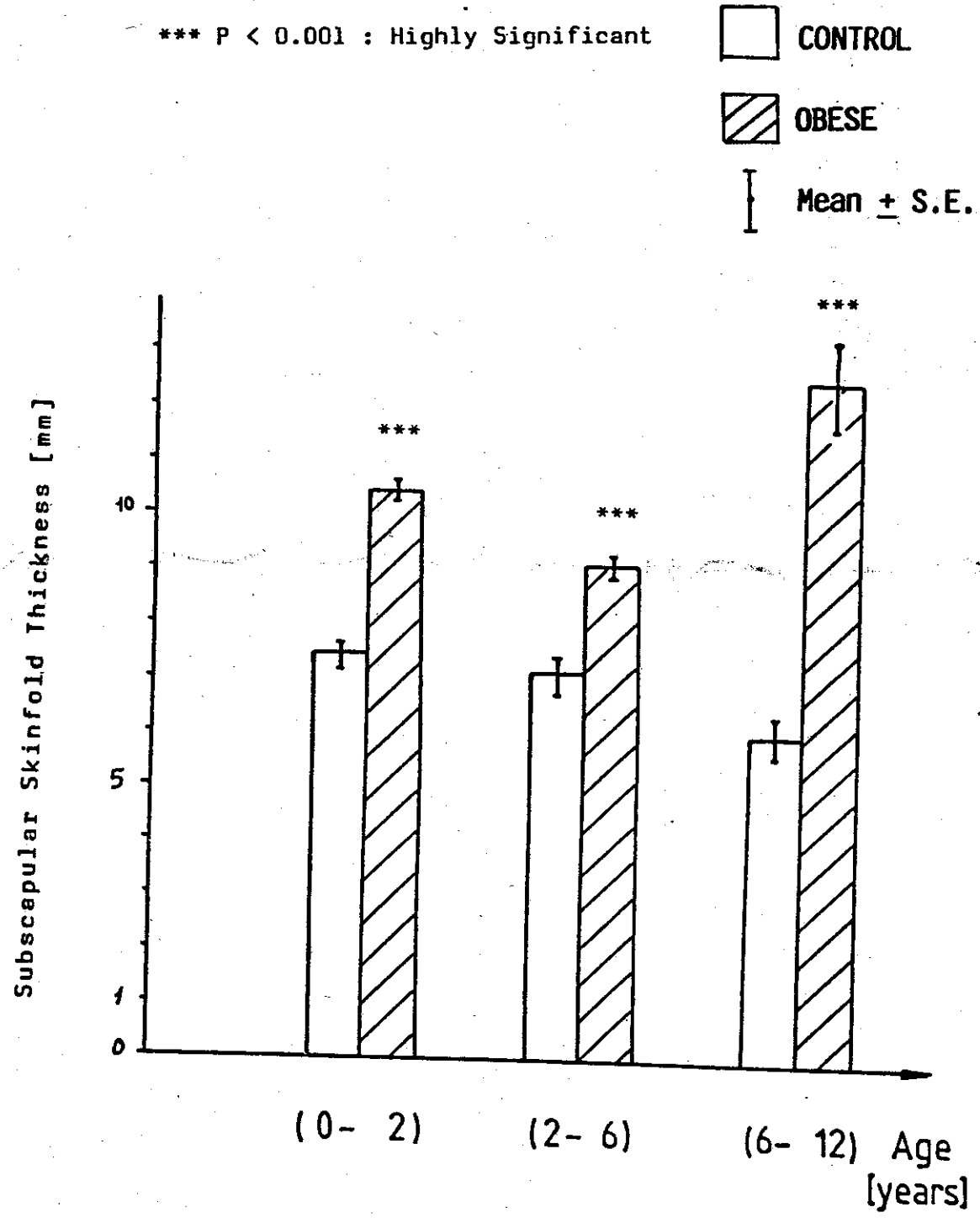

Figure (10) : Mean + SE of subscapular skinfold thickness [mm] of studied obese and control infants and children according to age.

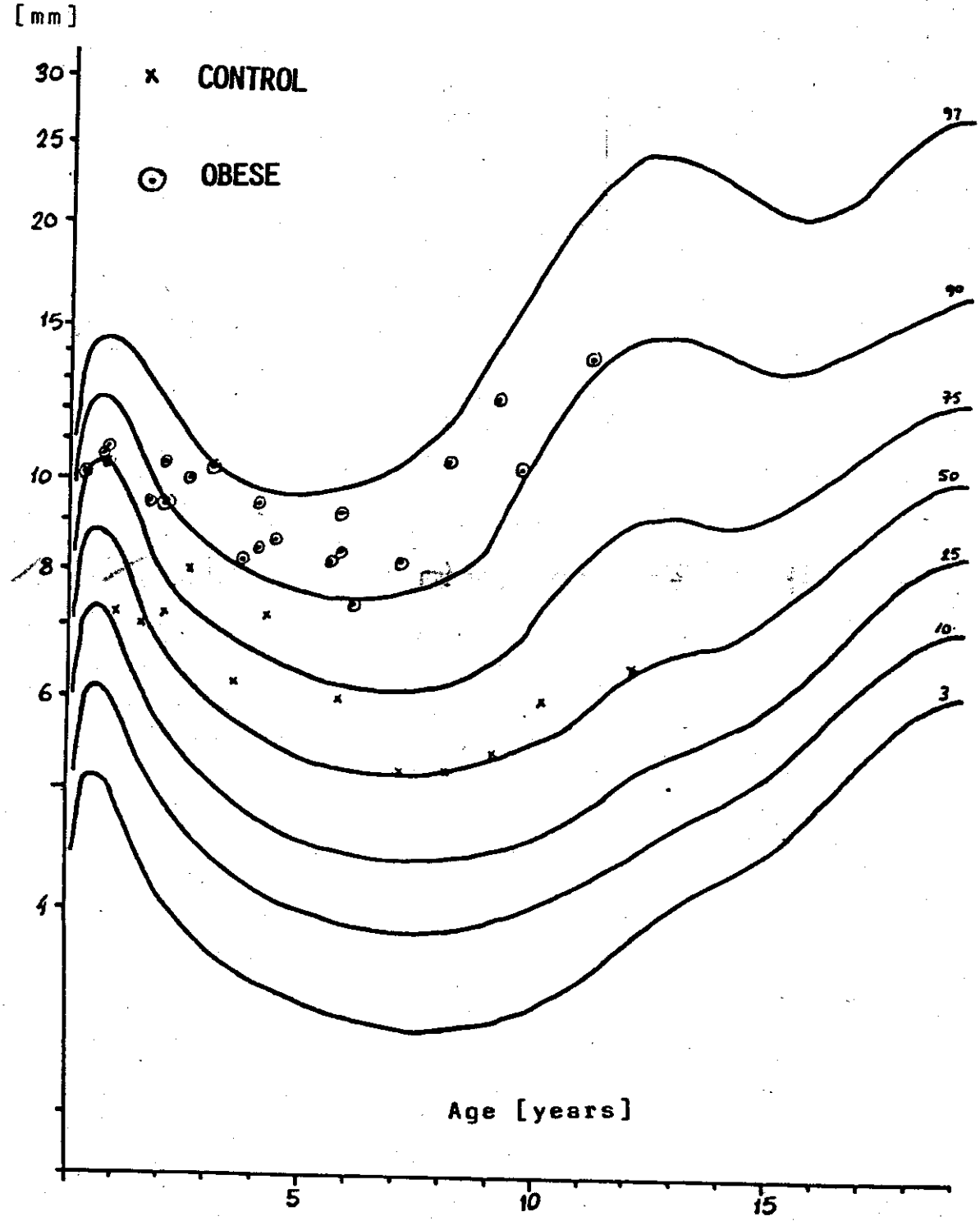

Figure (11) : Subscapular skinfold thickness of obese and control boys distributed on growth curve of Tanner and Whitehouse (1975).

