RESULTS

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Table 1, A: Show the Seminogram of normal fertile men (control group).

- Age varied from 28 to 40 years with a mean of 33.75 ± 1.64.

- The volume of semen varied from 1.5 to 3 ml with a mean of 1.81 ± 0.13.

The percentage of motile sperms:

(a) Immediately after liquifaction varied from 65% to 90% with a mean of 76.8% ± 2.98.

(b) After one hour: varied from 60% to 87% with a mean of 71.5% ± 3.65.

(c) After two hours varied from 0-85% with a mean of 56.8% ± 9.01.

- Spermatozoa were active in all subjects.

- Sperm count varied from 20 to 85 million/ml with a mean of 50.56 ± 7.21.

- Abnormal forms of spermatozoa varied from 4-10 % with a mean of 6.8%.

- Pus cells varied from 2-12/H.P.F. with a mean of 6.8/H.P.F.

- No red blood corpusceles were detected.

Table 1,B: Shows the Seminogram of subfertile men (Oligo-zoorspermic group).

- Age varied from 25 to 39 years with a mean of 32.5 $\pm$ 1.7.

- The volume of semen varied from 1.5 to 4 ml with a mean of 2.12 $\pm$ 0.29.

- the percentage of motility:

(a) Immeiately after liquifaction varied from 65% to 85% with a mean of 75.8 $\pm$ 3.01.

(b) After one hour varied from 55% to 80% with a mean of 69.3 $\pm$ 3.19.

(c) After two hours varied from 0% to 80% with a mean 54.4 $\pm$ 8.63.

- The activity of spermatozoa showed: active in 3 subjects, moderate activity in 2 subjects and sluggish activity in 3 subjects.

- Sperm count varied from 2.5 to 15 millions/ml with a mean of 7.75 $\pm$ 1.59.

- Abnormal forms of spermatozoa varied from 2-10% with a mean of 5.3%.

- Pus cells varied from 4-15/H.P.F. with a mean of 6-8/H.P.F.

- No red blood corpuscles were detected.

Table 1,C: shows the Seminogram of subfertile mean (Asthenozoospermic group).

- Age vried from 23 to 35 years with a mean of 31.62 $\pm$ 1.69.

- The volume of semen varied from 2 to 5 ml with a mean of 3.26 $\pm$ 0.35.

- The percentage of sperm motility:

(a) Immediately after liquifaction varied from 20% to 52% with a mean of 39.7±3.78.

(b) After one hour: vried from 0% to 45% with a mean of 26.2 + 5.65.

(c) After two hours: varied from 0% to 45% with a mean of 20.9 ± 5.75.

- The activity of spermatozoa showed moderate activity in 4 subjects and sluggish activity in 4 subjects.

- Sperm count varied from 21 to 91.8 million/ml with a mean of 45.83 ± 10.19.

- Abnormal forms of spermatozoa varied from 5 to 10% with a mean of 6.8%.

- Pus cells, varied from 10-80/H.P.F. with a mean of 29-34/H.P.F.

- No red blood corpuscles were detected.

Table 1,D: Shows the Seminogram of subfertile men (Oligoasthenozoospermic group).

- Age varied from 25 to 35 years with a mean of 30.62 ± 1.18.

- The volume of semen varied from 1.5 to 5 ml with a mean of 3.43 ± 0.44.

- The percentage of sperm motility:

(a) Immediately after liquifaction varied from 0% to 48% with a mean of 28.4 ± 5.65.

(b) After one hour: varied from 0% to 40% with a mean of 20.5 ± 5.42.

(c) After two hours: varied from 0% to 35% with a mean of 13.12 ±

- Spermatozoa showed moderate activity in 4 subjects and sluggish activity in 3 subjects.

- Sperm count varied from 0.5 to 11.4 million/ml with a mean of 6.17 ± 1.53.

- Abnormal forms of spermatozoa varied from 5 to 18% with a mean of 10%.

- Pus cells varied from 6-120/H.P.F. with a mean of 28-35/H.P.F.

- No red blood corpuscles were detected.

Table 1,E: shows the Seminogram of infertile men (Azoospermic group).

