

RESULTS

I. Morphological observations:-

In all groups, the sex chromatin positive nuclei of buccal smear preparations showed a darkly stained plano-convex mass adjacent to the nuclear membrane (Fig. 6) whereas in blood neutrophil nuclei it appeared as either a drumstick body attached to the main body of the nucleus via a thin filament (Fig.7) or a sessile body (Fig. 8).

II. Quantitative observations:-

Table 10 shows the mean values of all tested items in all groups.

A) Adult group

1. Menstrual Phase Group (Reference group):

Sex chromatin observations

1- Sex chromatin in buccal smear:

The results of this group showed that sex chromatin percentage in buccal smear preparations ranged from 26% to 39% with mean value 33.5 (Fig. 9) and (Tables 1 and 6).

2- Sex chromatin in blood neutrophils:

The results of this group showed that sex chromatin percentage in blood neutrophils ranged from 2% to 4% with a mean value 2.9 (Fig. 10) and (Tables 1 and 7).

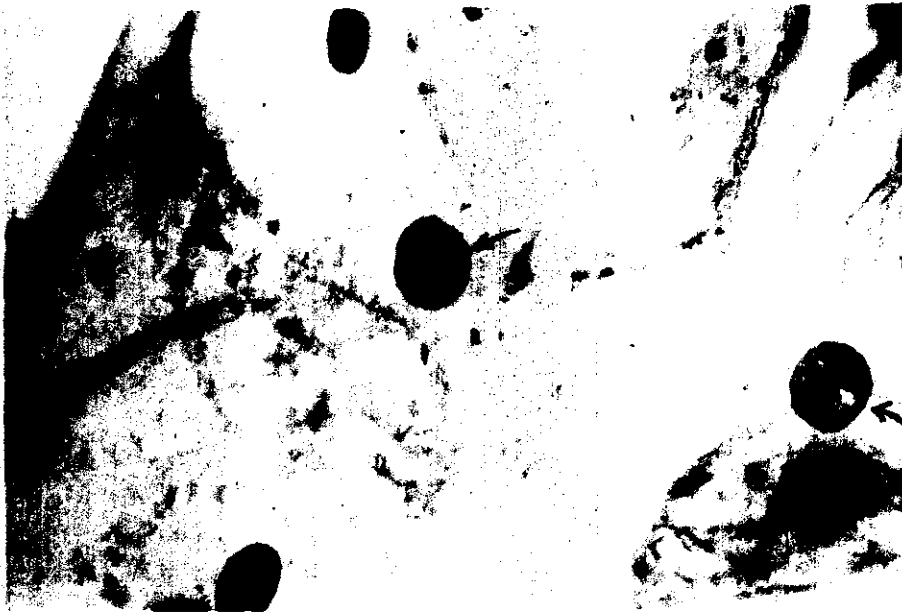


Fig. (6): A photomicrograph of a buccal smear obtained from an adult female showing the sex chromatin (arrow).
[Cresyl-Echt violet, Proj. 10X, Obj. 40X]

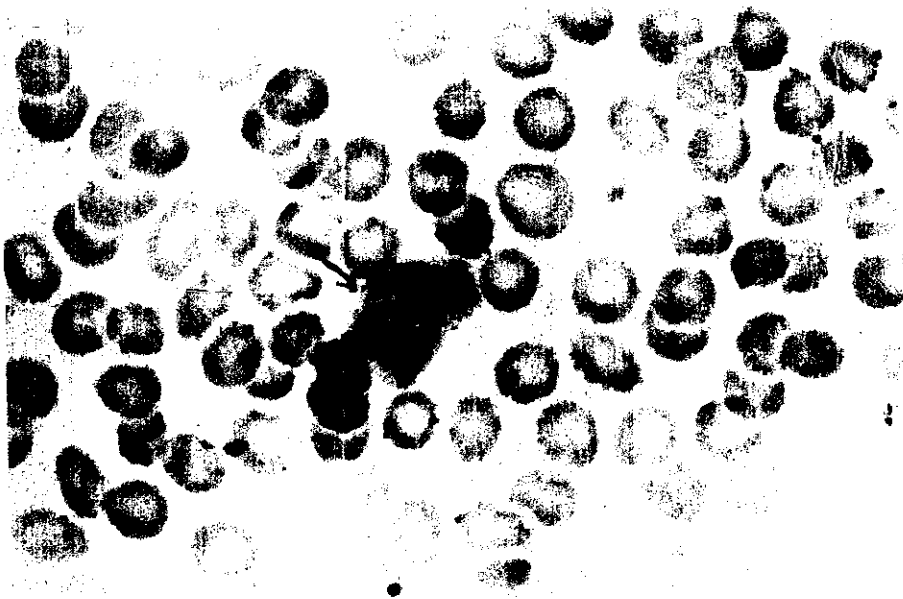


Fig. (7): A photomicrograph of a blood film obtained from an adult female showing the drumstick (arrow).