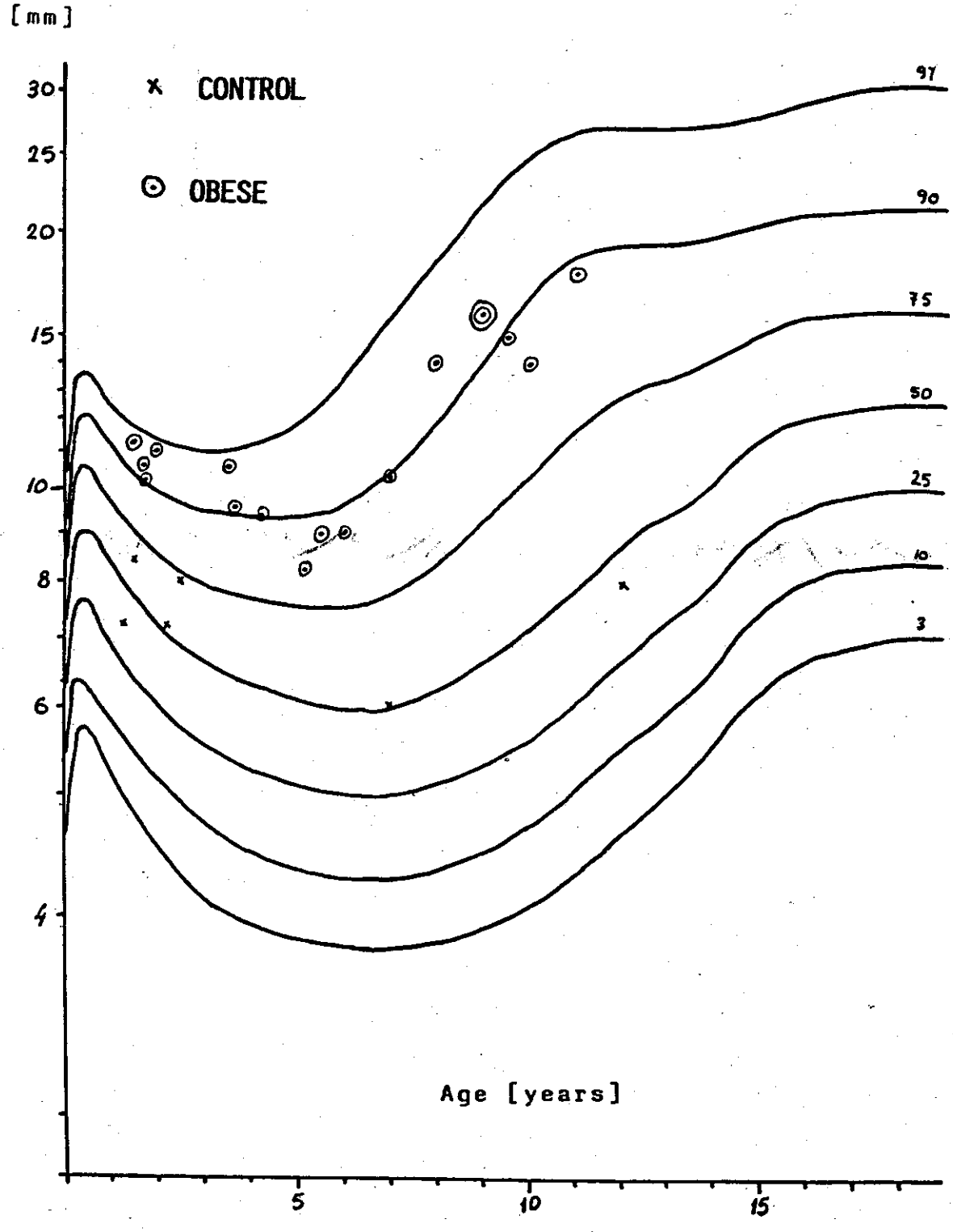

Figure (12) : Subscapular skinfold thickness of obese and control girls distributed on growth curve of Tanner and Whitehouse (1975).

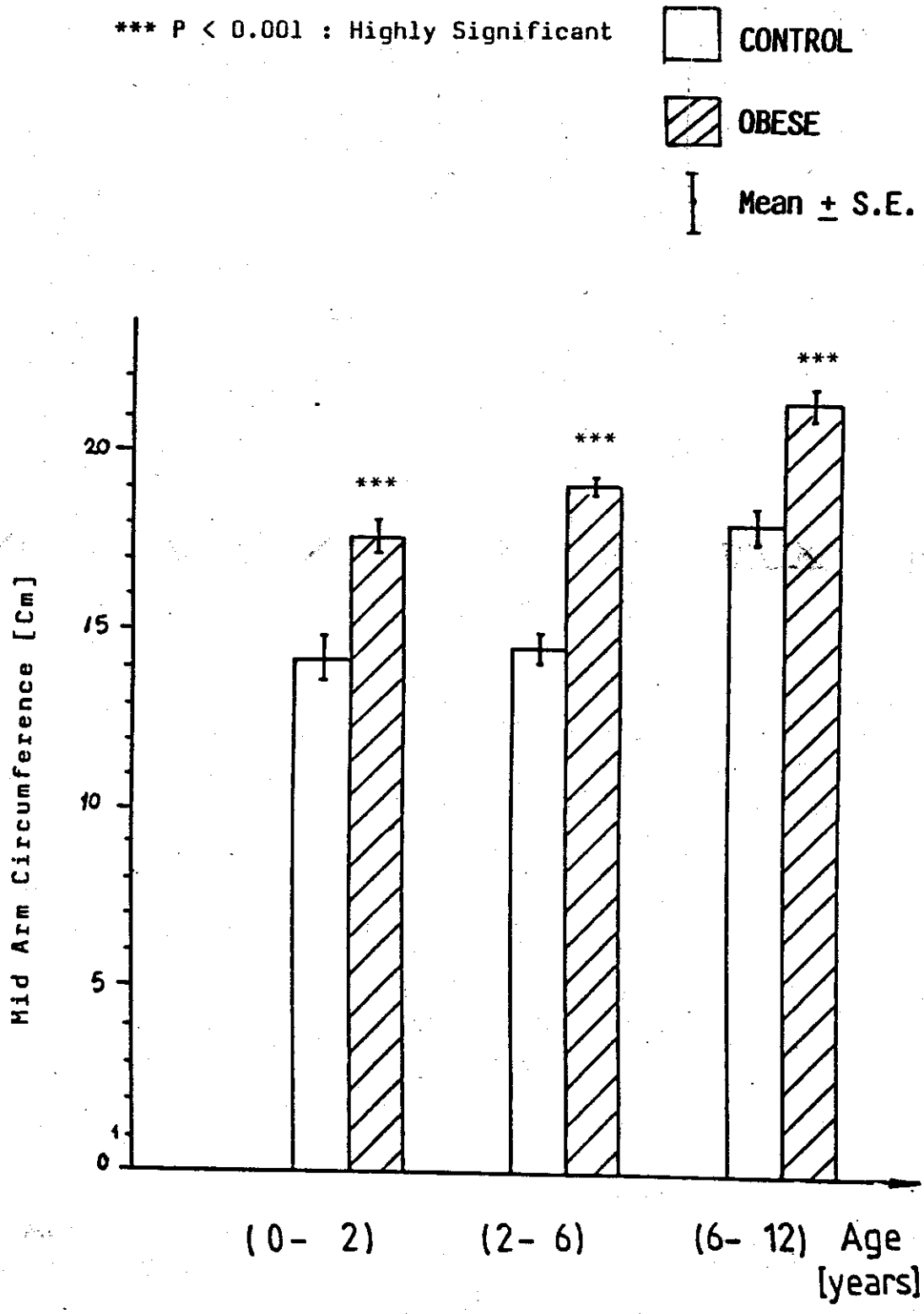

Figure (13) : Mean + SE of mid-arm circumference [cm] of studied obese and control infants and children according to age.

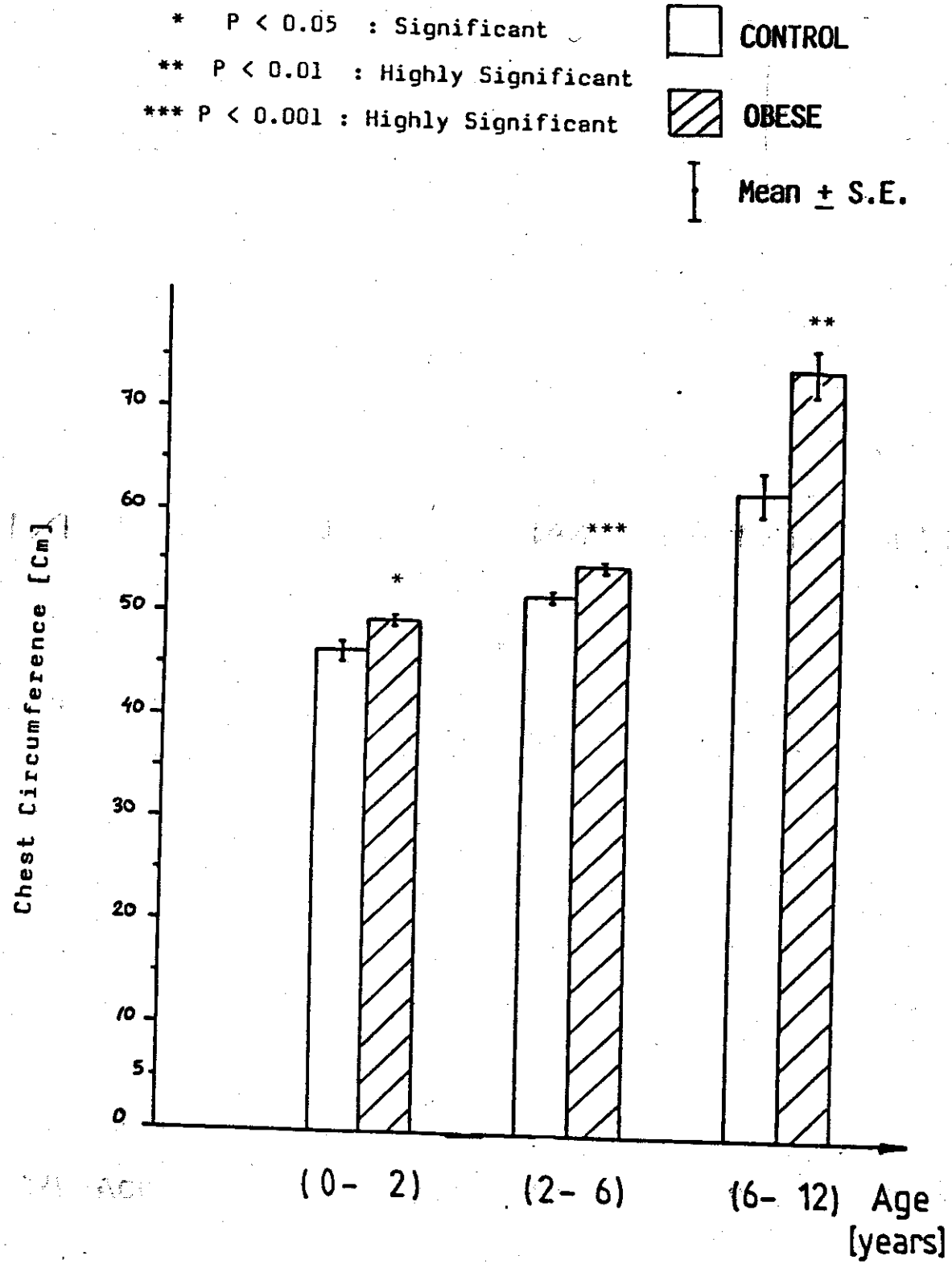

Figure (14) : Mean + SE of chest circumference [cm] of studied obese and control infants and children according to age.

