RESULTS

-(Results)-

In this work we are dealing with 20 cases of acute rheumatic fever and 10 controls of the same age group.

For each of the cases full clinical examination was done. Almost all the patient were representing by fever, pallor and toxic look. Five patients were only representing by chorea. Seven cases developped heart failure either at admission or during the course of the disease. Table (1) shows the clinical manifestation of rheumatic fever in the group of cases.

Table(2,3) show the results of laboratory investigations done for the cases and controls. E S R and A S O T were found within normal ranges in the controls C R P was found to be positive in all the cases except in case 18, 19 and 20.

The peroxidase content in polymorphonuclear leukocytes in cases of rheumatic fever had a mean of 306.05 ± 23.97 while in the controls it was 343.7 ± 14.78. This decrease is highly significant statistically, $P < 0.0005$ as

shown in table (6) .

The lysozyme activity had a mean of 164.2 ± 11.86 in the cases while in controls it was 144.6 ± 13.31 . Again this increase is highly significant statistically $P < 0.0005$ as shown in table (7) .

Fig 1,2 show comparison between peroxidase content and lysozyme activity of polymorphonuclear leukocytes between cases and controls.

Table (1) : Relevant Clinical date of Cases of rheumatic fever

Case	Age	Arthritis	Carditis	Chorea	Erth. Marg.	Sub. nod	C.H.F.
1	9 Y	-	+	+	-	-	-
2	10 Y	+	+	-	-	-	-
3	8 Y	-	+	-	-	-	-
4	10 Y	+	-	-	+	-	-
5	13 Y	+	-	-	-	-	-
6	11 Y	-	+	-	-	-	+
7	8 Y	+	-	-	-	-	-
8	6 Y	-	+	-	-	-	+
9	12 Y	-	+	+	-	-	+
10	10 Y	-	-	+	-	-	-
11	8 Y	+	-	-	-	-	-
12	11 Y	-	+	+	-	-	+
13	13 Y	-	+	+	-	-	-
14	10 Y	-	+	-	-	-	+
15	12 Y	-	-	+	-	-	-
16	12 Y	-	+	-	-	-	+
17	10 Y	-	+	-	-	-	+
18	12 Y	-	-	+	-	-	-
19	9 Y	-	-	+	-	-	-
20	12 Y	-	-	+	-	-	-

Table (2) : Data of Laboratory investigations of cases of rheumatic fever

Case	Hb in grams	TWBCs	Differential %					ESR			ASOT
			B	E	St	Seg	L	M	1sh	2nh	
1	10.5	6.200	0	0	0	68	30	2	70	100	350
2	9.2	10.300	0	6	2	40	50	2	40	85	625
3	6.3	6.000	0	8	4	46	38	4	100	134	500
4	10.5	10.600	0	2	6	80	12	0	98	130	850
5	12	5.400	0	2	3	75	17	3	90	125	700
6	6.5	15.200	0	0	0	81	14	5	100	120	625
7	8.5	8.800	0	6	0	54	36	4	44	70	380
8	11.2	6.800	0	2	0	66	30	2	55	90	800
9	10.5	7.000	1	3	4	40	50	2	14	30	480
10	12.5	5.900	0	4	2	59	32	3	20	38	400
11	11.5	6.100	0	0	2	66	30	2	80	105	625
12	10	8.800	0	8	0	58	30	4	90	115	400
13	10.5	13.600	2	4	2	42	40	12	45	75	700
14	10	8.800	0	10	0	46	40	4	90	115	500
15	10.5	8.100	0	0	0	56	38	6	35	64	525
16	9.8	13.600	0	0	0	46	50	4	15	35	390
17	7	28.400	0	2	6	72	20	2	72	112	350
18	9.5	7.500	0	8	4	56	28	4	15	27	350
19	11.6	5.600	0	1	1	66	32	0	3	8	300
20	9.9	4.000	0	2	4	52	40	2	5	12	300
R	6.3-12.5	4.000-28.4000						3-100.8-134			300-85
M	9.9	9.335						54.05	79.3		512.5
S.D	1.7	5407.2						34.6	41.9		176.7