- Age varied from 28 to 37 years with a mean of 32.13 $\pm$ 1.14.

- The volume of semen varied from 4 to 8 ml with a mean of 5.37 $\pm$ 0.46.

- No sperms were detected in all subjects.

- Pus cells varied from 7-15/H.P.F. with a mean of 9-12/H.P.F.

Table 1,F: A collective table showing mean values $\pm$ S.E. of age, semen volume, sperm motility and sperm count.

Table 2: Fig. 2

Serum prolactin levels (uIU/ml) in all groups.

(a) Control group: prolactin levels varied from 10 to 160 uIU/ml with a mean of 37.78 $\pm$ 17.83.

(b) Oligozoospermic group: prolactin levels varied from 25 to 147.5 uIU/ml with a mean of 68.43±15.63.

(c) Asthenozoospermic group: prolactin levels varied from 58 to 450 uIU/ml with a mean of 211.25 ± 46.77.

(d) Oligoasthenozoospermic group prolactin levels varied from 40 to 450 uIU/ml with a mean of 235.23±57.82.

(e) Azoospermic group prolactin levels varied from 10 to 64.5 uIU/ml with a mean of 37.56±7.54.

Table 3: Fig. 3

Seminal plasma prolactin levels (uIU/ml) in all groups.

(a) Control group: prolactin levels varied from 60 to 760 uIU/ml with a mean of 392.5±105.96.

(b) Oligozoospermic group prolactin levels varied from 370 to 3100 uIU/ml with a mean of 1390±363.4

(c) Asthenozoospermic groups: prolactin levels varied from 190 to 1600 uIU/ml with a mean of 1086±149.49.

(d) Oligoasthenozoospermic group: prolactin levels varied from 120 to 1900 uIU/ml with a mean of 883.75±257.03.

(e) Azoospermic group: prolactin levels varied from 70 to 1250 uIU/ml with a mean of 628.75±147.93.

Table 4:

shows the mean values ± S.E. of serum and seminal prolactin levels in different infertile groups compared to normal as demonstrated by Student-t-test. There is a highly significant increase of serum prolactin in both asthenozoospermic group compared to control group ($P < 0.0025^{**}$) and oligoasthenozoospermic group ($P < 0.005^{**}$), while no significant increase in serum prolactin is observed in neither oligozoospermic nor azoospermic group as compared to control.

As regards seminal prolactin table (4) shows a very highly significant increase in seminal prolactin in both oligozoospermic and asthenozoospermic groups compared to control ($P < 0.0005^{***}$; $P < 0.0025^{**}$), no significant increase in oligoasthenozeoospermic group and no significant increase in seminal plasma prolactin is observed in azoospermic group as compared to control.

Table 5:

Shows that there is no significant correlation between serum prolactin in uIU/ml (y) and seminal plasma prolactin in uIU/ml(X) in different infertile

groups as demonstrated by linear regression equetions and correlation coefficient (r)

Table (6, Fig. 4) shows that a positive significant correlation exists between serum prolactin (y) and sperm count (x) only in the oligospermic group (r+0.514, $p < 0.05^{*}$). While no correlation exists in the other groups as demonstrated by linear regression equations and correlation coefficient (r).

Table (7) shows that there is no correlation between seminal plasma prolactin (y) and sperm count (x) in all infertile groups as demonstrated by linear regression equation and correlation coefficient(r).

correlation between prolactin levels (serum and seminal) and sperm motility (immediately after liquifaction) in different infertile groups:

Table (8 Fig. 5,6) show a high significant negative correlation between serum prolactin (y) and sperm motility (x) in the asthenospermic group (r-0.602, $p < 0.05^{*}$). Also a highly significant positive correlation

is found in the oligoasthenospermic group (r+0.67, $P < 0.01$)**

Table (9) shows that no correlation exists between seminal plasma proalctis(y) and sperm motility(x) in different infertile groups as demonstrated by linear regression equation and correlation coefficient (r).

Table (1,A): Seminogram of normal fertile men (control group).