[Cresyl-Echt violet, Proj. 10X, Obj. 100X]



Fig. (8): A photomicrograph of a blood film obtained from an adult female showing the sessile nodule (arrow).
[Cresyl-Echt violet, Proj. 10X, Obj. 100X]

Hormonal Results

1-Estradiol (pg/ml)

The results of this group showed that estradiol value in serum ranged from 15pg/ml to 35pg/ml with a mean value 23.7 (Fig.11) and (Tables 1 and 8).

2-Progesterone (ng/ml)

The results of this group showed that progesterone value in serum ranged from 0.08 ng/ml to 0.19 ng/ml with a mean value 0.143 (Fig. 12) and (Tables 1 and 9).

2. Proliferative phase group:

Sex chromatin observations

1- Sex chromatin in buccal smear:

The results of this group showed that sex chromatin percentage in buccal smear preparations ranged from 14% to 27% with a mean value 19.6 (Fig. 9) and (Tables 2 and 6).

2- Sex chromatin in blood neutrophils:

The results of this group showed that sex chromatin percentage in blood neutrophils ranged from 1% to 2% with a mean value 1.5 (Fig. 10) and (Tables 2 and 7).

Hormonal Results.***1- Estradiol (pg/ml)***

The results of this group showed that estradiol value in serum ranged from 109 pg/ml to 149 pg/ml with a mean value 132.4 (Fig. 11) and (Tables 2 and 8).

2-Progesterone (ng/ml)

The results of this group showed that progesterone value in serum ranged from 0.23 ng/ml to 0.95 ng/ml with a mean value 0.75 (Fig. 12) and (Tables 2 and 9).

3. Luteal phase group:**Sex chromatin observations*****1- Sex chromatin in buccal smear:***

The results of this group showed that sex chromatin percentage in buccal smear preparations ranged from 29% to 47% with a mean value 37.2 (Fig. 9) and (Tables 3 and 6).

2-Sex chromatin in blood neutrophils:

The results of this group showed that sex chromatin percentage in blood neutrophils ranged from 1% to 3% with a mean value 2.3 (Fig. 10) and (Tables 3 and 7).

Hormonal Results.***1-Estradiol (pg/ml)***

The results of this group showed that estradiol value in serum ranged from 86 pg/ml to 122 pg/ml with a mean value 105 (Fig. 11) and (Tables 3 and 8).

2-Progesterone (ng/ml)

The results of this group showed that progesterone value in serum ranged from 9.2ng/ml to 18.9ng/ml with a mean value 14.47 (Fig. 12) and (Tables 3 and 9).

B) Prepubertal group**Sex chromatin observations*****1-Sex chromatin in buccal smear:***

The results of this group showed that sex chromatin percentage in buccal smear preparations ranged from 15% to 20% with a mean value 16.4 (Fig. 9) and (Tables 4 and 6).

2-Sex chromatin in blood neutrophils:

The results of this group showed that sex chromatin percentage in blood neutrophils ranged from 1% to 3% with a mean value 1.5 (Fig. 10) and (Tables 4 and 7).

Hormonal results***1-Estradiol (pg/ml):***

The results of this group showed that estradiol value in serum ranged from 12 pg/ml to 33 pg/ml with a mean value 19.9 (Fig. 11) and (Tables 4 and 8).

2-Progesterone (ng/ml):

The results of this group showed that progesterone value in serum ranged from 0.11 ng/ml to 0.35 ng/ml with a mean value 0.22 (Fig. 12) and (Tables 4 and 9).

C) Menopausal group**Sex Chromatin observations:*****1- Sex Chromatin in buccal smear:***

The results of this group showed that sex chromatin percentage in buccal smear preparations ranged from 17% to 25% with a mean value 21.4 (Fig. 9) and (Tables 5 and 6).

