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The Clinical Relevance of Serum Luteinizing hormone and Sexual Activity in the Ageing Male

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Abstract

As man ages, many physiological changes occur in his body systems and functions. One of the most important functions to show changes with aging is man's sexuality.

The decline in sexual responsiveness that affects the aging male is certainly paralleled by his endocrine change. A variety of studies has reported that LH reises. Recent data have failed to show any change in LH levels in selected groups of aging men.

The aim of the work was to correlate sexual activity in the elderly to their LH.

To achieve this, 70 married elderly male subjects above 50 years of age were chosen to be mentally and physically normal. 50 of them had sexual troubles, of those 50, 12 had erectile troubles only as the main complaint and 38 had both erectile and desire disorders. Those 50 sexually complaining subjects served as case for this study. The other 20 subjects were selected to be sexually not complaining and served as the control of this study.

In order to assure the physical and mental fitness of cases to our study, all had been subjected to thorough history, sexual, psychological, medical, family and past history, full medical examination to all body systems, including measurements of penile systolic blood pressure of the dorsal arteries of penis using Doppler ultrasound. Routine investigations were done to all subjects in this study including urine and stool analysis, complete blood picture and fasting blood sugar level.

An early morning blood sample was taken to estimate the hormonal level of LH using radio-immunoassay kits and gamma counter.

The results of this study showed that serum LH have shown a rise in cases more than in the control subjects. Also, the rise in serum LH was evident between the different age groups of cases.

There was also no change in LH with age in cases who were complaining of desire disorders alone. At the same time LH hormones showed no change in the group complaining of both desire and erectile troubles. On the other hand, serum LH has shown a rise after the third year of complaint this study; clear is the fact that hormonal change is not the major determining factor in this sexual disturbance. Here rises an important question; is there any place for prescribing hormonal treatment for elderly male subjects who complain of sexual troubles? In spite there is an agreement about the serum LH rises with age. We think that there is no need to prescribe hormonal treatment to elderly subjects with sexual troubles except for a subgroup of older men who have serum testosterone level below the lower limit of normal and those with disturbed libido.

The role of sex hormones in human sexuality, in the mechanism of erection and in the pathogenesis of impotence has not yet been established. Several studies have shown that ageing in men is associated with decrease in sexual interest and behavior and with an increased prevalence of erectile disorders [1-16].

Luteinizing hormone is necessary to sustain sexual drive and behavior [2-24].

Androgen deficiency may play a subsidiary role in many cases of ED in the elderly. In addition to a non-hormonal cause, e.g. atherosclerosis or polyneuropathy [26].

LH is a type of glycoprotein that is produced in the anterior pituitary via gonadotrophine cells and serves to regulate the function of the gonads. In males LH stimulates the production and secretion of testosterone from the testes via leydig cells. In females Theca interna cells express receptors for luteinizing hormone (LH) to produce androstenedione, which via a few steps, gives the granulosa the precursor for estrogen manufacturing. Concentrations of LH increase during ovulation and with the formation of the corpora lutea with progesterone secretion. The secretion of LH is regulated via the secretion of GnRH.

Although alterations of circulating sex steroids have been reported in aging men, it is not known to what extent reported changes may represent effects of variables other than aging.

For the term "male menopause" is inappropriate as it suggests a sudden drop in sex hormones such as occurs in women as per menopausal state [2-20].

Earlier this century the term "male climacteric" (from the Greek klimacter—the rung of a ladder) was used and is more appropriate as it suggests a decline and not a precipitous drop in hormones concentrations. A landmark paper of 1944 accurately described symptoms, reversed by testosterone replacement but not by placebo, seen in men suffering from an age associated decline in testosterone concentrations.

Abnormally low concentration of testosterone (hypotestosteronaemia) may occur because of testicular dysfunction (primary hypogonadism) or hypothalamic-pituitary dysfunction (secondary hypogonadism) and may be congenital or acquired.