Case No.	Age (Year)	Volume ml	% of viable Count Immed.	After 1 hr	After 2 hr	Activity	Count X10^6/ml	Abnormal forms	Pus cells /H.P.F.	R.B.Cs
1	30	1.5	80%	75%	75%	Active	59.5	5%	5 7	Nil
2	35	2.5	75%	70%	65%	Active	85.0	10%	4 5	Nil
3	28	2	70%	65%	60%	Active	55.0	10%	8 1	Nil
4	35	2	70%	60%	55%	Active	65.0	5%	10 12	Nil
5	39	1.5	80%	70%	65%	Active	35.0	4%	4 5	Nil
6	28	1.5	85%	85%	-	Active	35.0	6%	5 7	Nil
7	35	1.5	90%	87%	85%	Active	20.0	10%	2 3	Nil
8	40	2	65%	60%	50%	Active	50.0	5%	10 12	Nil.
Mean	33.75	1.81	76.8%	71.5%	56.8%		50.56	6.8%	6.8	
± S.D.	4.65	0.37	8.43	10.32	25.48		20.39			
± S.E.	1.64	0.13	2.98	3.65	9.01		7.21			

Table (1,B): Seminogram of subfertile men (Oligozoospermic group).

Case No.	Age (Year)	Volume ml	% of viable Immed.	% of viable After 1 hr	Count After 2 hr	Activity	Count $X10^6$/ml	Abnormal forms	Pus cells /H.P.F.	R.B.Cs /H.P.F.
1	25	4	78%	70%	55%	Active	8.0	6%	4.5	Nil
2	35	2	85%	75%	70%	Moderate	12.0	4%	4.5	Nil
3	32	2	65%	55%	50%	Sluggish	4.5	10%	10.15	Nil
4	38	1.5	75%	70%	60%	Moderate	2.5	5%	5.7	Nil
5	33	2	65%	60%	-	Sluggish	15.0	8%	12.15	Nil
6	30	1.5	70%	65%	50%	Sluggish	10.0	5%	5.7	Nil
7	28	2.5	84%	80%	80%	Active	2.5	3%	4.5	Nil
8	39	1.5	85%	80%	70%	Active	7.5	2%	5.7	Nil
Mean	32.50	2.12	75.8%	69.3%	54.4		7.25	5.3%	6.8	
±S.D.	4.81	0.83	8.52	9.03	24.41		4.75			
±S.E.	1.70	0.29	3.01	3.19	8.63		1.68			

Table (1,C): Seminogram of sub-fertile mean (Asthenozoospermic group).

Case No.	Age (Year)	Volume ml	% of viable Count Immed.	After 1 hr	After 2 hr	Activity	Count $X10^6$/ml	Abnormal forms	Pus cells /H.P.F.	R.B.Cs /H.P.F.
1	35	3	52%	45%	45%	Moderate	91.85	5%	45-50	Nil
2	23	2.5	20%	0%	0%	Sluggish	85.0	10%	45-50	Nil
3	26	2.6	45%	20%	5%	Sluggish	59.0	8%	70-80	Nil
4	30	4	50%	45%	40%	Moderate	31.55	10%	15-20	Nil
5	35	4	45%	40%	30%	Moderate	26.5	5%	12-15	Nil
6	35	3	31%	20%	17%	Sluggish	26.8	7%	20-25	Nil
7	34	5	35%	15%	10%	Sluggish	21.0	5%	15-20	Nil
8	35	2	40%	25%	20%	Moderate	25.0	5%	10-12	Nil
Mean	31.62	3.26	39.7%	26.2%	20.9%		45.83	6.8%	29.34	
± S.D.	4.78	0.99	10.68	15.97	16.26		28.82			
± S.E.	1.69	0.35	3.78	5.65	5.75		10.19			

Table (1,D): Seminogram of Sub-fertile men (Oligoasthenozoospermic group).