2- Sex chromatin in blood neutrophils :

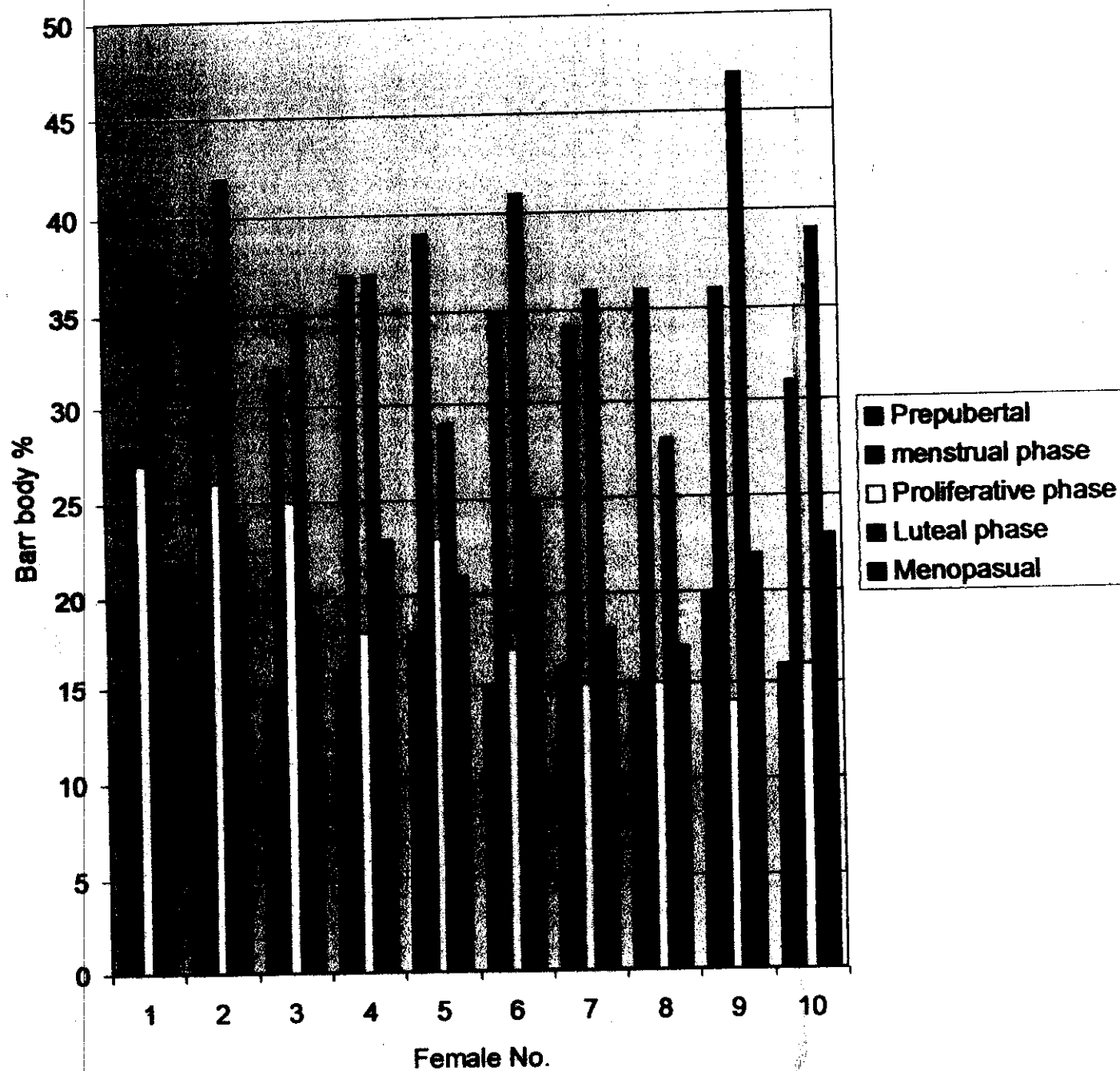
The results of this group showed that sex chromatin percentage in blood neutrophils ranged from 1% to 3% with a mean value 1.9 (Fig. 10) and (Tables 5 and 7).