*** P < 0.001 : Highly Significant

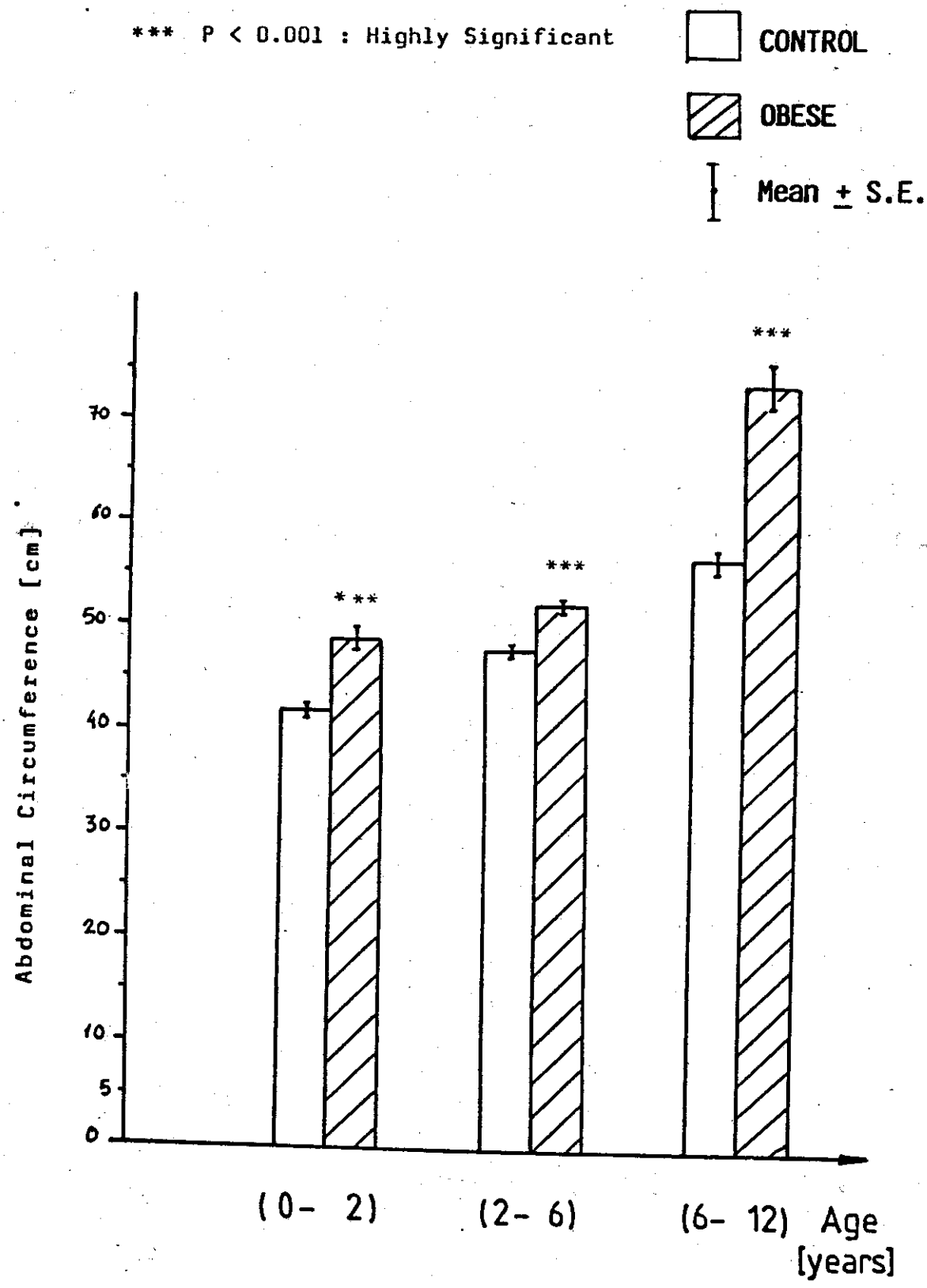

Figure (15) : Mean + SE of abdominal circumference [cm] of studied obese and control infants and children according to age.

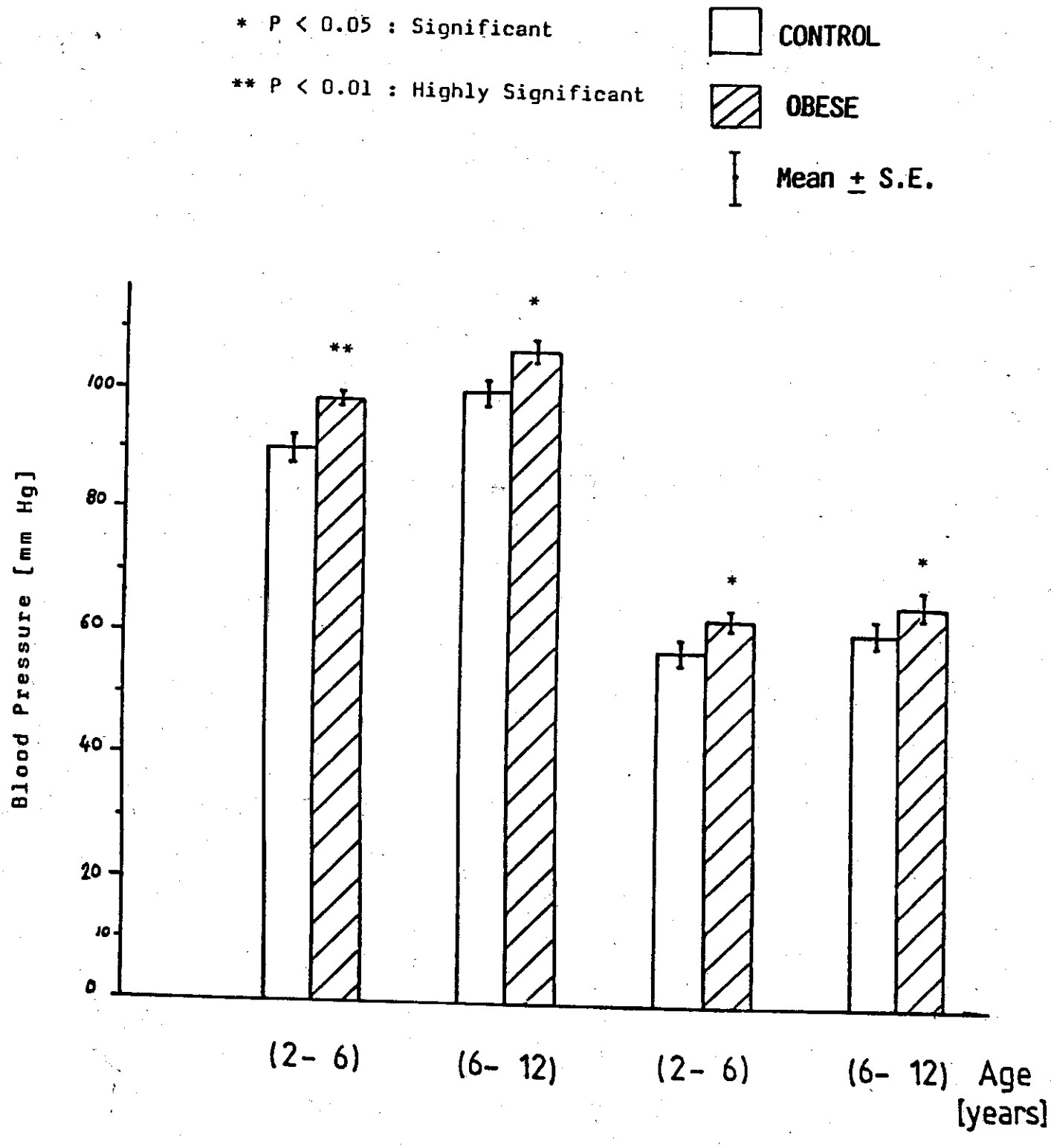

Figure (16) : Mean + SE of systolic and diastolic blood pressure [mm Hg] of studied obese and control infants and children according to age.