Table (3) : Data of Laboratory investigations done to the group of control

Case	Age	Hb in grams	$TWBC_2$	Differential					
				B	E	St	Seg	L	M
1	6 Y	13.5	6.800	0	2	6	64	28	0
2	8 Y	13	7.000	0	4	1	39	54	2
3	5 Y	12.3	8.100	0	3	7	34	56	0
4	10 Y	12.6	7.900	0	2	10	52	34	2
5	10 Y	11.9	5.900	1	4	1	46	48	0
6	6 Y	12.8	8.300	0	4	7	52	39	0
7	7 Y	11.9	8.600	0	0	8	58	32	2
8	11 Y	12.6	7.000	1	4	6	42	45	2
9	10 Y	12.6	9.000	1	2	4	39	50	4
10	8 Y	11.9	5.600	0	6	4	40	48	2

N.B. ESR ASOT done to this group were found within normal range.

Table (4) : Peroxidase content & lysozyme activity in polymorphonuclear leukocytes of control group

Case	Peroxidase	Lysozyme
1	368	142
2	340	144
3	338	164
4	346	148
5	322	144
6	340	169
7	329	127
8	347	139
9	368	140
10	339	129
Range	322 - 368	127 - 169
Mean	343.7	144.6
SD	14,78	13.31

Table (5) : Peroxidase content & lysozyme activity in Polymorphonuclear leukocytes in cases of rheumatic fever

	Peroxidase	Lysozyme
1	276	166
2	302	185
3	311	160
4	294	168
5	283	191
6	303	182
7	328	170
8	346	160
9	309	159
10	346	148
11	327	158
12	298	167
13	302	170
14	348	158
15	291	169
16	310	163
17	297	158
18	309	157
19	286	152
20	255	143
Range	255 - 348	143 - 191
Mean	306.05	164.2
S D	23,97	11.86

Table (6): Statistical comparison of the results of peroxidase content in group of rheumatic cases and group of controls

	Cases	Control
No	20	10
Range	255 - 348	322 - 368
Mean	306.05	343.7
S.D	23.97	14.78
t	5.2931	
p	< 0.0005	
Significance	Highly significant	

Table (7) : Statistical comparison of the results of lysozyme activity in group of rheumatic cases and group of controls

	Cases	Control
No	20	10
Range	143 - 191	127 - 169
Mean	164.2	144.6
S. D	11.86	13.31
t	3.9375	
P	< 0.0005	
Significance	Highly significant	