In the ageing man a dysfunction in hypothalamic- pituitary homeostatic control, or both, leading to abnormally low secretion of luteinizing hormone with resultant low testosterone production.

With age there is a loss of hypothalamo-pituitary circadian rhythm, which may result in exaggerated falls in plasma testosterone concentrations by evening.

Greater understanding of the evolution of the hypothalamo–pituitary–testicular axis with aging is of vital importance both scientifically, in elucidating the physiology of reproductive capacity, and clinically, in assessing, e.g., a loss of libido or decreased reproductive performance. In recent years, there has been considerable study of luteinizing hormone (LH) and testosterone (T) serum concentration time-series in both younger and older males to develop such understanding, and to determine whether a hypothesized male climacteric (or so-called andropause) at least partially analogous to menopause in the female exists, Furthermore, the precise neuroendocrine mechanisms that underlie such age-related changes remain largely unresolved.

Keywords: *Hypotestosteronaemia; Menopause; Androstenedione; Testosterone*

Aim of study

The aim of our research was to study sexual activity in old age and its relation to serum luteinizing hormone.

Materials and Methods

The material of this work included seventy (70) married male subjects all above fifty (50) years old. The study started from January 2013 to may 2015 in Crimean Medical Academy named after S.I. Georgievsky Crimean Federal University named after V.I. Vernadsk Russia in department of dermatology and reproductive and beauty. They were divided into two groups:

Group I: The Study Group

Fifty males, all were looking apparently healthy, mentally and physically; and were receiving no medications served as the study group. They were complaining of sexual troubles as desire disorders and/or potency disorders.

Group II: The Control Group

Twenty apparently normal males with normal sexual life served as the control of this study. All cases in this study were subjected to Detailed History taking Personal.

i. Sexual history Information sought during taking of the sexual history was as follows: Onset of sexual dysfunction (gradual or acute). Nature of the sexual dysfunction (desire disorders or erectile troubles) - Duration of the sexual dysfunction The nature of erectile troubles "failure to obtain or to maintain erection" Current level of sexual functioning Libido (desire/drive—satisfaction/pleasure-fantasies thoughts) Sexual partner (S) Orgasms Ejaculation (ante grade, retrograde, absent, premature) The presence or absence of a good quality morning erection or a spontaneous nocturnal erection.

Collection of specimens

An early morning blood sample was taken from each elder. Serum was separated by centrifugation and was collected by a micropipette to be placed in test tubes and storedin a deep freezer at -20°C.

Ethical consideration

Written consents were obtained from all patients before the study. The steps were explained to all patients. The local ethics committee had approved all procedures. Ethical approval for this study Dermatology Department and reproductive and beauty Crimean Medical Academy named after S.I. Georgievsky Crimean Federal University named after V.I. Vernadsk Russia

Statistical analysis

The statistical tests were run on a compatible personal computer using the Statistical Package for Social Scientists (SPSS) for windows 15. Chi-square distribution was used for studying the frequencies of recurrence, pain, hospital stay and postoperative complications. The values were expressed as means ± standard errors of deviation. The mean values of the groups were compared by one-way analysis of variance (ANOVA) and paired comparisons of the groups were done using the paired student t test. $P < 0.05$ was considered significant.

Results of Clinical Study

A. Results of history taking

I. Results of sexual history

The main task was to separate cases of purely psychological origin of the complaint from those with primarily organic determinants. Subjects who fulfilled the following data were excluded from the study as having a psychological background of their problems.

a. Those that had episodic impairment of their sexual function
b. Those that was sexually good with a partner and bad with another
c. Those who could masturbate but could not participate in coitus
d. Those that had good erection during sleep or upon awakening but could not get such an erection in coitus
e. Those that had bad events in life when the dysfunction initially appeared
f. Those who had data pointing to a psychiatric disease as disturbed sleep rhythm, personality disorders, behavioral disorders, etc or those who were under psychiatric therapy.

ii. Results of medical and past history

Subjects who had a history of drug abuse or alcohol intake, those who were under medical treatment of a chronic disease such as cardiovascular, chest, joint diseases, those who had previous pelvic operations or injuries, those who had a history of endocrine or neurological diseases and those who were diabetic, all were excluded from the study.