Case No.	Age (Year)	Volume ml	% of viable Count Immed.	After 1 hr	After 2 hr	Activity	Count $X10^6$/ml	Abnormal forms	Pus cells /H.P.F.	R.B.Cs
1	25	2.5	20%	10%	0%	Moderate	11.4	10%	35-40	Nil
2	32	2.5	15%	5%	0%	Sluggish	9.25	7%	100-120	Nil
3	29	3	45%	40%	35%	Moderate	1.5	5%	6-8	Nil
4	30	5	32%	15%	0%	Moderate	3.53	10%	20-25	Nil
5	35	4	32%	27%	20%	Sluggish	9.45	8%	20-25	Nil
6	30	1.5	0%	0%	0%	-	0.5	12%	15-20	Nil
7	29	5	35%	27%	20%	Moderate	10.25	18%	15-20	Nil
8	35	4	48%	40%	30%	Sluggish	3.5	10%	15-20	Nil
Mean	30.62	3.43	28.4%	20.5%	13.12%		6.17	10%	28-35	
±S.D.	3.33	1.27	15.97	15.33	14.86		4.35			
± S.E.	1.18	0.44	5.65	5.42	5.25		1.53			

Table (1,E): Seninogram of infertile men (Azoospermic group).

Case No.	Age (Year)	Volume (ml)	% of viable count	Activity	Count	Pus cells /H.P.F.	R.B.Cs
1	30	5	No sperms are detected			10-15	Nil
2	29	6	"		"	10-12	Nil
3	35	4	"		"	10-12	Nil
4	37	5	"		"	8-10	Nil
5	28	6	"		"	7-9	Nil
6	35	8	"		"	8-10	Nil
7	32	5	"		"	10-12	Nil
8	31	4	"		"	10-15	Nil
Mean	32.13	5.37				9-12	
±S.D.	2.23	1.30					
±S.E.	1.14	0.4					

Table (1,F): Seminogram (Mean values ± S.E.) of all groups.

	Fertile control group	Oligozoospermic group	Asthenozoospermic group	Oligoasthenospermic group	Azeospermic group
- Age (Year)	33.75 ± 1.64	32.50 ± 1.7	31.62 ± 1.69	30.62 ± 1.18	32.13 ± 1.14
n	8	8	8	8	8
- Volume of semen(ml)	1.81 ± 0.13	2.12 ± 0.29	3.26 ± 0.35	3.43 ± 0.44	5.37 ± 0.46
n	8	8	8	8	8
- Sperm motility immediately after liquifiaction	76.8 ± 2.98	75.8 ± 3.01	39.7 ± 3.78	28.4 ± 5.65	-
n	8	8	8	8	8
- Sperm count X10^6/ml	50.56 ± 7.21	7.75 ± 1.59	45.83±10.19	6.17 ± 1.53	-
n	8	8	8	8	8

n = No. of cases

Table (2): Serum Prolactin Levels (uIU/ml) in Fertile and Infertile Men.

Case No.	Control	Oligospermic	Asthenospermic	Oligoasthenospermic	Azoospermic
1	22	34	72	70	10
2	31	77	250	245	52
3	10	40	240	336.87	40
4	10	40	100	240	10
5	21.5	64	220	430	52
6	37.78	120	450	40	52
7	10	25	300	70	64.5
8	160	147.5	58	450	20
Range	10-160	25-147.5	58-450	40-450	10-64.5
Mean	37.78	68.43	211 25	235 23	37.56
±S.E.	±17.83	±15.63	±46.77	±57.82	±7.54

Table (3): Seminal prolactin levels (uIU/ml) in Fertile and Infertile Men.

No. of cases	Control group	Oligospermic group	Asthenospermic group	Oligoasthenospermic group	Azoospermic group
1	180	580	1000	150	510
2	750	1030	1250	120	180
3	60	1250	900	720	800
4	710	3100	1600	180	1250
5	760	1400	190	1600	1050
6	350	2800	1100	1600	360
7	120	590	1300	800	810
8	210	370	1350	1900	70
Range	60-760	370-3100	190-1600	120-1900	70-1250
Mean	392.5	1390	1086	883.75	628.75
S.E.	±105.96	±363.4	±149.49	±257.03	±147.93

Table (4): Mean values ± S.E. of serum and seminal plasma prolactin levels in different infertile groups as compared to normal control.