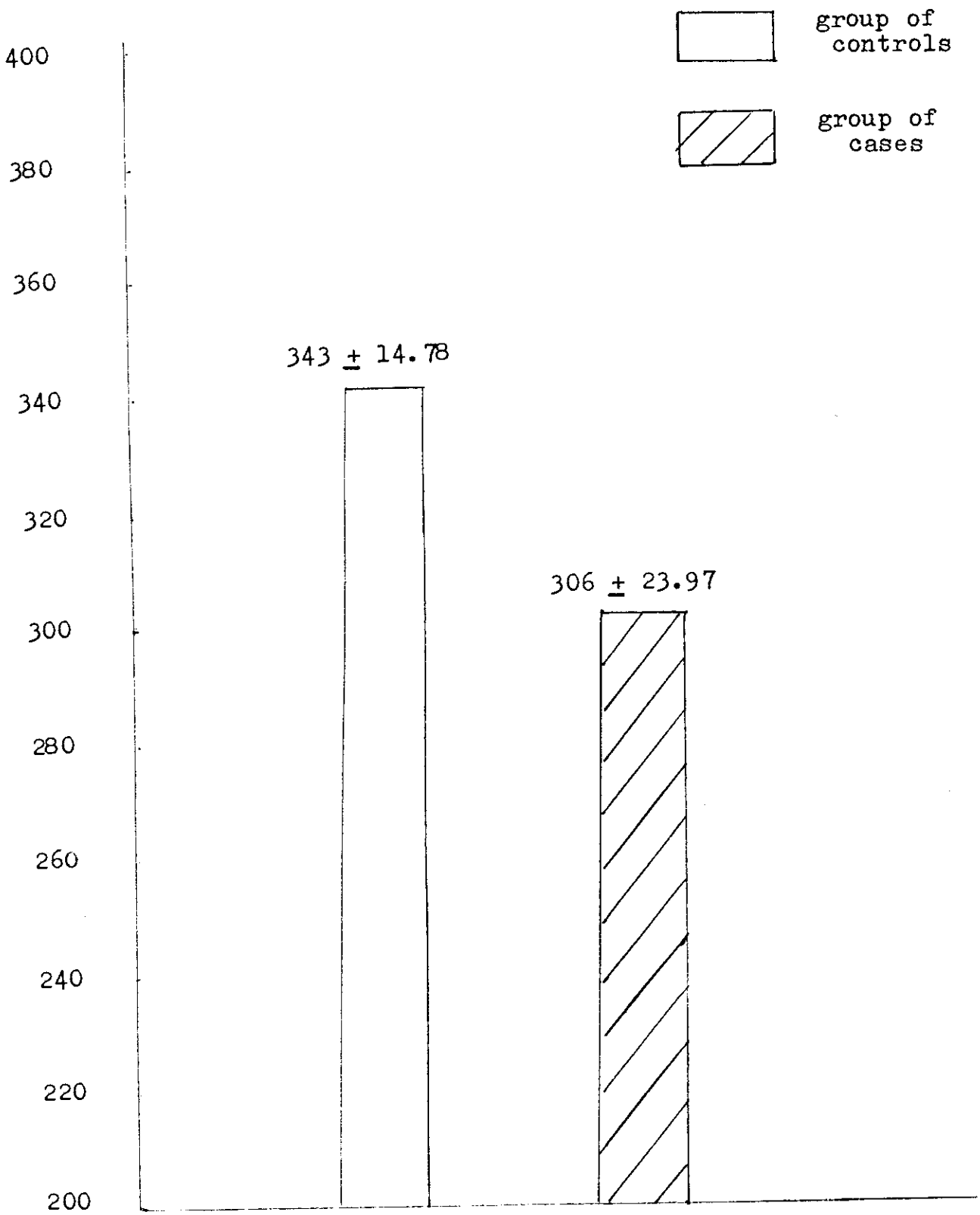

Fig (1)

Comparison between peroxidase content in group of controls and group of ceses.