B. Results of Examination:

i.General examination

Subjects with hypertension, irregular pulse or respiration, obesity, gynecomastia or feminine hair distribution were excluded from the study.

ii. Genital examination

Those who had an obvious deformity of the penis, abnormal size or consistency of testes,

Indurated plaques on penis or an abnormality of the prostate on PR were excluded from the study.

iii. Musculoskeletal system

Those who had any abnormality in muscles, bones or joints were excluded.

iv. Cardiorespiratory examination

Those that had any sign of poor peripheral circulation were excluded from this study. - Subjects with dorsal penile systolic pressure ratio less than 0.8 were excluded. Table 1 shows the penile brachial index of cases chosen which was equal to 0.8 or more.

NO.	AGE IN YEARS	PBI	NO.	AGE IN YEARS	PBI
1	54	0.9166	26	69	0.875
2	65	1	27	77	0.8235
3	57	0.9230	28	68	0.8823
4	60	0.8235	29	50	1
5	63	1	30	57	0.9285
6	65	0.8641	31	78	0.9411
7	60	0.8461	32	60	0.8666
8	63	0.8571	33	55	1
9	53	0.8333	34	73	0.875
10	54	1	35	62	0.9285
11	56	0.8	36	72	0.8181
12	58	0.9166	37	63	0.9166
13	55	0.9230	38	50	1
14	55	0.8571	39	64	0.8461
15	54	0.9160	40	62	0.9285
16	65	0.9160	41	72	0.9285
17	77	1	42	50	1
18	50	0.9166	43	55	1
19	56	1	44	77	0.8235
20	57	1	45	68	0.8823
21	58	1	46	50	1
22	51	1	47	73	0.875
23	66	0.9285	48	57	0.9166
24	53	1	49	53	1
25	56	0.8571	50	69	0.875

Table 1: *Age and Penile Brachial index (PBI) as measured by the Doppler ultrasound for"cases".*

v. Neurological assessment

Subjects who had neurological deficits were excluded from the study.

The 50 cases chosen had ages ranged from 50-78 years with a mean of 60-90 ± 8.15 years,

While the 20 control subjects had ages ranged from 51-73 years with a mean of 59.65 ± 7.16 years.

1. Distribution of cases and control of age groups:

Cases in the age group 50 - < 60 years were 25 cases, while those in the age group 60- < 70 years were 17 cases and those in the age group 70 years and over were 8 cases.

Control subjects in the age group 50- < 60 year were 11, while those in the age group 60- < 70 years were 6 and those 70 years and over 3.

AGE IN YEARS	CASES		CONTROL	
	NO.	%	NO.	%
50-	25	50	11	55
60-	17	34	6	30
70 and over	8	16	3	15
TOTAL	50	100%	20	100%
-				
x	60.90		59.65	
s	8.15		7.16	
T	0.5991 (NS)			

Table 2: *Distribution of cases and control according to age groups.*

2. Distribution of cases according to the duration of their sexual trouble:

Cases who were complaining a duration of less than a year were 14, those who were complaining duration from 1- < 2 years were 8, those who were complaining a duration from 2- < 3 years were 14 and those who were complaining a duration from 3-10 years were 14 cases.

No single case was complaining of desire disorder alone.

DURATION OF SEXUAL TROUBLES IN YEARS	NO. OF CASES	
< 1	14	28%
1—	8	16%
2—	14	28%
3—10	14	28%
	50	100%

Table 3: *Distribution of cases according to the duration of sexual troubles.*

3. Distribution of cases according to the type of sexual trouble:

Those who were complaining of erectile troubles only were 12 cases while those who were com- plaining of both erectile troubles with desire disorders were 38 cases.