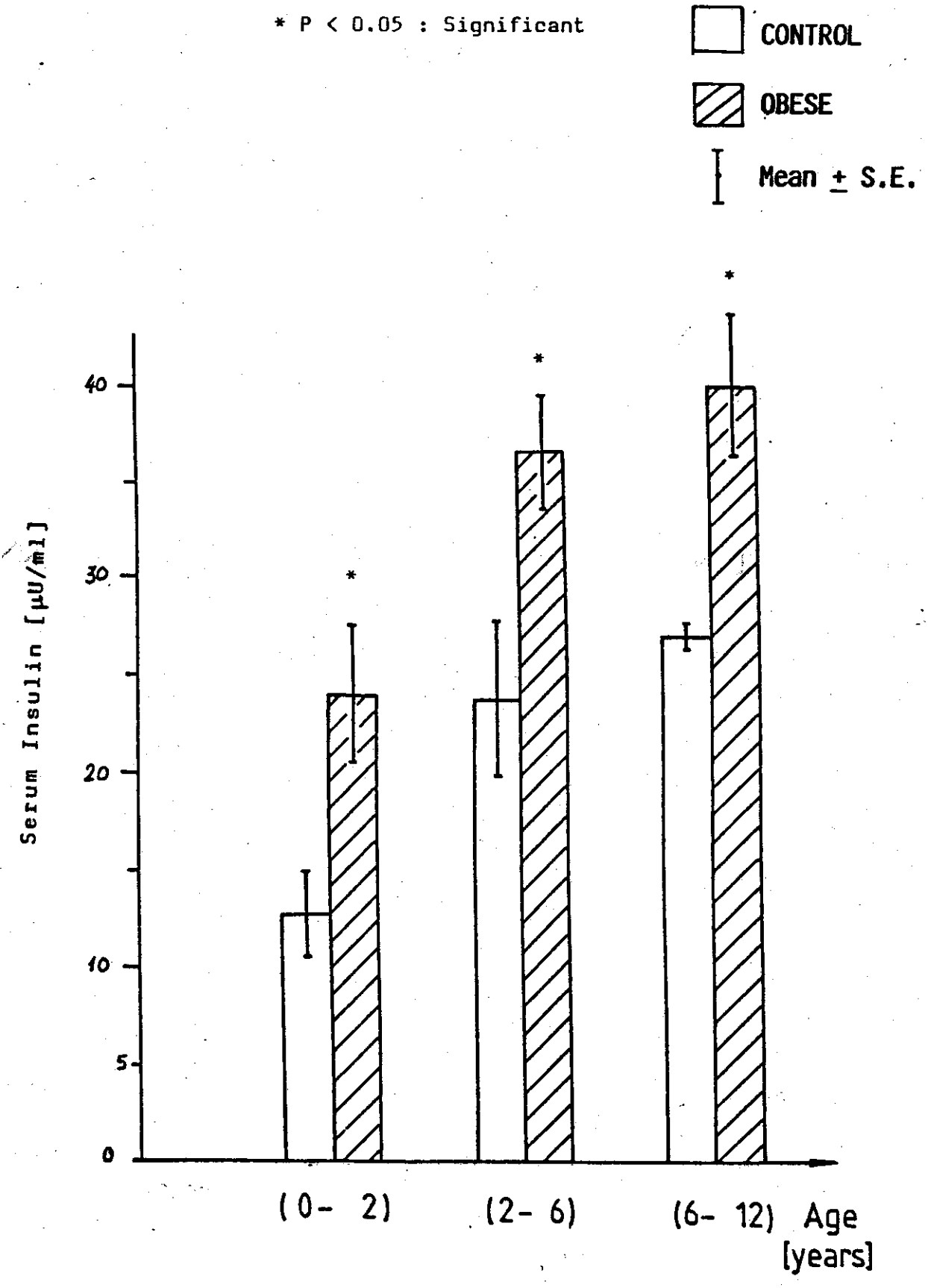

Figure (17) : Mean + SE of serum insulin levels [µU/ml] of studied obese and control infants and children according to age.

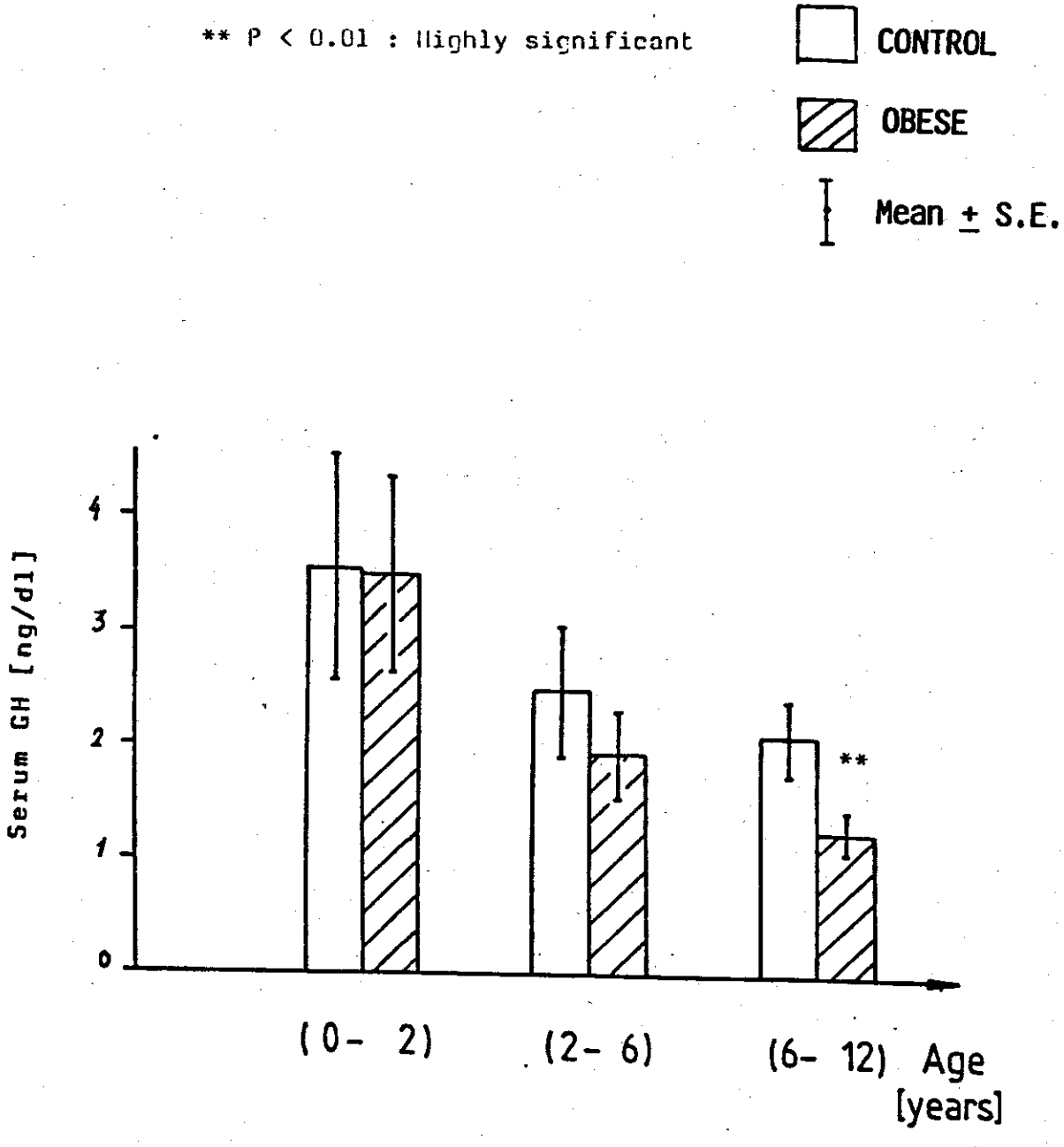

Figure (18) : Mean + SE of serum growth hormone level [ng/ml] of studied obese and cotrol infants and children according to age.

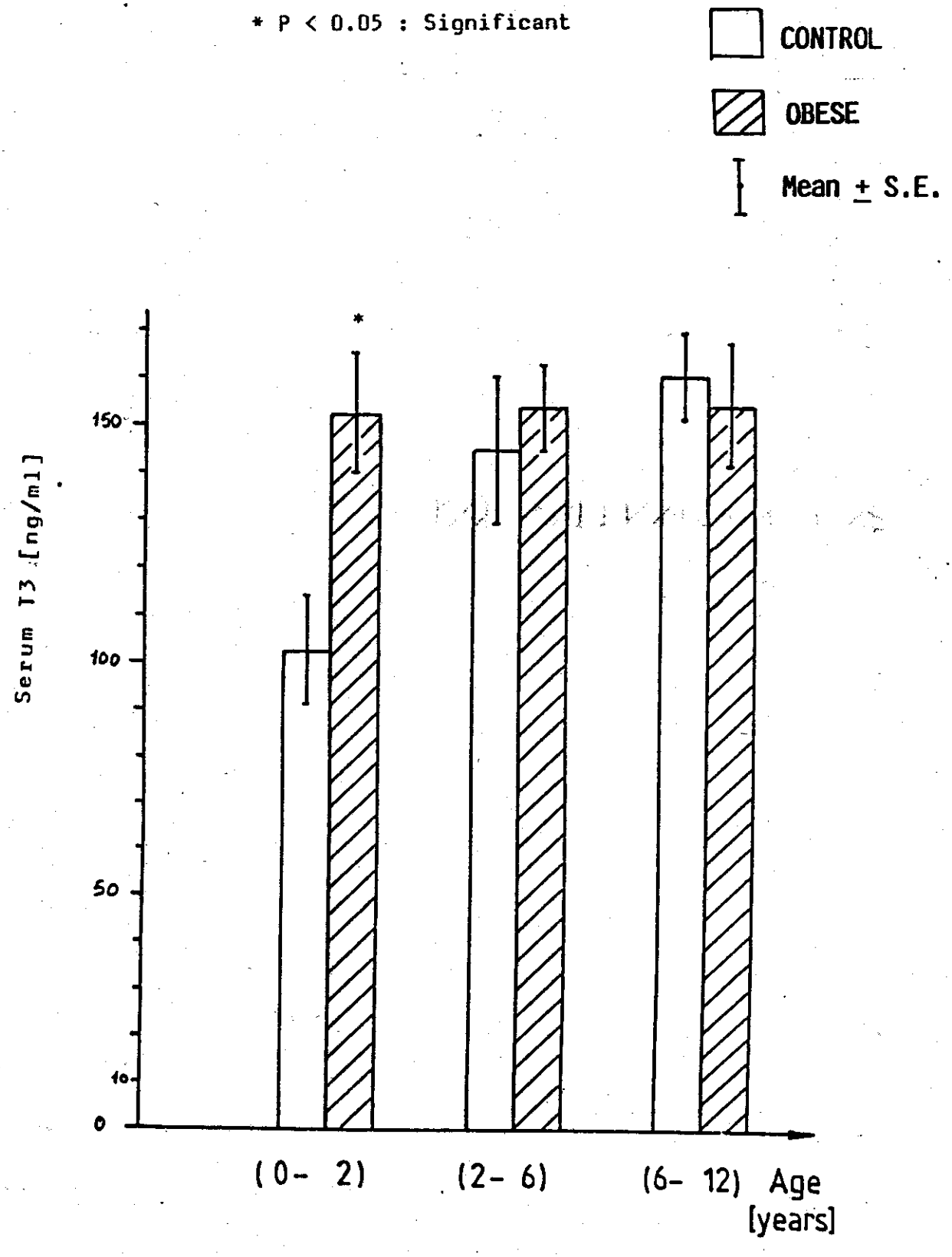

Figure (19) : Mean + SE of serum T3 levels [ng/ml] of studied obese and control infants and children according to age.

