R E S U L T S

There were 42 males and 48 females in the series. The youngest patient was 7 years old and the oldest 40 years , with a mean of 21 years. Appendicitis in infancy and childhood is not commonly seen in the Main University Hospital where the trial was performed as they are usually referred to the Chatby University Hospital. The age and sex distribution in relation to the degree of inflammation of the appendix is shown in table (1) .

T A B L E 1

Age and sex distribution in relation to appendicular pathology

State of appendix	Age range in years	Mean age	Below 20 years	Males	Females	Total
Catarrhal	7 - 38	19	57%	8	21	29
Phlegmonous	8 - 40	22	48%	19	22	41
Gangrenous	13 - 29	20	50%	8	3	11
Perforated	14 - 37	23	45%	7	2	9

The duration of illness between the onset of symptoms and hospitalization is shown in table (2) with an average of 24 hours. The severity of the disease was directly proportional to the time elapsed between the onset of symptoms and admission to hospital .

T A B L E 2

Average duration of symptoms prior to hospitalisation

State of appendix	Catarrhal	Phlegmonous	Gangrenous	Perforated
Duration of illness before admission	24 hours	24 hours	48 hours	72 hours

The most common presenting symptom was abdominal pain localised to the right lower abdomen. The classical description of diffuse abdominal pain or epigastric discomfort followed by localisation in the right lower abdomen was present in only 50% of cases. Physical examination revealed tenderness in the right iliac fossa in 100% of cases . Rebound tenderness was encountered in only 35% of cases .

Table (3) shows the relation between the clinical picture, the pathology of the appendix and the leucocytic count .

T A B L E 3

Relation between the clinical picture, pathological condition of the appendix and leucocytic count .

Finding	Catarrheal %	Phlegmonous %	Gangrenous %	Perforated %
Abdominal pain	100	100	100	100
Nausea and vomiting	38	45	75	90
Constipation	60	56	63	79
Tender McBurney's	85	93	100	100
Rebound tenderness	12	23	75	90
Rigidity in R.I.F.	0	9	60	90
Temperature (mean)	37.1°C	37.5°C	38.3°C	38.7°C
Leucocytic count (mean)	9,500	11,000	13,000	15,000

Wound sepsis occurred in 24 out of the 90 patients included in the trial (26.7%) .

The infection rate in the three arms of the trial is shown in table (4). There was no difference between the

control and the group which received antibiotics, while a statistically significant reduction is seen in the metronidazole group ($P < 0.05$) .

T A B L E 4

Infection rate in the three arms of the trial

Group	Total	Infected	Percentage
Control	30	10	33.3
Antibiotic	30	10	33.3
Metronidazole	30	4	13.3

Table (5) shows the relation between the pathological condition of the appendix at operation and the frequency of wound sepsis. Patients with grangrenous or perforated appendices had a marked increase in wound sepsis ($P < 0.05$).