NO.	AGE IN YEARS	FASTING BLOOD SUGAR mg%	NO.	AGE IN YEARS	FASTING BLOOD SUGAR mg%
1	54	97	26	69	90
2	65	95	27	77	80
3	57	90	28	68	78
4	60	84	29	50	80
5	63	85	30	57	105
6	65	86	31	78	80
7	60	88	32	60	84
8	63	92	33	55	85
9	53	92	34	73	90
10	54	86	35	62	85
11	56	98	36	72	80
12	58	85	37	63	84
13	55	115	38	50	105
14	55	90	39	64	87
15	54	79	40	62	98
16	65	115	41	72	86
17	77	90	42	50	80
18	50	110	43	55	95
19	56	105	44	77	87
20	57	80	45	68	100
21	58	85	46	50	88
22	51	87	47	73	105
23	66	79	48	57	103
24	53	82	49	53	90
25	56	90	50	69	98

Table 4: *Age and Fasting blood sugar of "cases".*

Laboratory investigation results

C. Correlation between age and serum LH:

i. In the 25 cases of age between 50 and 60 years:

The mean age was 54.16 ± 2.7 years, serum LH ranged from 2.8-57.3 mIU/ml with a mean of 22.59 ± 12.75 mIU/ml.

TYPE OF SEXUAL TROUBLE	NO. OF CASES	
Erectile troubles only	12	24%
Erectile and desire disorders	38	76%
	50	100%

Table 5: *Distribution of cases according to the type of sexual trouble.*

In the 11 control subjects of the same age group the mean age was 54.18 ± 2.93 years. Serum LH ranged from 5.9-20.3 mIU/ml with a mean of 11.77 ± 4.87 mIU/ml.

Tables (6a/6b) show no significant correlation between age and serum LH in cases and control of this age group.

No	Hb%	RBCs count	WBCs count	Platelet count	DIFFERENTIAL COUNT					
					Basophils	Eosinophils	Staff nucleated	Segmented	Lympho-cytes	Monocytes
1	90	5600000	5600	280500	0	2	6	67	24	1
2	83	4400000	6400	240000	0	3	6	61	26	4
3	90	5800000	5400	320000	0	1	4	68	24	3
4	83	4900000	6200	290000	0	2	5	60	30	3
5	90	5300000	8100	280300	0	2	5	68	24	1
6	84	490000	7400	220600	0	2	4	55	36	3
7	96	5800000	5800	290600	0	1	4	64	29	2
8	82	4350000	6800	180000	0	2	3	66	28	1
9	91	5350000	4600	210000	0	2	3	70	24	1
10	97	5750000	6600	230000	0	2	5	68	24	1
11	96	5800000	7200	260300	0	3	4	60	31	2
12	92	4900000	8300	190400	0	2	3	56	32	4
13	85	5200000	8200	210400	0	10	5	59	26	0
14	91	5300000	6800	240700	0	3	4	60	31	2
15	90	4950000	8200	230300	0	2	3	60	34	1
16	83	4700000	6400	280000	0	1	3	59	35	2
17	90	4800000	6000	270000	0	4	5	60	29	2
18	97	5600000	7300	280300	0	1	6	61	31	1
19	86	4750000	5400	190600	0	2	3	70	24	1
20	83	4450000	5800	160300	0	4	3	56	36	1
21	84	4900000	6200	210600	0	2	3	58	36	1
22	97	5800000	4800	330000	0	2	6	65	26	1
23	90	5110000	5800	360000	0	1	4	69	24	2
24	97	5750000	8200	280300	1	5	2	62	26	4
25	76	4600000	3200	160400	0	2	4	55	36	3
26	97	5700000	8700	360600	0	2	3	68	26	1
27	90	5450000	6200	290800	0	2	3	65	26	4
28	83	4700000	9200	180300	0	2	3	65	30	1
29	84	4500000	10200	170600	0	1	3	55	35	2
30	90	5350000	8200	280700	0	2	3	60	34	1
31	85	4800000	6000	175400	0	4	5	60	29	2
32	90	5650000	7300	275400	0	4	5	60	28	3
33	90	5950000	5800	330400	0	4	5	65	24	2
34	92	5800000	6300	260400	0	2	3	70	24	1
35	75	4800000	4200	190400	0	3	4	65	21	2