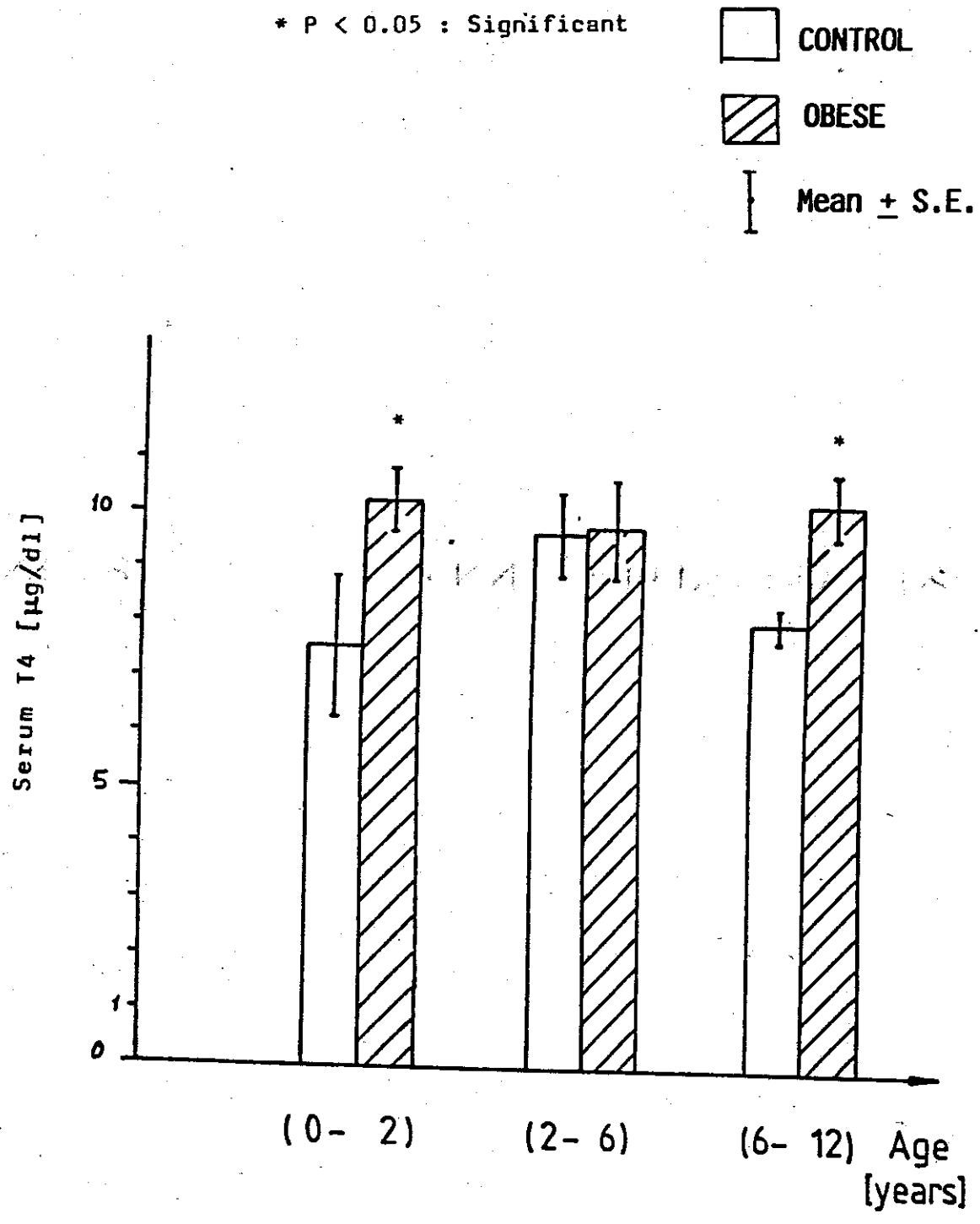

Figure (20) : Mean + SE of serum T4 levels [µg/dl] of studied obese and control infants and children according to age.

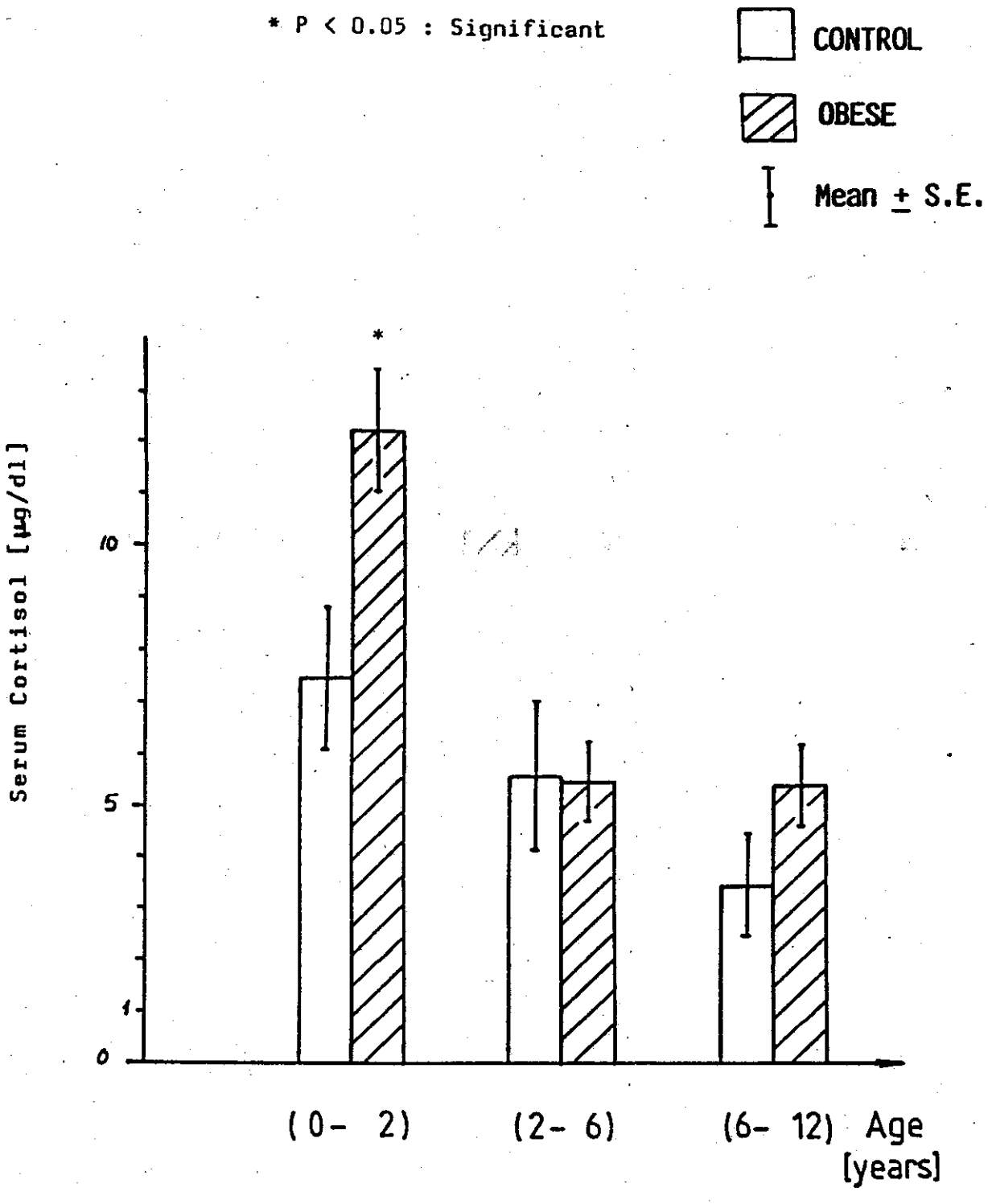

Figure (21) : Mean + SE of serum cortisol levels [µg/dl] of studied obese and control infants and children according to age.