T A B L E 5

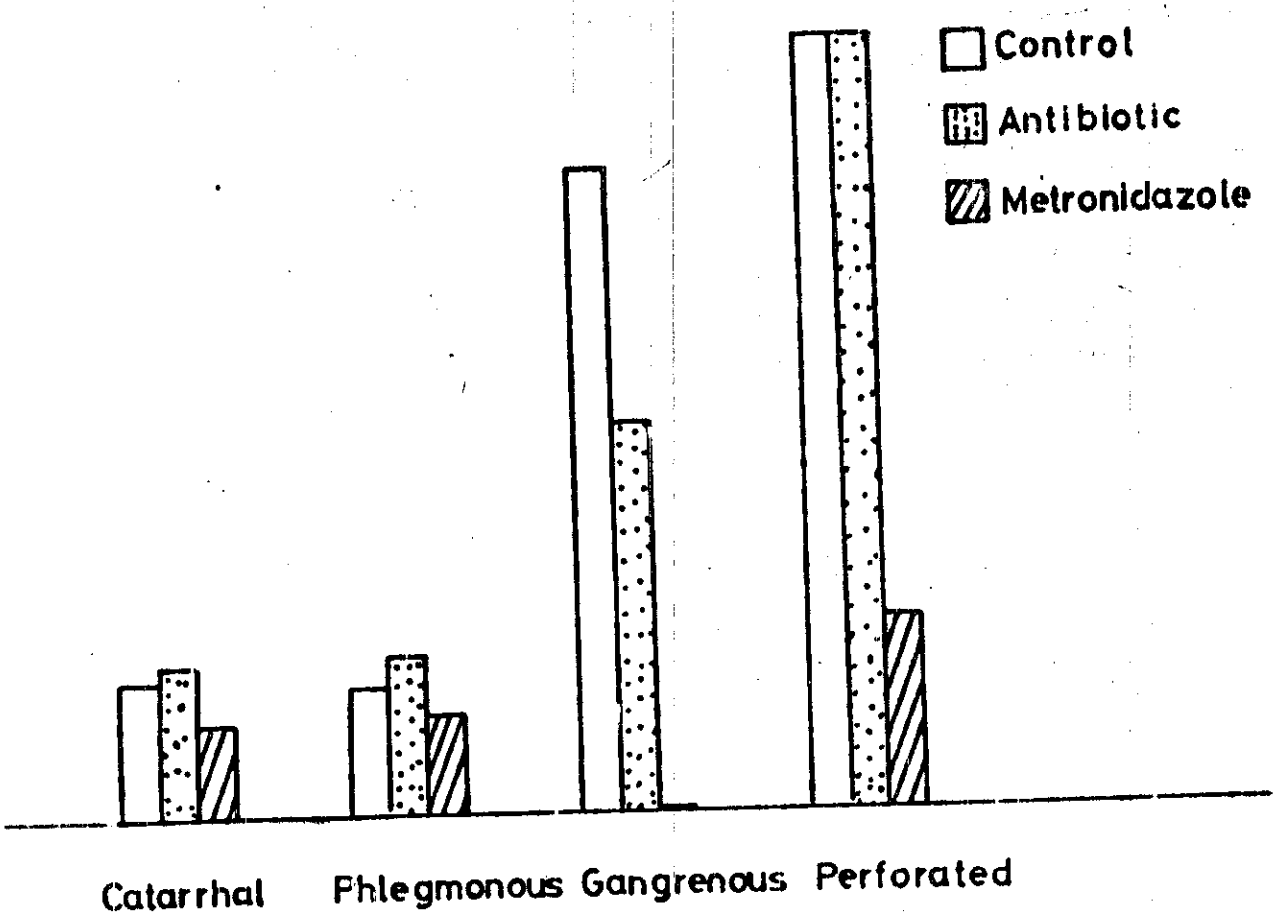
Relationship between pathological state of appendix and wound sepsis

State of appendix	Number of patients		Wound sepsis	
Catarrhal inflammation	29	(32.2%)	5	(17.2%)
Phlegmonous	41	(45.5%)	7	(17 %)
Gangrenous	11	(12.2%)	6	(54.5%)
Perforated	9	(10%)	6	(66.7%)
T o t a l	90	(100%)	24	(27%)

On analysing the wound sepsis rate that occurred in the different pathological states of the appendix in the three arms of the trial (Table 6), there was no significant difference between the three arms in the catarrhal or phlegmonous inflammation of the appendix. However, when the appendix was gangrenous or perforated, metronidazole showed a significant reduction in wound sepsis while no difference was noticed between the control and antibiotic arms (Fig. 1) .

Table (6) Pathological state of Appendices related to wound infection in the three arms.

ıte of App-dix	Total	Control		Antibiotic		Metronidazole	
		Total	Sepsis	Total	Sepsis	Total	Sepsis
ıtarrhal	29	11	2 (18%)	10	2 (20%)	8	1 (12.5%)
ılegmonous	41	12	2 (17%)	14	3 (21%)	15	2 (13.3%)
ıngrenous	11	6	5 (83.3%)	2	1 (50%)	3	0 (0%)
erforated	9	1	1 (100%)	4	4 (100%)	4	1 (25%)
otal	90	30	10 (33.3%)	30	10 (33.3%)	30	4 (13.3%)



g·(1) Wound sepsis in the three arms of the trial.

The duration of post-operative fever was monitored in each patient orally every 12 hours and 37.2°C or more was regarded as a rise in temperature unless it was an isolated reading (Magany et al., 1971) (Fig. 2) .

It is clear that a significant reduction in the duration of post-operative fever (Fig. 2) is seen in the metronidazole group .