36	93	5660000	9200	340300	0	1	4	68	25	2
37	90	5450000	8200	260300	0	2	3	63	28	4
38	83	4900000	9600	230600	0	1	4	64	29	2
39	84	4750000	8100	220600	0	2	3	63	28	4
40	75	4150000	4200	195600	0	1	5	69	23	2
41	94	5800000	9300	320200	0	2	3	63	28	4
42	84	5100000	9400	210300	0	4	3	66	26	1
43	90	5600000	5600	320300	0	4	6	65	22	3
44	90	5500000	6500	310400	0	5	6	65	22	3
45	84	4800000	8600	190900	0	5	4	62	26	3
46	83	5250000	9800	210300	0	4	3	67	26	0
47	91	5750000	6200	320200	0	4	3	66	26	1
48	92	5640000	8100	570700	0	4	5	52	37	2
49	97	5850000	8700	280900	0	2	3	56	34	5
50	97	5950000	8500	380800	0	4	5	52	34	5

Table 6: *The complete blood picture "cases".*

ii. In the 17 cases of age group 60 and 70 years:

The mean age was 64.24 ± 3.03 years, serum LH ranged from 9. 1-38.5 mIU/ml with a mean of 23.34 ± 10.42 mIU/ml. In the 6 control subjects of the same age group the mean age was 63.83 ± 2.86 years, serum LH ranged from 8.4-32.3 mIU/ml with a mean of 15.97 ± 8.66 mIU/ml. Tables (7a / 7b) show no significant correlation between age and serum LH in cases and control of this age group.

	AGE IN YEARS	**serum LHmIU/ml**
Range -	60- < 70	9.1—38.5
x	64.24	32.34
s	3.03	10.42
r	+ 0.39	
t (n-2)	1.6404 (NS)	

Table 7a: *Correlation between age and serum LH in cases of aged between 60 and 70 years.*

	AGE IN YEARS	**mIU/ml serum LH**
Range -	60- < 70	8.4—32.3
x	63.83	15.97
s	2.86	8-66
r	- 0.29	
t (n-2)	0.6060 (NS)	

x - *mean*

s - *standard deviation*

r - *correlation coefficient*

NS - *non significant*

Table 7b: *Correlation between age and serum LH in control aged between 60 and 70 years.*

iii. In the 8 cases of age group 70 years and over:

The mean age was 74.88 ± 2.59 years, serum LH ranged from 9.6-36.9 mIU/ml with a mean of 19.30 ± 11.32 mIU/ml. In the 3 control subjects of the same group the mean age was 71.33 ± 1.53 years, serum LH ranged from 10.1-64.7 mIU/ml and with a mean of 28.77 ± 31.13 mIU/ml. Table (8a) shows a significant +ve correlation between age and serum LH in cases while table (8b) shows no significant correlation between age and serum LH in the control subjects of the same age group.

	AGE IN YEARS	LH mIU/ml
Range -	70 - 78	9.6—36.9
x	74.88	19.30
s	2.59	11.32
r	+ 0.72	
t (n-2)	2.5414 (NS)	

Table 8a: *Correlation between age and serum LH in cases aged 70 years and over.*

	AGE IN YEARS	LH mIU/ml
Range -	70 – 73	10.1 — 64.7
x	71.33	28.77
s	1.53	31.13
r	- 0.21	
t (n-2)	0.2148 (NS)	

x - *mean*
s - *standard deviation*
r - *correlation coefficient*
NS - *non significant*

Table 8b: *Correlation between age and serum LH in control subjects 70 years and over.*

iv. In cases as a whole group:

The age ranged from 50-78 years with a mean of 60.90 ± 8.15 years. Serum LH ranged from 2.8-57.3 mIU/ ml with a mean of 22.32 ± 11.63 mIU/ml. Table (9a) shows no significant correlation between age and serum LH in cases as a group. In the control group as a whole, the age arranged from 51-73 years with a mean of 59.65 ± 7.16. Serum LH ranged from 5.9-64.7 mIU/ ml with a mean of 15.58 ± 13.04 mIU/ml. Table (9b) shows no significant correlation between age and serum LH in control as a group.

