RESULTS

Two main forms of lymphocytes were counted in the leukocytic spreads; namely, non-dividing cells, and transformed cells.

a) **Non-dividing lymphocytes:**

There were two types of non-dividing lymphocytes; namely, small and large cells with the predominance of the small type. The small lymphocyte had a relatively large nucleus surrounded by a narrow rim of cytoplasm. The nucleus appeared rounded and generally showing a small indentation to one side. The densely packed chromatin of the nucleus was stained intensely and the nucleoli were invisible (Fig. 1). The large lymphocytes were much less in the leukocytic spreads. Their large size was due chiefly to a greater amount of cytoplasm. The nucleus was more or less rounded and peripherally situated.

b) **Transformed lymphocytes:**

Two stages of cell division could be identified in this group. During prophase, the chromatin threads appeared condensed (shortened and thickened) so

Fig 1: A photomicrograph of a human leukocytic spread showing a small non-dividing lymphocyte (arrow) and a dividing cell in the metaphase stage (ML)
(Giemsa stain, X1000).

that the chromosomes became visible as short, dark, rod-like structures (Fig. 2). During metaphase, the chromosomes (pairs of chromatids appeared scattered as a result of the disintegrating effect of colchicine on the mitotic spindles. At this stage of mitosis, the two chromatids of a chromosome were attached to the paler-staining centromere with the arms extending outwards (Fig. 3).

Group I (Progesterone group)

The results of this group were collectively presented in Table I.

a) Control cultures (18 ng/mL)

The transformed cell percentage ranged from 60.15 to 70.19%, with a mean value of 63.94%, and a population variance (σ^2) of 12.2.

b) Experimental cultures:

1) The first concentration (27 ng/mL)

The transformed cell percentage ranged from 50.1 to 61.05%, with a mean value of 56.21%, and a population variance (σ^2) of 17.24.

2) The second concentration (36 ng/mL)

The transformed cell percentage ranged from 49.57 to 60.07%, with a mean value of 55.33%, and a population variance (σ^2) of 10.91.

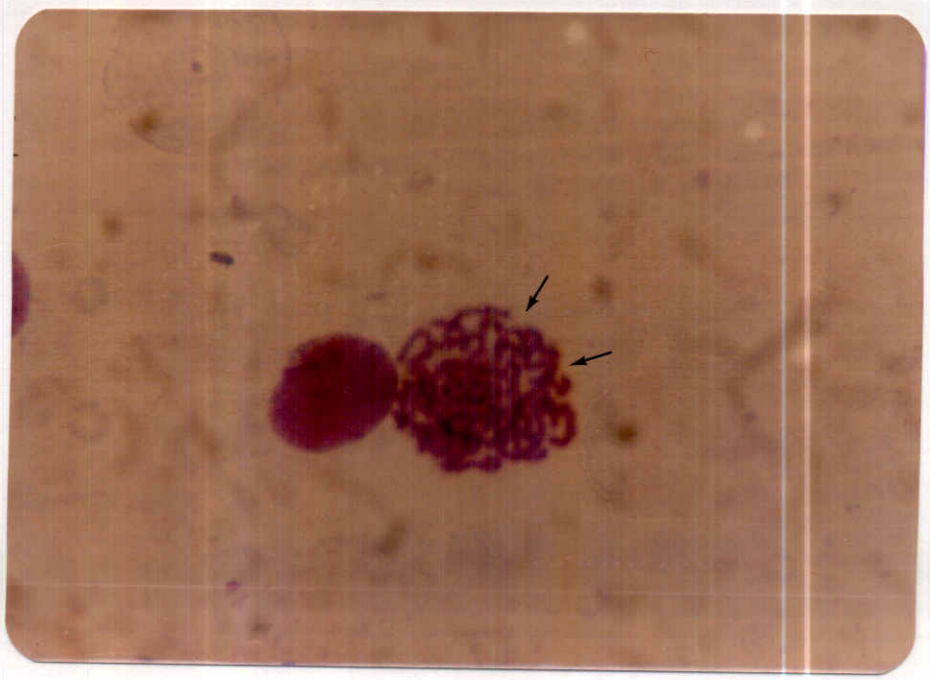

Fig. 2: A photomicrograph of a human leukocytic spread showing a lymphocytic nucleus in the late prophase stage.
Note that the nuclear membrane is still intact (arrows)
(Giemsa stain, X1000).