* P < 0.025 : Significant

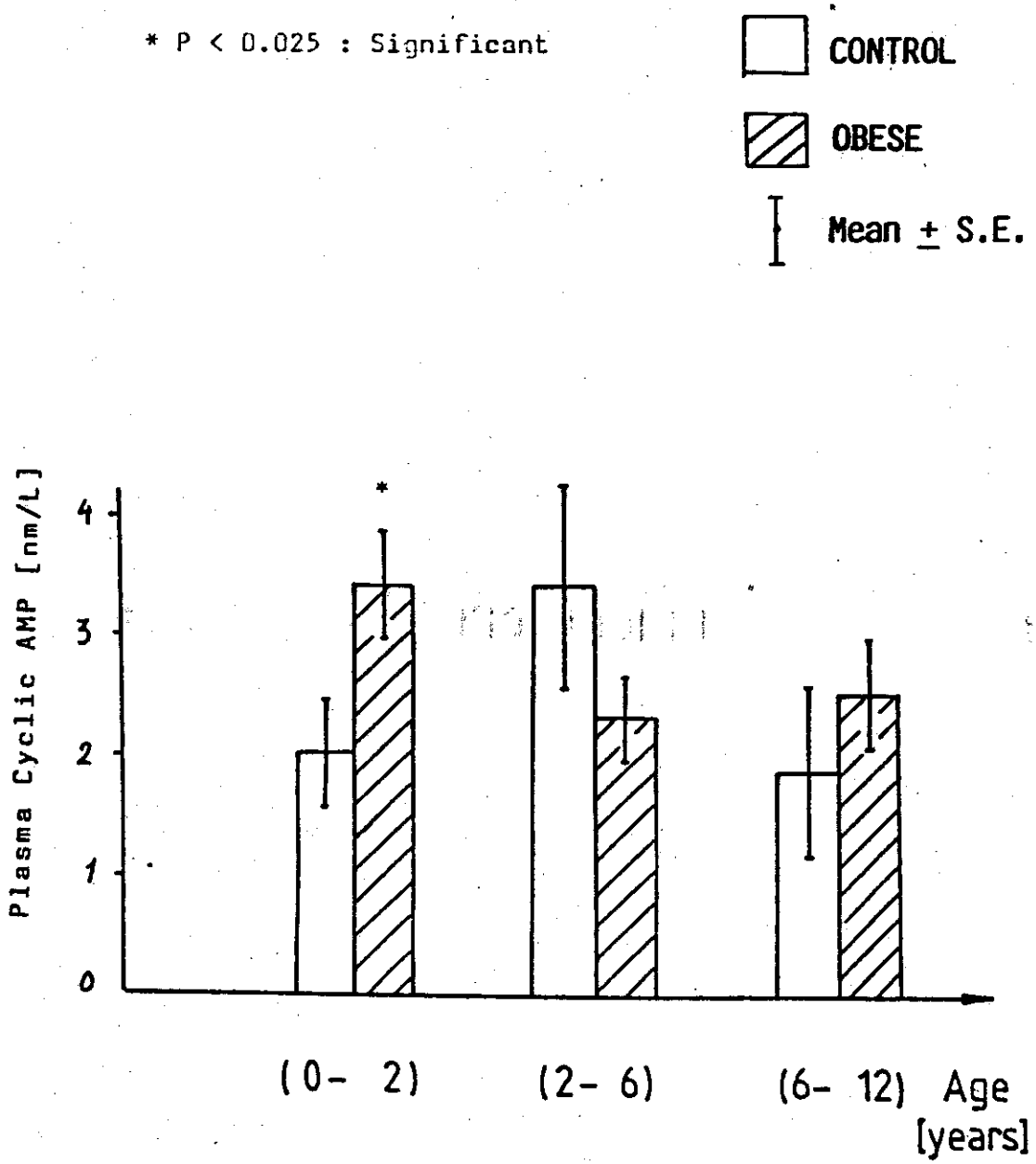

Figure (22) : Mean + SE of plasma cyclic AMP [nm/L] of studied obese and control infnats and children according to age.

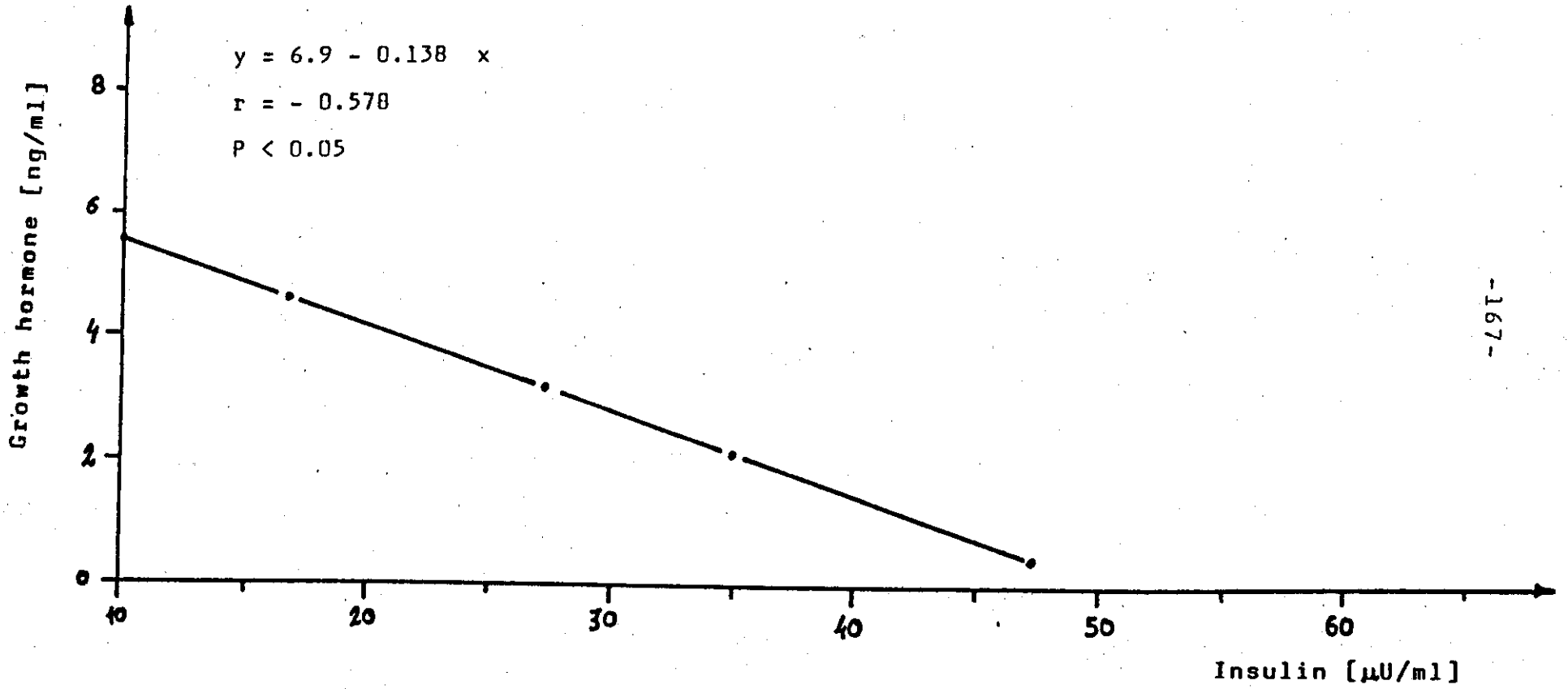

Figure (23) : The correlation coefficient between insulin and growth hormone in obese infants in age group (0-2) years.

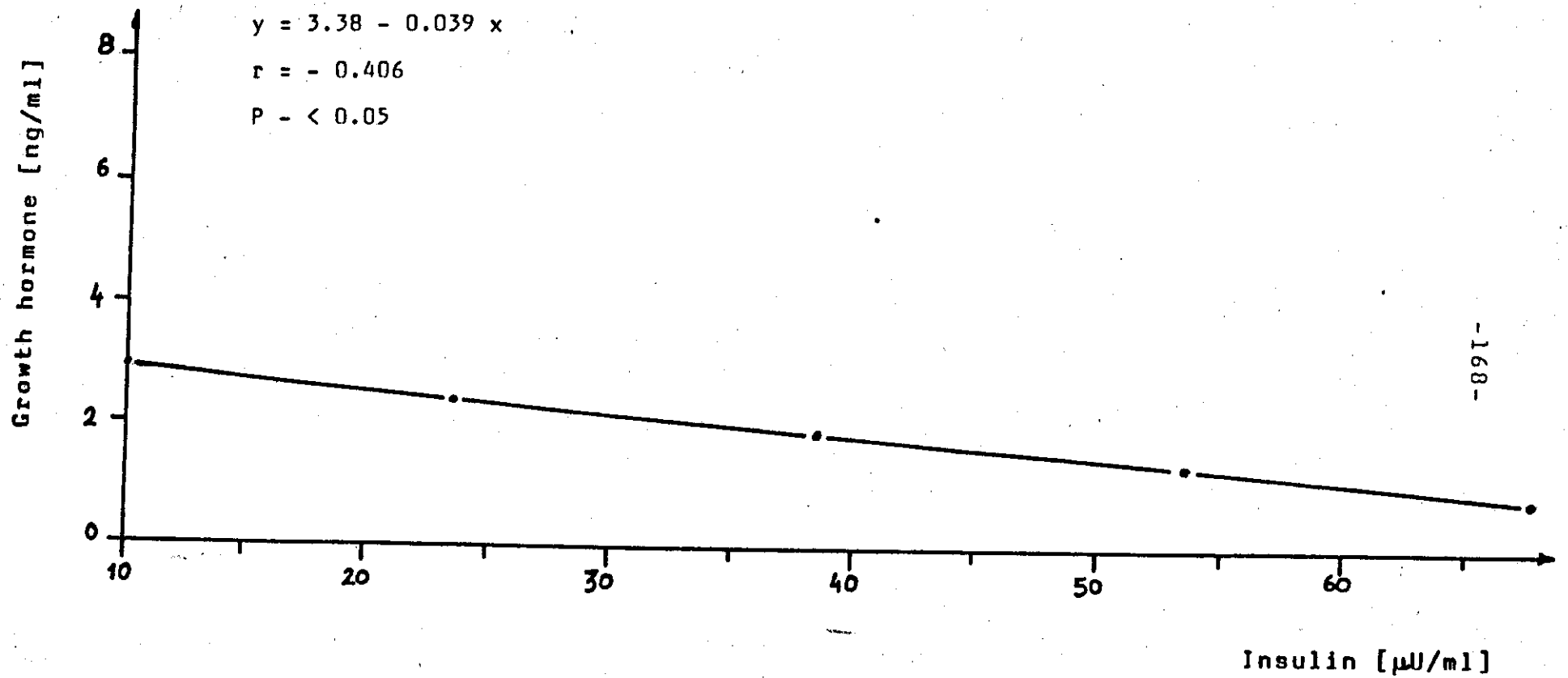

Figure (24) : The correlation coefficient between insulin and growth hormone in obese children in age group (>2-<6 years).