	Control group	Oligospermic group	Asthenospermic group	Oligoasthenospermic group	Azoospermic group
Serum Prolactin (uIU/ml)					
- Mean ± S.E.	37.78±17.83	68.43±15.63	211.25±46.77	235.23±57.82	37.56±7.54
- +t"		1.29	3.46	3.26	0.011
- P		> 0.1	< 0.00025**	< 0.005**	>0.495
Seminal Plasma Prolactin(uIU/ml)					
- Mean ± S.E.	392.5±105.96	1390±363.4	1086.25±149.499	883.75±257.03	628.75±147.93
- "t"		5.243	3.806	1.764	1.578
- P		< 0.0005***	< 0.0025**	> 0.05	> 0.05

*** Very highly significant

** Highly significant

Table (5): Correlation between serum and seminal plasma prolactin levels in different infertile groups.

Groups	Serum prolactin uIU/ml Mean ± S.E.	Seminal plasma prolactin uIU/ml Mean ± S.E.	Linear regression equation Y = A + BX	Correlation coefficient (r)	(P)
- Oligospermic group	68.43±15.63	1390±363.4	y=67.135+(9.367)X	+ 0.2	> 0.05
- Asthenospermic group	211.25 ± 46.77	1086.25±149.499	y=272.14+(-0.056)X	-0.179	> 0.05
- Oligoasthenospermic group	235.23±57.82	883.75±257.03	y =157.67+(+0.877)X	+0.390	> 0.05
- Azoospermic group	37.56 ± 7.54	628.75 ± 147.93	39.356+(-3.329)X	-0.7	> 0.05

Table (6): Correlation between serum prolactin levels and sperm count in different infertile groups.

Groups	Serum Prolactin uIU/ml Mean ± S.E.	Sperm Count Mean ± S.E.	Linear regression equation y = A + B X	Correlation coefficient 'r'	(P)
- Oligospermic group n = 8	68.43±15.63	7.25±1.68	y=39.23+(+4.326) X	+ 0.514	< 0.05*
- Asthenozoospermic group n = 8	211.25±46.77	45.83±10.19	y=263.9+(-0.146) X	- 0.25	> 0.05
- Oligoasthenospermic group n = 8	235.23±57.82	6.17±1.53	y=273.63+(-6.22*)X	+ 0.165	> 0.05

* Significant positive correlation.

n = number of cases.

Table (7): Correlation between seminal plasma prolactin levels and sperm count in different infertile groups.

Groups	Seminal Prolactin uIU/ml Mean ± S.E.	Sperm count Mean ± S.E.	Linear regression equation y = A + BX	Correlation 'r'	(P)
- Oligozoospermic group n = 8	1390±363.4	7.75±1.59	y=1529.9+(-18.059)X	- 0.078	> 0.05
- Asthenozoopermic group n = 8	1086.25±149.499	45.83±10.19	y=1094.78+(-0.186)X	- 0.0126	> 0.05
- Oligoasthenozoo-spermic group n = 8	883.75±257.03	6.17±1.53	y=1272.58+(-62.994)X	0.376	> 0.05

N = number of cases.

Table (8): Correlation between serum prolactin levels and sperm motility (immediately after liquifaction) in different infertile groups.

Groups	Serum Prolactin uIU/ml Mean ± S.E.	Sperm motility Mean ± S.E.	Linear regression equation Y = A + BX	Correlation 'r'	(P)
- Oligospermic group n = 8	147.5±91.002	75.87±3.014	y=0.902+(+0.890)X	+ 0.17	> 0.05
- Asthenospermic group n = 8	211.25±46.77	39.75±3.77	y=507.74+(-7.459)X	+ 0.602	< 0.05*
- Oligoasthenospermic group n = 8	336.87±128.49	28.37±5.647	y=39.389+(+6.90)X	+ 0.67	< 0.01**

* Significant (correlation)

** Highly significant (positive correlation).

n = number of cases.

Table (9): Correlation between seminal plasma prolactin and sperm motility in different infertile groups.