	AGE IN YEARS	LH mIU/ml
Range -	50 - 78	2.8—57.3
x	60.90	22.32
s	8.15	11.63
r	0.02	
t (n-2)	0.1386 (NS)	

Table 9a: *Correlation between age and serum LH in all "cases".*

	AGE IN YEARS	LH mIU/ml
Range -	51 – 73	5.9—64.7
x	59.65	15.58
s	7.16	13.04
r	0.40	
t (n-2)	1.8516 (NS)	

x - *mean*
s - *standard deviation*
r - *correlation coefficient*
NS - *non significant*

Table 9b: *Correlation between age and serum LH in all "control".*

V. Table (10) shows a comparison between serums LH in the different age groups of cases:

The F-value shows a significant correlation between the different means of LH in the different means of LH in the different age groups.

Between the age groups 50 - < 60 & 60 - < 70 years there is a signify cant difference, between age groups 60 - < 70 & 70-78 years there is also a significant difference, while between age groups 50- < 60 &70 - 78 years, there is no significant difference.

Age groups (years) Variable	50— <60	60- <70	70—78
Range -	2.8—57.3	9.1—38.5	9.6—36.9
x	22.59	32.34	19.30
s	12.75	10.42	11.32
F– values	4.7241		(S)

x - *mean*
s - *standard deviation*
LSD - *Least significant difference*
S - *significant*

Table 10: *Comparison between serum LH levels in cases of different age groups.*

D. Correlation between age and serum LH according to the duration of sexual troubles:

Group I: Those of duration of complaint 1- < 2 years: Tables (11a / 11b)

This group consisted of 8 cases with an age ranged from 50-72 years with a mean of 56.88 ± 6.77 years.

Serum testosterone ranged from 267.7-672.6 ng/dl with a mean of 426.04 ± 145.60 and serum LH ranged from 12.2-57.3 mIU/ml with a mean of 29.58 ± 16.36 mIU/ml.

Group II: Those of a duration of complaint 2- <3 years: Tables (12a/12b)

This group consisted of 14 cases with an age ranged from 54-77 years with a mean of 64.07 ± 6.91 years.

Serum testosterone ranged from 131.4-822.5 ng/dl with a mean of 354.01 ± 162.45 ng/dl and serum LH ranged from 9.1-34.1 mIU/ml with a mean of 21.54 ± 9.25 mIU/ml.

	AGE IN YEARS	SERUM LH mIU/ml
Range -	50-27	12.2-57.3
x	65.88	29.58
s	6.77	16.36
r	- 0.51	
t (n-2)	1.4523 (NS)	

x - *mean*
s - *standard deviation*
r - *correlation coefficient*
NS - *non significant*

Table 11: *Correlation between age and serum LH in group I I (duration of complaint was 1- <2 years).*

	AGE IN YEARS	SERUM LH mIU/ml
Range -	54-77	9.1-34.1
x	64.07	21.54
s	6.91	9.25
r	- 0.54	
t (n-2)	2.2225 (S)	

Table 12: *Correlation between age and serum LH in group I II (duration of complaint was 2- <3 years).*

Group III: Those of a duration of complaint 3-10 years: Tables (13a / 13b)

This group consisted of 14 cases with an age ranged from 53-78 years with a mean of 62.64 ± 9.85 years.

Serum testosterone ranged from 189.4-494.2 ng/dl with a mean of 306.72 ± 84.54 ng/dl and serum LH ranged from 7.9-36-9 mIU/ml mean of 19.98 ± 8.42 mIU/ml.

There is no significant correlation between age and serum testosterone in this group but there is a positive significant correlation between age and serum LH.