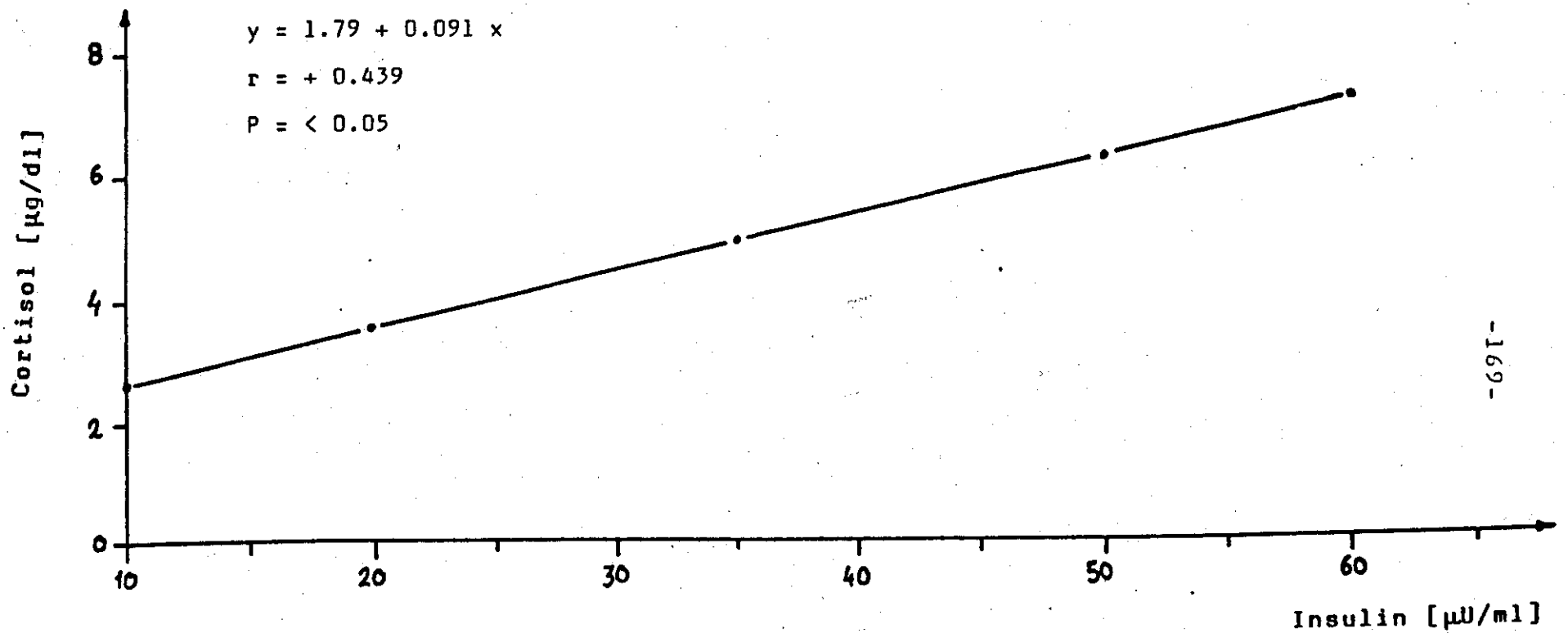

Figure (25) : The correlation coefficient between insulin and cortisol in obese children in age group (6-12 years).

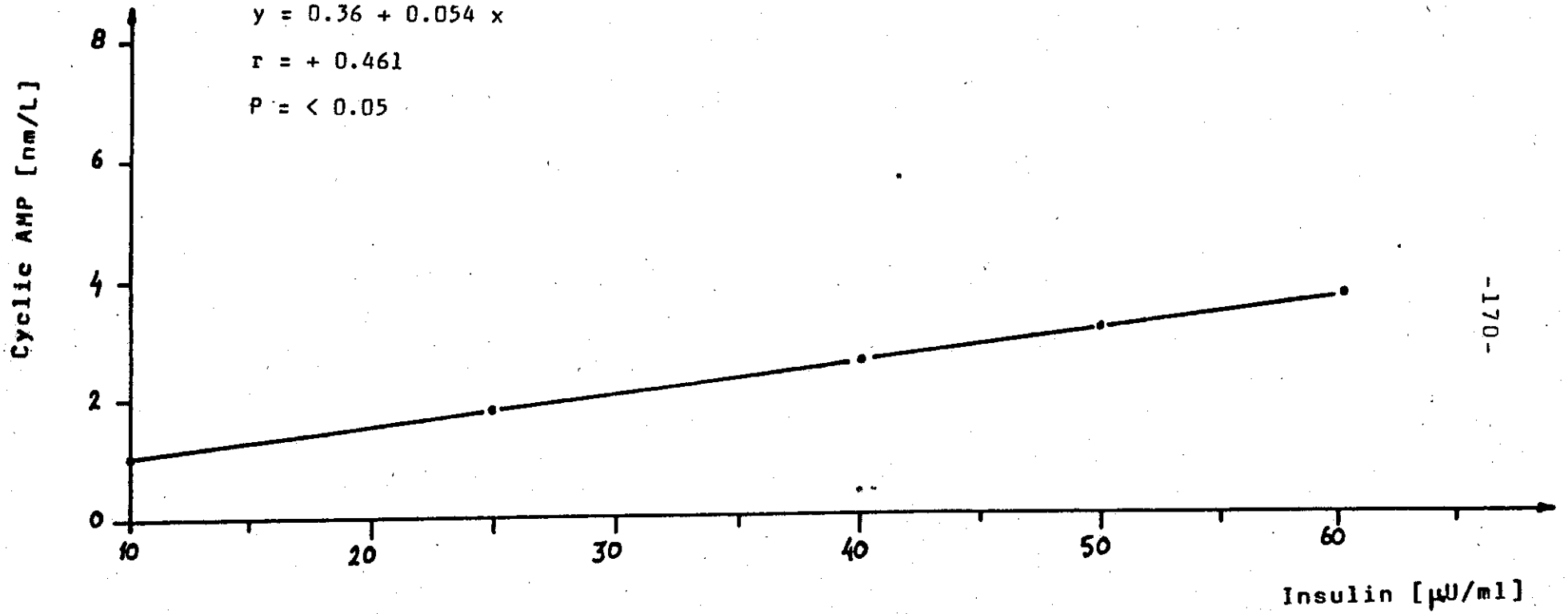

Figure (26) : The correlation coefficient between insulin and cyclic AMP in obese children in age group (6-12 years).

RESULTS

Table (1) : Shows statistical parameters of body weight (kgs) of obese and control infants and children according to age. There was a highly significant increase ($P < 0.001$) in body weight of obese infants and children in comparison to the controls in all age groups.

Table (2) : Shows statistical parameters of body length and height (cm) of obese and control infants and children according to age. There was non-significant difference ($P > 0.05$) between obese and control infants and children in all age groups in comparison to the controls.

Table (3) and Table (4) : show statistical parameters of upper and lower segments of the body (cm) of obese and control infants and children according to age. There was non-significant change ($P > 0.05$) in both upper and lower segments of obese infants and children in comparison to the controls in all age groups.

Table (5) : shows statistical parameters of triceps skin fold thickness (mm) of obese and control infants and children according to age. There was a highly significant increase ($P < 0.001$) in triceps skinfold thickness of obese infants and children in comparison to the controls in all age groups.

Table (6) : shows statistical parameters of subscapular skin fold thickness (mm) of obese and control infants and children according to age. There was a highly significant increase in subscapular skin fold thickness ($P < 0.001$) of obese infants and children in comparison to the controls in all age groups.

Table (7) : shows statistical parameters of mid-arm circumference (cm) of obese and control infants and children according to age. There was a highly significant increase ($P < 0.001$) in mid-arm circumference of obese infants and children in comparison to the controls in all age groups.

Table (8) : shows statistical parameters of chest circumference (cm) of obese and control infants and children according to age. There was a significant increase ($P < 0.05$) in chest circumference of obese infants and children in age group (0-2 years), and a highly significant increase in age groups (>2-<6) and (6-12) years ($P < 0.001$ and < 0.01) respectively in comparison to the controls.

Table (9) : shows statistical parameters of abdominal circumference (cm) of obese and control infants and children according to age. There was a highly significant increase ($P < 0.001$) in abdominal circumference of obese infants and children in comparison to the controls in all age groups.

Table (10) : shows statistical parameters of the Ponderal Index of obese and control infants and children according to age. There was a highly significant decrease ($P < 0.001$) in obese infants in age group (0-2) and (6-12) years, but non-significant change ($P > 0.2$) was obtained in age group (>2 -<6 years) in comparison to the controls.

Table (11) : shows statistical parameters of weight/height ratio. There was a highly significant increase ($P < 0.001$) in this ratio in obse infants and children in all age groups in comparison to the controls.

Table (12) : shows statistical parameters of Body Built Index. There was a highly significant increase in Body Built Index ($P < 0.001$) of obese infants and children in all age groups in comparison to the controls.