Fig. 3: A photomicrograph of a human leukocytic spread showing a dividing lymphocyte in the metaphase stage.
Note the appearance of the chromosome arms diverging from the centromere.
(Giemsa stain, X1000).

Case number	Control (18 ng/mL)				1st Concentration (27 ng/mL)				2nd Concentration (36 ng/mL)			
	Total Cell Count	Trans-formed Cells	Index of Response	σ^2	Total Cell Count	Trans-formed Cells	Index of Response	σ^2	Total Cell Count	Trans-formed Cells	Index of Response	σ^2
1	1025	670	65.37		1021	616	60.33		1013	537	53.00	
2	1133	686	60.54		1023	540	52.79		1009	523	51.83	
3	1011	615	60.83		1059	547	51.65		948	518	54.64	
4	1023	667	65.20		1040	622	59.81		1027	617	60.07	
5	1036	720	69.50		1038	618	59.54		1042	606	58.16	
6	1055	643	60.95		1009	512	50.74		970	503	51.86	
7	1040	730	70.19	12.2	1075	655	60.93	17.24	1044	619	59.29	10.91
8	1054	720	68.31		1068	628	58.80		955	520	54.45	
9	1078	668	61.97		1068	603	56.46		1101	605	54.95	
10	1055	653.	61.90		1200	630	52.50		1072	640	59.70	
11	1099	691	62.88		1032	630	61.05		1170	580	49.57	
12	1059	637	60.15		1022	512	50.10		1079	610	56.53	

Table 1: Showing the total and transformed lymphocyte cell counts, the index of response, and the population variances (σ^2) of the control and the experimental cultures of group I donors (Progesterone group).

Obviously, the mean transformation percentage was noted to decrease with increasing the level of progesterone per mL of culture.

Group II (Oestradiol group)

The results of this group were collectively presented in Table 2.

a) Control cultures (1 µg/mL)

The transformed cell percentage ranged from 58.09 to 71.53%, with a mean value of 65.81%, and a population variance (σ^2 of 12.77.

b) Experimental cultures

1) The first concentration (1.5 µg/mL)

The transformed cell percentage ranged from 50.99 to 65.52%, with amean value of 59.8%, and a population variance (σ^2) of 23.46.

2) The second concentration (2 µg/mL)

The transformed cell percentage ranged from 48.18 to 61.95%, with a mean value of 56.45%, and a population variance (σ^2) of 26.44.

Obviously, the mean transformation percentage was noted to decrease with increasing the level of oestradiol per mL of culture.

Case number	Control (1 µg/mL)				1st Concentration (1.5 µg/mL)				2nd Concentration (2 µg/mL)			
	Total number	Trans-formed Cells	Index of Response	σ^2	Total number	Trans-formed Cells	Index of Response	σ^2	Total number	Trans-formed Cells	Index of Response	σ^2
1	1019	690	67.71		1021	669	65.52		1004	622	61.95	
2	1154	726	62.91		1062	602	56.69		1022	545	53.33	
3	1020	712	69.80		926	606	65.44		972	602	61.93	
4	1089	730	67.03		1020	650	63.73		1028	632	61.49	
5	1112	756	67.99	12.77	1014	645	63.61	23.46	1016	628	61.81	26.44
6	1015	726	71.53		1017	539	53.00		1052	590	56.08	
7	1031	655	63.53		1020	625	61.27		992	580	58.47	
8	1014	589	58.09		1113	677	56.96		1036	606	58.49	
9	1309	879	67.15		1106	680	61.48		1016	510	50.20	
10	1002	640	63.87		1010	515	50.99		1015	489	48.18	
11	1015	650	64.04		1042	580	55.66		1020	503	49.31	

Table 2 : Showing the total and transformed lymphocyte cell counts, the index of response, and the population variances (σ^2) of the control and the experimental cultures of group II donors (Oestrogen group).