	AGE IN YEARS	SERUM LH mIU/ml
Range -	53-78	7.9—36.9
x	62.64	19.98
s	9.85	8.42
r	0.56	
t (n-2)	2.3415 (S)	

Table 13: *Correlation between age and serum LH in group I V (duration of complaint was 3- <10 years).*

E. Correlation between age and serum testosterone and LH according to the nature of the complaint:

i. Correlation between age and serum LH in the group complaining of erectile troubles only:

This group showed a serum LH ranging from 2.8-39.8 mIU/ml with a mean of 22.16 ± 12.12 mIU/ml.

Table (14b) shows no significant correlation between age andserum LH in this group.

	AGE IN YEARS	SERUM LH ng/dl
Range -	50-68	2.8—39.8
x	57.92	22.16
s	6.11	12.12
r	- 0.02	
t (n-2)	0.0633 (NS)	

Table 14: *Correlation between age and serum LH in the group complaining of Erectile troubles only.*

ii. Correlation between age and serum LH in the group complaining of desire disorders and erectile troubles:

This group showed a serum LH ranging from 7.9-57.3 mIU/ml with a mean of 22.37 ± 11.64 mIU/ml.

Table (15) shows no significant correlation between and serum LH in this group.

	AGE IN YEARS	SERUM LH ng/dl
Range -	50-78	7.9—57.3
x	61.84	22.37
s	8.54	98.99
r	- 0.02	
t (n-2)	0.12 (NS)	

Table 15: *Correlation between age and serum LH in the group complaining of desire disorders and erectile troubles.*

Discussion

Maintaining sexual capacity in the elderly needs good physical and mental health and regular sexual expression. The relation between sexual and more general developmental changes at all ages must be understood as a process. General, as well as specifically sexual, changes of aging are expectable [30].

The aim of this work was to study sexual activity in the elderly in relation to testosterone and Luteinizing hormone. Cases for this study had to fulfill the criteria of good physical and mental health and at the same time had sexual complaints related to their desire or erectile powers.

In choosing cases with these criteria, detailed sexual and psychological histories helped to identify and exclusion of cases of psychological problems. A detailed present and past medical history excluded cases that were not fit. Also a good clinical examination for all body systems helped to exclude cases with organ diseases especially cardiac, respiratory, hepatic, nervous and renal diseases.

Because of the importance of vascular factor in normal penile erection, dorsal penile arteries blood pressure was assessed using Doppler ultrasound to exclude cases of abnormal penile vascular supply. We have relied upon readings recorded from ausculating the dorsal penile artery because of the difficulty in auscultation of the deep cavernosal arteries. This was the case for many investigators who relied upon this method for measuring the penile systolic blood pressure using the same instrument [12-32].

Fasting blood sugar level, complete blood picture, urine and stool analyses were performed as routine investigations and helped in exclusion of diabetes mellitus, blood diseases, renal troubles and bilharzias.

Elderly male subjects were selected, fifty of them had sexual troubles but physically and mentally healthy served as cases for this study, while other twenty subjects who served as the control, were of normal sexual life and also physically and mentally healthy. The cases and control subjects of this study were then subjected to hormonal assay inclusive of testosterone and luteinizing hormone.

One blood sample was taken from each case and control subject at eight o'clock in the morning to exclude the factor of diurnal variation of the hormonal serum level.

As regards serum testosterone level in this study, it did not significantly differ in cases and control (Tables 10a,b,11,17,18). Many studies [13-17] reported no change in serum testosterone level with age. This goes in accord with our study. On the other hand, some investigators had reported that serum testosterone declines with age. The difference between these studies and between their's and our's may lie in the difference of samples of cases collected and in the interplay of many factors which are now known to affect the serum level of testosterone, such as obesity [32], alcoholism [30], chronic illness and stress [16].

Other studies [14] reported that the dihydrotestosterons that which shows the decline with age more than the total serum testosterone which we have measured to our cases. Some [20,13] had reported that only the free plasma testosterone fraction is that which shows the decline with age.