Group	Seminal Prolactin uIU/ml Mean ± S.E.	% of sperm motility immed. after liquifaction Mean ± S.E.	Linear regression equation Y = A + BX	Correlation cofficient 'r'	(P)
- Oligozzospermic group n = 8	1390 ± 363.4	75.87±3.014	Y=5740.8+(-57.34)X	- 0.4755	>0.05
- Asthenozoospermic group n = 8	1086.25±149.499	39.75±3.778	y=1373.499+(-7.226)X	- 0.1829	>0.05
- Oligoasthenozoospermic group n = 8	883.75±257.03	29.37±5.647	y=681.19+(+7.138)X	+ 0.155	>0.05

n = number of cases

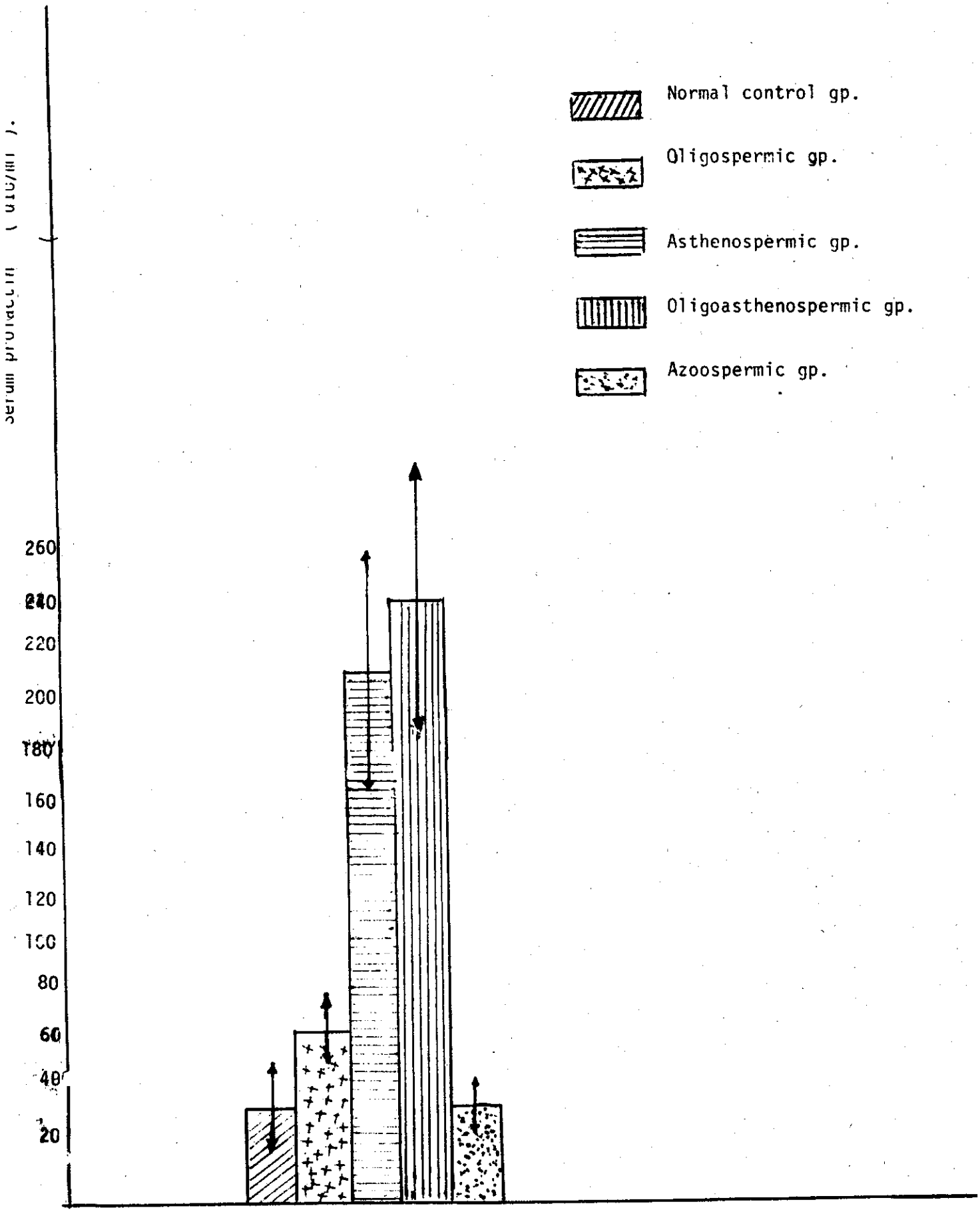


Fig 2 : Mean value ± S.E of serum prolactin levels in fertile and infertile groups.