Hormonal Results:***1- Estradiol (pg/ml):***

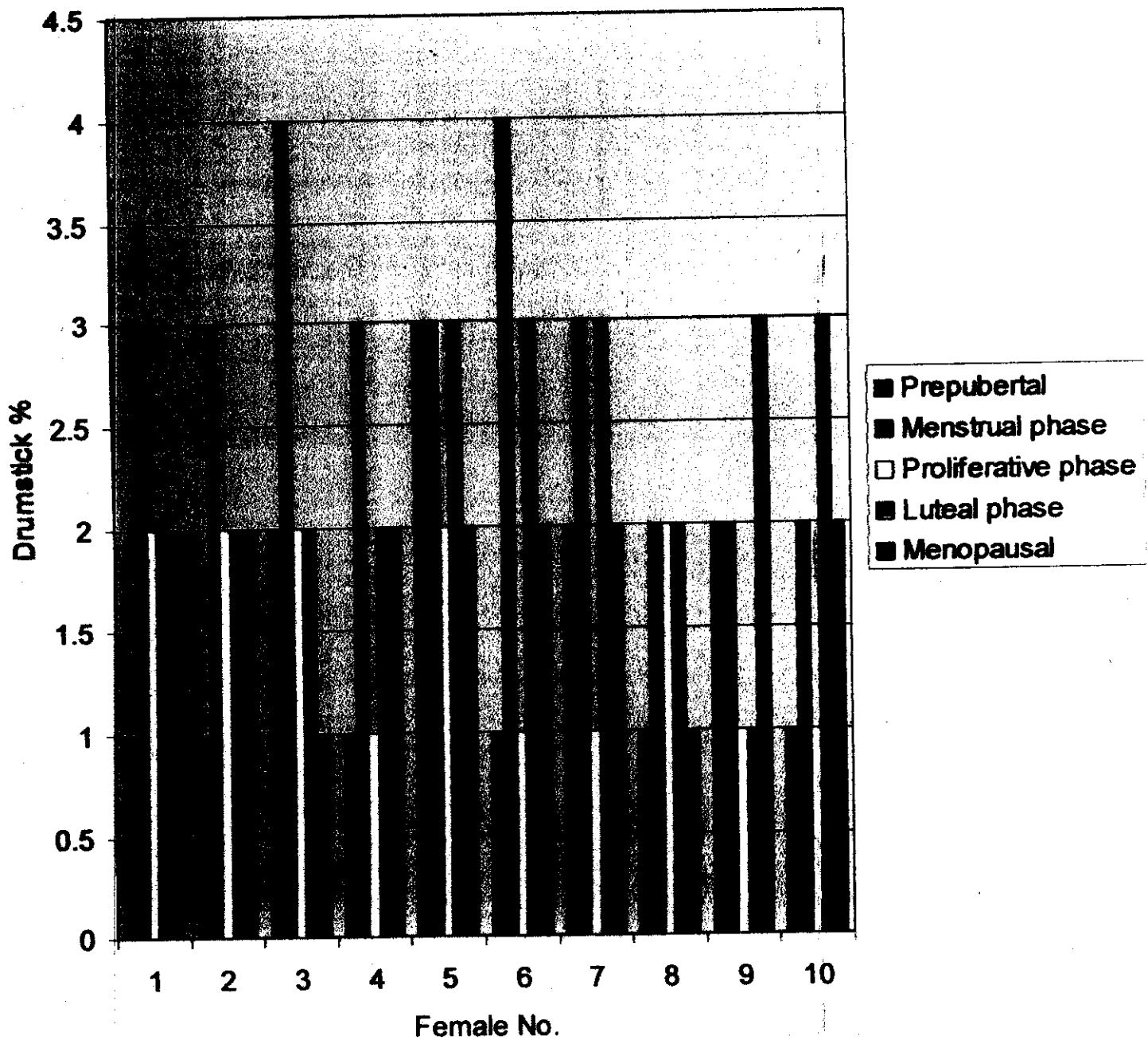
The results of this group showed that estradiol value in serum ranged from 25 pg/ml to 53 pg/ml with a mean 42.2 (Fig. 11) and (Tables 5 and 8).