The concomitant reduction in the metabolic clearance rate of testosterone with advancing age [19-30] probably explains why serum testosterone concentration is still normal in the majority of elderly subjects.

Serum LH in this study significantly differs in cases from the control (tables 17,18). There was a rise in serum LH in cases more than the control subjects (table 17). This increase in serum LH was also noticed between different age groups of cases (table 16,18).

Most of the reported studies have shown that serum LH increases with age [11-16], which goes in accord with our study. On the other hand, another study [20], showed no rise in serum LH with age.

Leydig cell mass was shown to decrease in old age [23]. It was also observed that senile changes in the testes showed a distribution pattern clearly related to arteriosclerosis [24]. Both these factors may explain why there is an increase in serum LH level with age in cases inspite the apparent maintenance of serum testosterone concentration in normal range.

Another finding in this study was that serum testosterone did not shown any significant change in relation to the duration of complaint, while serum LH have show a significant rise only when the duration of sexual complain was three years and over.

Our cases that were complaining of erectile troubles only or desire disorders associated with erectile troubles have shown no hormonal changes in either serum testosterone level or serum LH level.

Although abnormal hormone levels do not play as frequent a role in erectile dysfunctioning as was formerly supposed, low levels of testosterone have been associated with erectile dysfunction [24].

Impotent men have been found to have androgen levels either in the normal range [25] or low [32]. There is some evidence that nen with a low sexual interest and gradual loss of erectile function has lower testosterone levels, [32] whereas impotent men with "normal" sexual appetite show no endocrine abnormality [33].

In this study serum testosterone recorded in our cases had a wide range of 131.4-822.5 ng/dl (table 30, 31), whereas in control subjects it ranges from 163.5-749.8 ng/dl. There was no big difference between both testosterone level recorded for both cases and control. This nearly goes with some reports which suggested 350-800 ng/dl as a normal serum testosterone concentration for healthy males [31], however, others [30] found a testosterone level ranging from 408 – 1022 ng/dl for normal males and 352-1147 ng/dl of those with impotence. Other studies have reported that erectile function to an extent does not depend on testosterone alone but on the estrogen testosterone ratios [33].

The role of testosterone in human sexuality seems clearer. It is the libido hormone" for both genders. It has been speculated that testosterone influences sexual behavior by some interaction as in the neurotransmitters which are the mediators of neural impulses within the sexual circuits.

It was shown in our cases that serum testosterone did not decline with age, though all cases have shown to complain of lack or loss of desire. Although testosterone is the libido hormone and its presence in normal amounts in our cases was not accompanied by normal desire, then other factors might predisposed to the condition, for example, it may be the free testosterone fraction or the active testosterone metabolite which play the role in activation of sexual desire, or it may be the sensitivity of end organs to testosterone which is known to change with age, or there may be a true inhibition of neural centre's or it may be because the role played by testosterone in the functioning of sex centers of both genders is not yet understood till now.

Conclusion

As man ages, many physiological changes occur in his body systems and functions. One of the most important functions to show changes with aging is man's sexuality.

The endocrine status of the male remains relatively stable from early adulthood until the fifth (5th) decade when there are gradual changes of very variable timing and degree.

The decline in sexual responsiveness that affects the aging male is certainly paralleled by his endocrine change. A variety of studies has reported that circulating levels of testosterone fall progressively with advancing age, while at the same time LH reises. Recent data have failed to show any change in LH levels in selected groups of aging men.

In conclusion, Serum LH level shows a rise in sexually complaining subjects more than the normal control subjects. Also this rise in serum LH is clear as the subjects grow older.

This study, clear is the fact that hormonal change is not the major determining factor in this sexual disturbance. Here rises an important question; is there any place for prescribing hormonal treatment for elderly male subjects who complain of sexual troubles? In spite there is an agreement about the serum LH rises with age. we think that there is no need to prescribe hormonal treatment to elderly subjects with sexual troubles except for a subgroup of older men who have serum testosterone level below the lower limit of normal and those with disturbed libido.

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