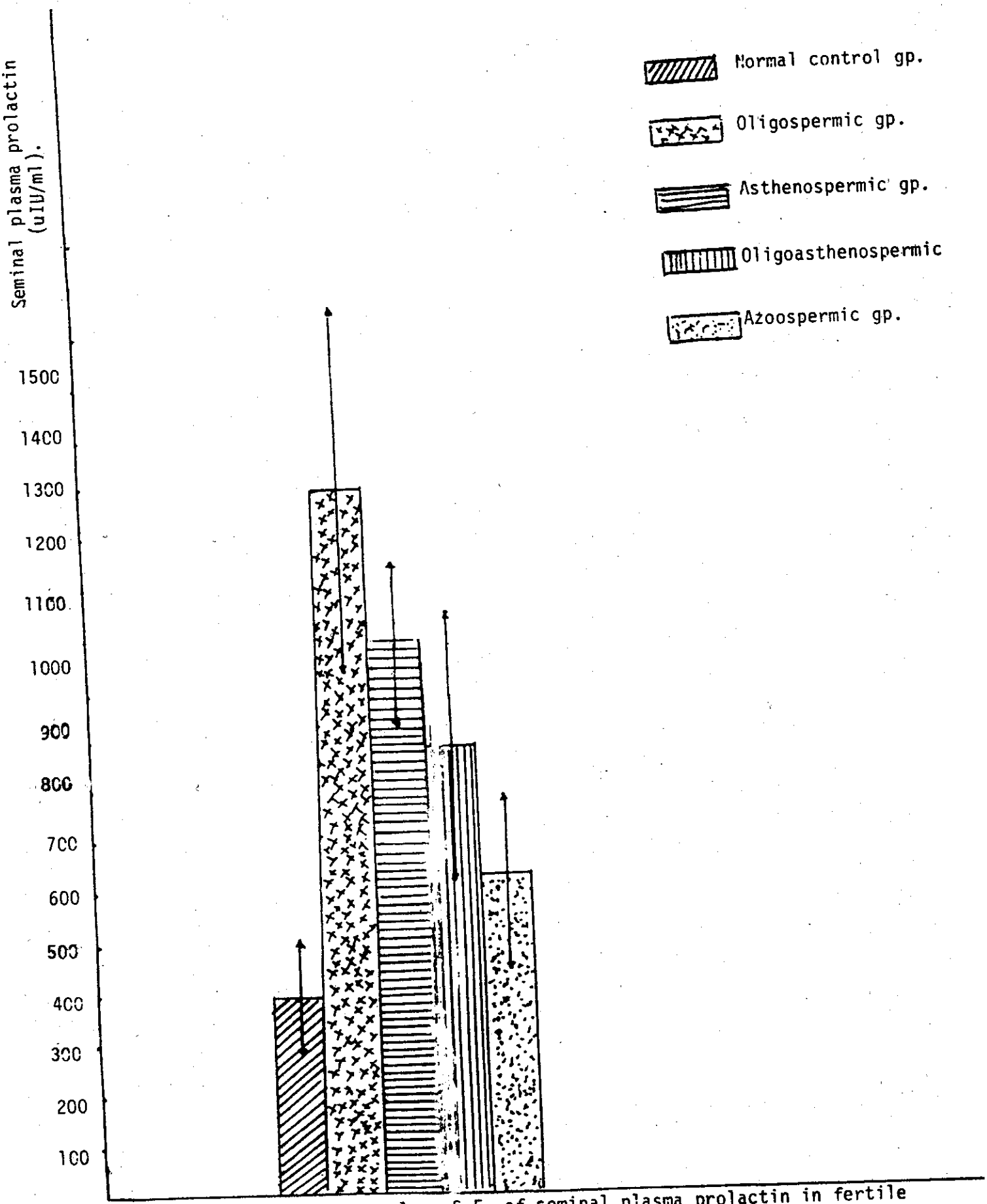
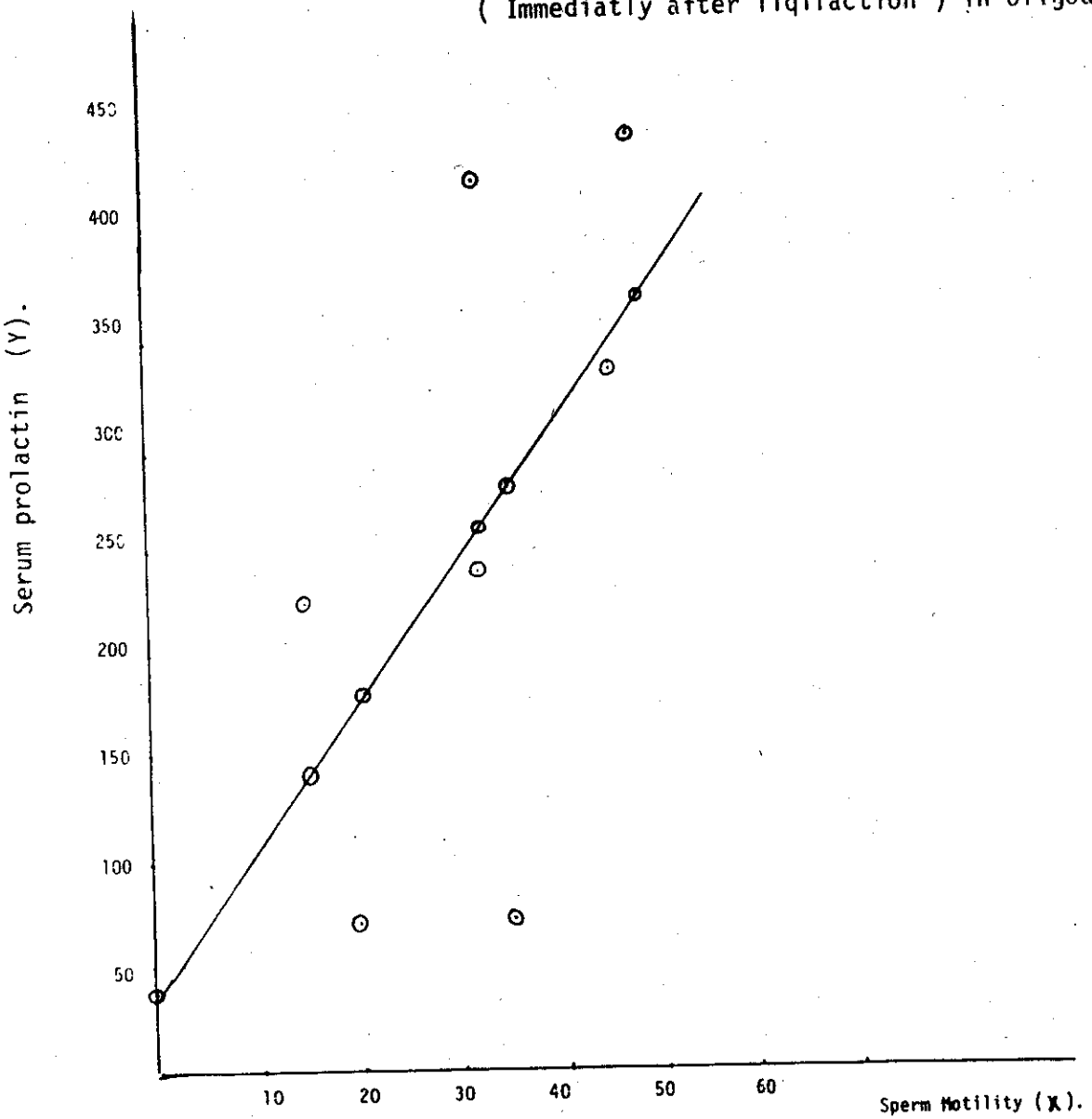


Fig 3 : Mean value S.E. of seminal plasma prolactin in fertile and infertile groups .

Correlation between serum prolactin (uIU/ml) and sperm motility (Immediatly after liqifaction) in Oligoasthenospermic group .



Correlation between serum prolactin levels (uIU/ml)

and sperm count in Oligospermic group .