2- Progesterone (ng/ml)

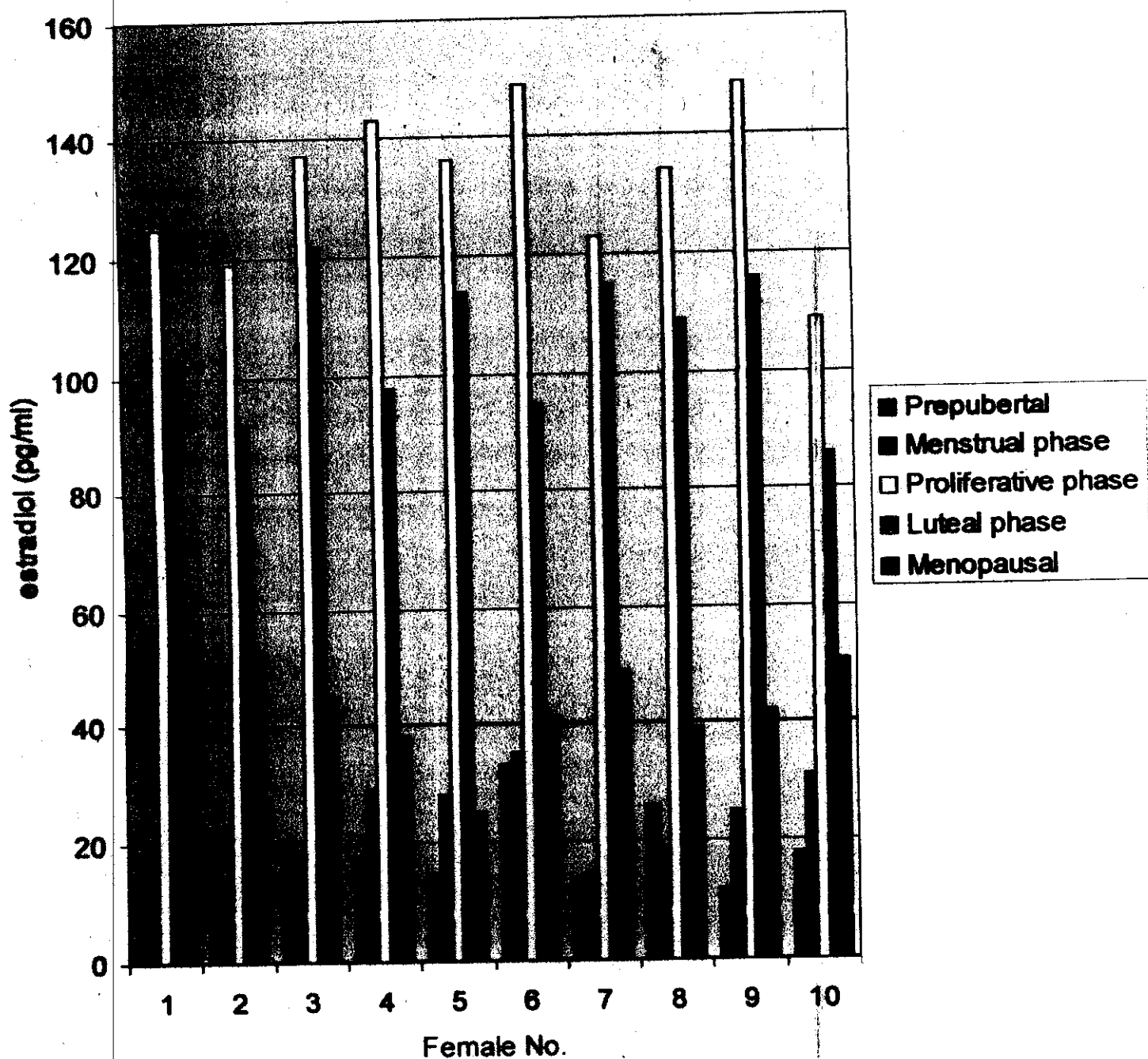
The results of this group showed that progesterone value in serum ranged from 0.19 ng/ml to 0.63 ng/ml with a mean value 0.34 (Fig. 12) and (Tables 5 and 9).