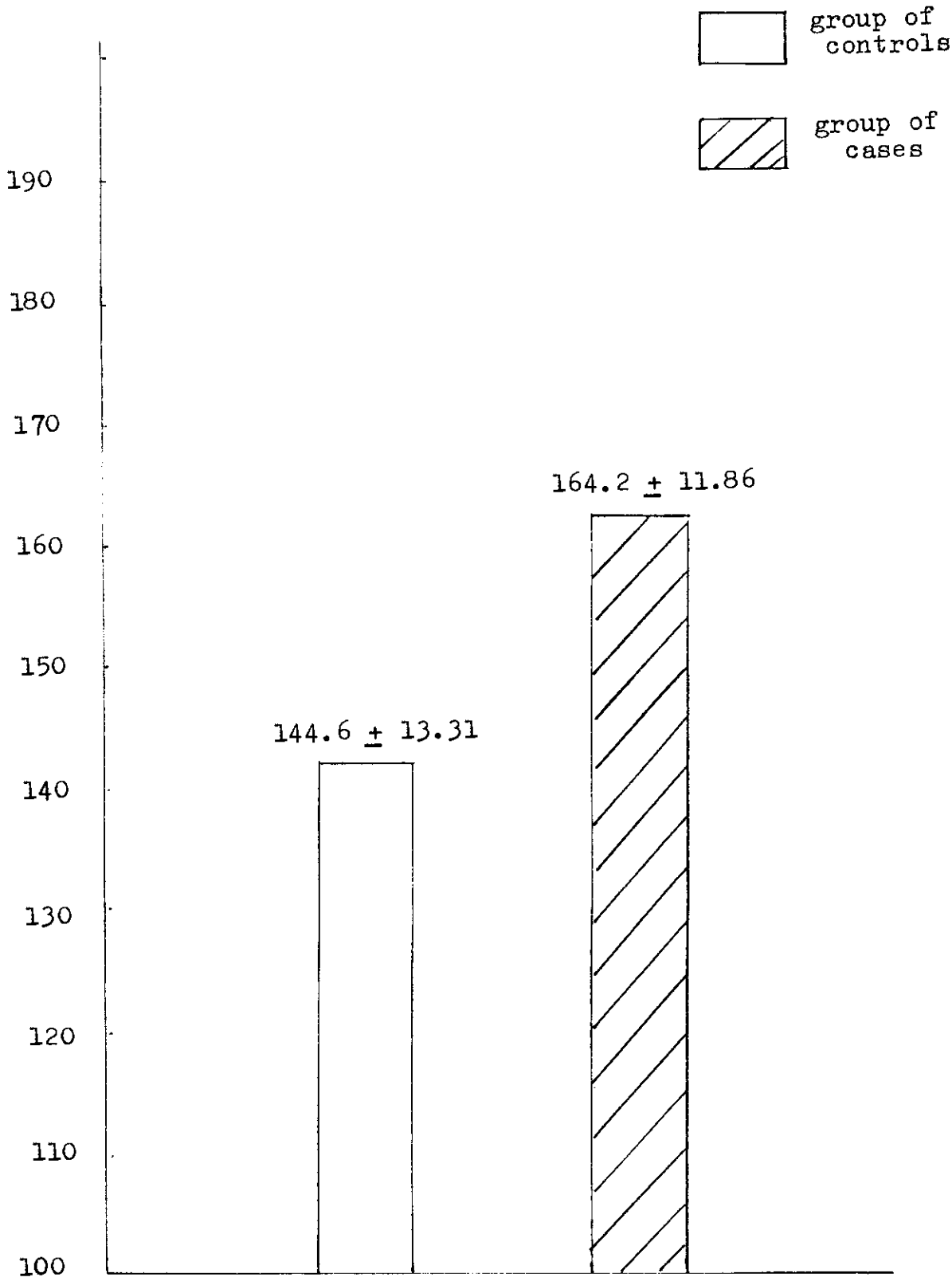

Fig (2)

Comparison between lysozyme activity in group of controls and group of cases .

DISCUSSION

-(Discussion)-

Neutrophils form the front line of immunological defence. They predominate in lesions caused by pyogenic bacteria and are also important for the removal of damaged tissue . As usually happens when a new diagnostic tool is introduced, the introduction of neutrophil function tests has revealed that disorders of neutrophil functions are not as uncommon as they were once considered to be (Cruckshank et al 1976).

Most of the studies performed on neutrophil functions in many collagen diseases have reported that abnormalities in neutrophil functions do occur in these diseases.

Chemotaxis is the first step of the phagocytic process. Decreased chemotactic indices have been found in leukocytes in cases of acute rheumatic fever (Leimgruber et al 1976, El-Ayouti 1977, Read & Zabriskie 1981).

Similiar findings were reported in cases of rheumatoid arthritis (Mowat & Baum 1971, Roberts Thomson et al 1976) and in cases of systemic lupus erythematosus(Al-Hadithy et al 1982).

step of the phagocytic process which is the intracellular killing capacity in cases of acute rheumatic fever.

The present work showed a significant decrease in the peroxidase content of polymorphonuclear leukocytes in rheumatic fever cases as compared to normal control. An increase in the lysozyme activity was also noted probably as a compensatory mechanisms for combating infections. Also an increase in the superoxide anion generation by the respiratory burst was demonotrated by (Campos et al 1974, El-Ayouti 1977) who showed an increase inpositive nitroblue tetrazolium cells in cases of rheumatic fever. As in congenital myeloperoxidase defiency (Gabig 1980, Klebanoff 1980) peroxidase defiency in rheumatic fever polymorphonuclear leukocytes might lead to some delay in bacterial killing after which the bacteria are efficently killed as increased susceptibility to infections is not noted in such cases.

We might recommend here that other methods for evaluating the intracellular killing capacity of polymorphonuclear leukocytes in rheumatic fever as the use of staph Aureus or Candida Albicans are considered.

In fact these tests using bacteria showed normal intracellular killing in rheumatoid arthritis (Udén et al 1983) and systemic lupus erythematosus (Al-Hadithy et al 1982).