Table (13) : shows statistical parameters of Fat Index. There was a highly significant increase in Fat Index ($P < 0.001$) of obese infants and children in all age groups in comparison to the controls.

Table (14) : shows statistical parameters of systolic blood pressure (mm Hg) of obese and control infants and children according to age. There was a highly significant increase ($P < 0.01$) in systolic blood pressure of obese infants and children in age group (>2-<6 years), and a significant increase ($P<0.05$) was obtained in age group (6-12 years) in comparison to the controls.

Table (15) : shows statistical parameters of diastolic blood pressure (mm Hg) of obese and control infants and children according to age. There was a significant increase in obese infants and children ($P < 0.05$) in age groups (>2-<6) and(6-12) years in comparison to the controls.

Table (16) : shows order of birth of studied obese infants and children and percentage according to family history of obesity. Obese children with family history of obesity were 26 infants and children representing 66.66% of cases. As regards to the order of the birth of the child in his family; the 1st child represents 26.9% of cases, the 2nd child represents 46.2%, the 3rd child represents 19.2%, and the 4th child represents 25 of obese cases with family history. In children without family history the order of birth of them represents 38.5%, 23,1%, 15.4% and 15.4% respectively, and the 5th child represents 7.6% of obese cases.

Table (17) : shows statistical parameters of fasting serum insulin levels. The mean fasting leveles in obese infants and children were 24 µU/ml, 36.64 µU/ml, and

39.98 µU/ml in age groups (0-2), (>2-<6) and (6-12) years respectively. There was a significant increase in serum insulin levels (P <0.5) in all age groups in comparison to the controls.

Table (18) : shows statistical parameters of fasting serum growth hormone levels. The mean fasting levels in obese infants and children were 3.51 ng/dl, 1.943 ng/dl and 1.286 ng/dl in age groups (0-2), (>2-<6) and (6-12) years respectively. There was a highly significant decrease in serum growth hormone levels of obese infants and children in age group (6-12 years) in comparison to the controls.

Table (19) : shows statistical parameters of T3,T4 and T3/T4 ratio. The mean fasting T3 level in obese infants in age group (0-2 years) was 152.7 ng/dl, and that for T4 was 10.37 µg/dl. The mean fasting T3 level in obese children in age group (>2-<6 years) was 154.07 ng/dl, and that for T4 was 9.771 µg/dl. The mean fasting T3 level in obese children in age group (6-12 years) was 154.5 ng/dl, and that for T4 was 10.328 µg/dl. There was a significant increase (P <0.05) in T3 in age group

(0-2 years), and a significant increase (P<0.05) in T4 in age groups (0-2) and (6-12) years in obese children in comparson to the controls. As regarding T3/T4 ratio there was non-significant change (P >0.05) in the three age groups in comparison to the controls.

Table (20) : shows statistical parameters of fasting serum cortisol levels. The mean fasting levels in obese infants and children were 12.318 µg/dl, 5.518 µg/dl, and 5.426 µg/dl in age groups (0-2), (>2-<6) and (6-12) years respectevely. There was a significant increase (P <0.025) in serum cortisol in age group (0-2 years) in obese infants in comparison to the controls.

Table (21) : shows statistical parameters of fasting plasma cyclic AMP. The mean levels in obese infants and children were 3.415 nm/L, 2.365 nm/L, and 2.532 nm/L in age groups (0-2), (>2-<6), and (6-12) years respectevely. There was a significant increase (P <0,025) in plasma cyclic AMP in age group (0-2 years) in obese infants in comparison to the controls.

Table (22) : shows the correlation coefficient between insulin and growth hormone. There was - ve correlation in all age groups but a significant - ve correlation was found ($P < 0.05$) in age groups (0-2) and (>2-<6) years.

Table (23) : shows the correlation coefficient between insulin and cortisol. There was a significant + ve correlation ($P < 0.05$) in age group (6-12 years).

Table (24) : shows the correlation coefficient betwen insulin and cyclic AMP. There was a significant + ve correlation ($P < 0.05$) in age group (6-12 years).

Fig. (1) : demonstrates the mean ± standard error (SE) of body weight (kgs) of studied obese and control infants and children according to age. There was a highly significant increase in body weight of obese infants and children in all age groups in comparison to the controls.

Fig. (2) : shows the body weight of obese and control boys distributed on growth curve of Tanner and Whitehouse (1976). Weight of obese boys throughout all age groups was above the 90th percentile.

Fig. (3) : shows the body weight of obese and control girls distributed on growth curve of Tanner and Whitehouse (1976). Weight of obese girls throughout all age groups was above the 90the percentile.

Fig. (4) : Demonstrates the mean ± SE of body length and height (cm) of studied obese and control infants and children according to age. There was non-significant difference between obese and control infants and children in all age groups in comparison to the controls.

Fig. (5) : shows body length and height of obese and control boys distributed on growth curve of Tanner and Whitehouse (1976). The height of obese boys was found to be between the 25th and 97th percentiles; but only two cases were above the 97th percentile at ages 6 and 11 years.

Fig. (6) : shows body length and height of obese and control girls distributed on growth curve of Tanner and Whitehouse (1976). The height of obese girls was found to lie between the 10th and 97th percentiles except one case at age 11 years was found to lie above the 97th percentile.

Fig. (7) : Demonstrates the mean ± SE of triceps skinfold thickness (mm) of studied obese and control infants and children according to age. There was a highly significant increase in triceps skinfold thickness of obese infants and children in all age groups in comparison to the controls.

Fig. (8) : shows triceps skinfold thickness of obese and control boys distributed on growth curve of Tanner and Whitehouse (1975). Values of triceps skinfold thickness of obese boys throughout all age groups was found to be above the 90th percentile.

Fig. (9) : shows triceps skinfold thickness of obese and control girls distributed on growth curve of Tanner and Whitehouse (1975). The triceps skinfold thickness of obese grils was found to be above the 90th percentile.

Fig. (10) : Demonstrates mean ± SE of subscapular skinfold thickness (mm) of studied obese and control infants and children according to age. There was a highly significant increase in subscapular skinfold thickness of obese infants and children in comparison to the controls in all age groups.

Fig. (11) : shows subscapular skinfold thickness of obese and control boys distributed on growth curve of Tanner and Whitehouse (1975). Values of subscapular skinfold thickness of obese boys throughout all age

groups was found to be between the 85th and 97th percentiles; except three cases at ages 4, 8 and 9 months were above the 75th percentile.

Fig. (12) : shows subscapular skinfold thickness of obese and control girls distributed on growth curve of Tanner and Whitehouse (1975). Values of subscapular skinfold thickness of obese girls was found to be between the 85th and 97th percentiles.

Fig. (13) : Demonstrates mean ± SE of mid-arm circumference (cm) of studied obese and control infants and children according to age. There was a highly significant increase in mid-arm circumference of obese infants and children in all age groups in comparison to the controls.

Fig. (14) : Demonstrates mean ± SE of chest circumference (cm) of studied obese and control infants and children according to age. There was a significant increase in age group (0-2 years) and a highly significant increase in age groups (>2-<6) and (6-12) years in obese infants and children in comparison to the controls.

Fig. (15) : Demonstrates mean ± SE of abdominal circumference (cm) of studied obese and control infants and children according to age. There was a highly significant increase in obese infants and children in all age groups in comparison to the controls.

Fig. (16) : shows mean ± SE of systolic and diastolic blood pressure (mm Hg) of studied obese and control infants and children according to age. There was a highly significant increase in systolic blood pressure of obese infants and children in age group (>2-<6 years) and a significant increase in age group (6-12 years) in comparison to the control. Also, a significant increase was noticed in diastolic blood pressure of obese children in age groups (>2-<6) and (6-12) years in comparison to the controls.

Fig. (17) : shows mean ± SE of serum insulin levels (μU/ml) of studied obese and control infants and children according to age. There was a significant increase in obese infants and children in all age groups in comparison to the controls.

Fig. (18) : shows mean ± SE of serum growth hormone level (ng/ml) of studied obese and cotrol infants and children according to age. There was a highly significant decrease in growth hormone level in obese children in age group (6-12 years) in comparison to the controls.

Fig. (19) : shows mean ± SE of serum T3 levels (ng/ml) of studied obese and control infants and children according to age. There was a significant increase in T3 in age group (0-2 years) in obese infants in comparison to the controld.

Fig. (20) : shows mean ± SE of serum T4 levels (µg/dl) of studied obese and control infants and children according to age. There was a significant increase in T4 in age groups (0-2) and (6-12) years in obese infants and children in comparison to the controls.

Fig. (21) : shows mean ± SE of serum cortisol levels (µg/dl) of studied obese and control infants and children according to age. There was a significant

increase in serum cortisol in obese infants in age group (0-2 years) in comparison to the controls.

Fig. (22) : Shows mean ± SE of plasma cyclic AMP (nm/L) of studied obese and control infnats and children according to age. There was a significant increase in plasma cyclic AMP in obese infants in age group (0-2 years) in comparison to the controls.

Fig. (23) : Demonstrates the correlation coefficient between insulin and growth hormone in obese infants in age group (0-2) years. The figure revealed a significant -ve correlation.

Fig. (24) : Demonstrates the correlation coefficient between insulin and growth hormone in obese children in age group (>2-<6 years). The figure revealed a significant -ve correlation.

Fig. (25) : shows the correlation coefficient between insulin and cortisol in obese children in age group (6-12 years). There was a significant +ve correlation.

Fig. (26) : shows the correlation coefficient between insulin and cyclic AMP in obese children in age group (6-12 years). There was a significant +ve correlation.