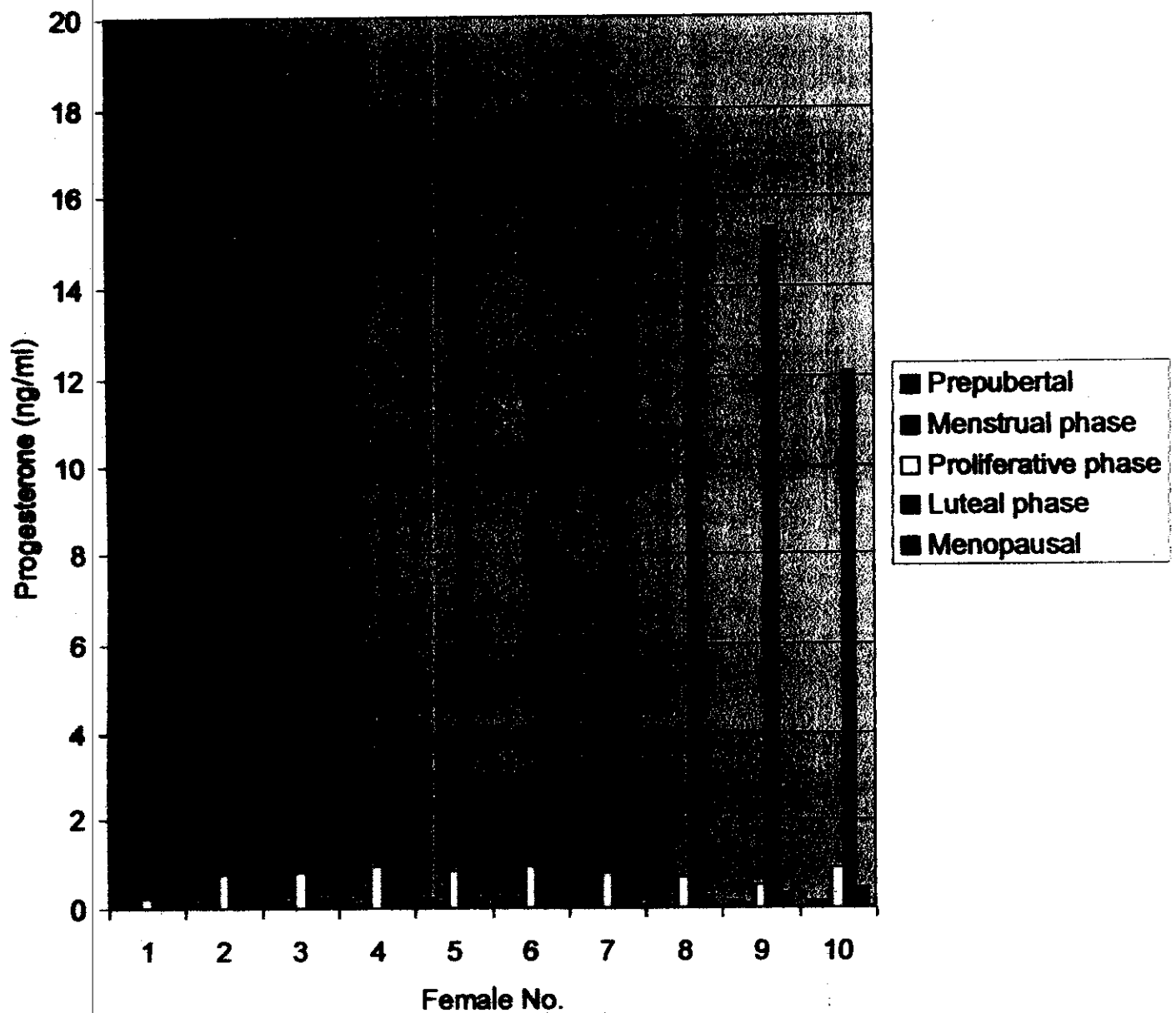
(Fig. 9): Histogram showing Barr body % in different groups



(Fig. 10): Histogram showing the drumstick % in different groups



(Fig. 11): Histogram showing the estimated serum estradiol (pg/ml) in different groups



(Fig. 12): Histogram showing the estimated serum progesterone (ng/ml) in different groups

Table (1): Showing the percent of Barr body and drumstick and the measured serum estradiol and progesterone in 10 adult females in **menstrual phase** (reference group)

♀ No.	Drumstick %	Barr body %	Estradiol pg/ml	Progesterone ng/ml
1	3	28	21	0.15
2	3	37	15	0.13
3	4	32	19	0.19
4	3	37	29	0.14
5	3	39	28	0.17
6	4	35	35	0.18
7	3	34	15	0.09
8	2	26	19	0.08
9	2	36	25	0.12
10	2	31	31	0.18

Table (2): Showing the percent of Barr body and drumstick and the measured serum estradiol and progesterone in 10 adult females in **proliferative phase**.

♀ No	Drumstick %	Barr body %	Estradiol pg/ml	Progesterone ng/ml
1	2	27	125	0.23
2	2	26	119	0.76
3	2	25	137	0.81
4	1	18	143	0.95
5	2	23	136	0.85
6	1	17	149	0.94
7	1	15	123	0.79
8	2	15	134	0.69
9	1	14	149	0.51
10	1	16	109	0.92

Table (3): Showing the percent of Barr body and drumstick and the measured serum estradiol and progesterone in 10 adult females in luteal phase.

♀ No	Drumstick %	Barr body %	Estradiol pg/ml	Progesterone ng/ml
1	2	38	103	13.3
2	2	42	92	15.1
3	2	35	122	18.2
4	2	37	98	11.2
5	3	29	114	18.9
6	3	41	95	9.2
7	3	36	115	14.9
8	2	28	109	16.5
9	1	47	116	15.3
10	3	39	86	12.1

Table (4): Showing the percent of Barr body and drumstick and the measured serum estradiol and progesterone in 10 prepubertal females.

♀ No.	Drumstick %	Barr body %	Estradiol pg/ml	Progesterone ng/ml
1	1	16	19	0.31
2	1	17	23	0.15
3	2	15	21	0.21
4	1	16	18	0.11
5	3	18	15	0.23
6	1	15	33	0.29
7	2	16	14	0.35
8	1	15	26	0.19
9	2	20	12	0.16
10	1	16	18	0.19

Table (5): Showing the percent of Barr body and drumstick and the measured serum estradiol and progesterone in 10 menopausal females.

♀ No.	Drumstick %	Barr body %	Estradiol pg/ml	Progesterone ng/ml
1	2	22	39	0.35
2	2	24	53	0.63
3	1	19	45	0.24
4	2	23	38	0.39
5	2	21	25	0.19
6	2	25	41	0.29
7	2	18	49	0.25
8	1	17	39	0.21
9	3	22	42	0.34
10	2	23	51	0.45

Table (6): Showing the mean and standard deviation (SD) of sex chromatin percentage in buccal smear (Barr body) in different groups in reference to the menstrual (*reference*) group.

	Menstrual phase	Proliferative phase	Luteal phase	Prepubertal group	Menopausal
Mean	33.5	19.6*	37.2*	16.4	21.4
SD	3.98	4.82	5.43	1.50	2.49

* Significant at $P < 0.005$

Table (7): Showing the mean and standard deviation (SD) of sex chromatin percentage in blood film (drumstick) in different groups in reference to the menstrual (*reference*) group.

	Menstrual phase	Proliferative phase	Luteal phase	Prepubertal group	Menopausal
Mean	2.9	1.5*	2.3	1.5	1.9
SD	0.74	0.5	0.64	0.71	0.54

* Significant at $P < 0.005$

Table (8): Showing the mean and standard deviation (SD) of **estrogen** (pg/ml) value in blood serum in different groups in reference to the menstrual (*reference*) group.

	Menstrual phase	Proliferative phase	Luteal phase	Prepubertal group	Menopausal
Mean	23.7	132.4*	105*	19.9	42.2
SD	6.57	12.53	11.36	5.91	7.639

* Significant at $P < 0.005$

Table (9): Showing the mean and standard deviation (SD) of progesterone (ng/ml) value in blood smear in different groups in reference to the menstrual (*reference*) group.

	Menstrual phase	Proliferative phase	Luteal phase	Prepubertal group	Menopausal
Mean	0.14	0.75*	14.47*	0.22	0.34*
SD	0.04	0.21	2.90	0.07	0.12

* Significant at $P < 0.005$

Table (10): Showing the mean of estrogen, progesterone, Barr body and drumstick in all groups

	Menstrual phase (Reference group)	Proliferative phase	Luteal phase	Prepubertal group	Menopausal group
Estrogen (pg/ml)	23.7	132.4*	105*	19.9	42.2
Progesterone (ng/ml)	0.14	0.75*	14.47*	0.22	0.34*
Barr body	33.5	19.6*	37.2*	16.4	21.4
Drumstick	2.9	1.5*	2.3	1.5	1.9

* significant at $P < 0.005$