Figure (3) shows the relation between the duration of post-operative fever and the pathological condition of the appendix .

Delayed Primary Sutures :

The method of delayed primary sutures which was used is that described by Grosfeld et al. (1968). After closure of the external oblique apponeurosis, the wound is packed with fine mesh gauze. Interrupted fine stainless steel sutures are inserted from the skin through the subcutaneous tissue, over the gauze and left untied. A dry dressing is applied. Five days later the gauze is removed and the wound irrigated with saline. The previously inserted sutures are now tied at bed side. Sutures are removed seven days later, i.e. 12 days post-operatively .

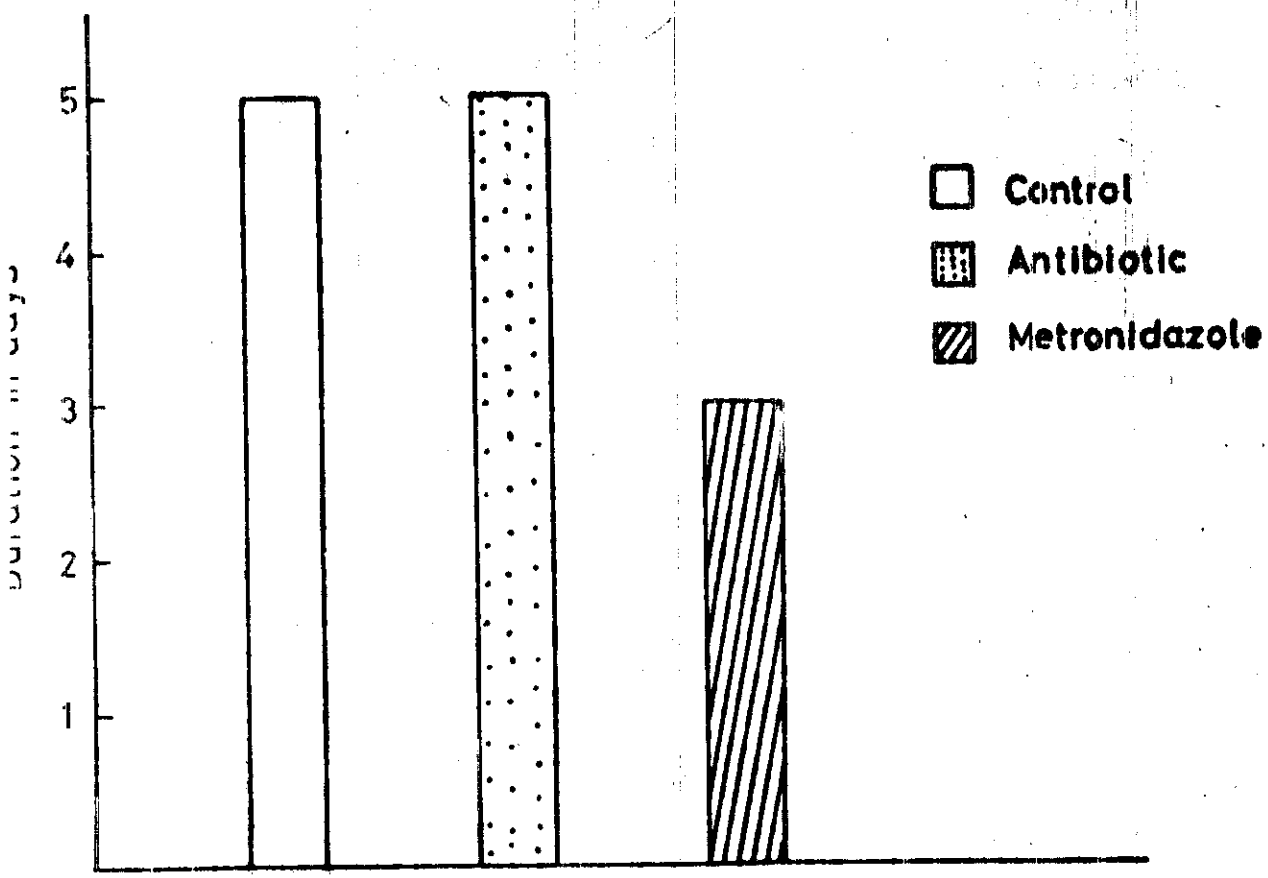
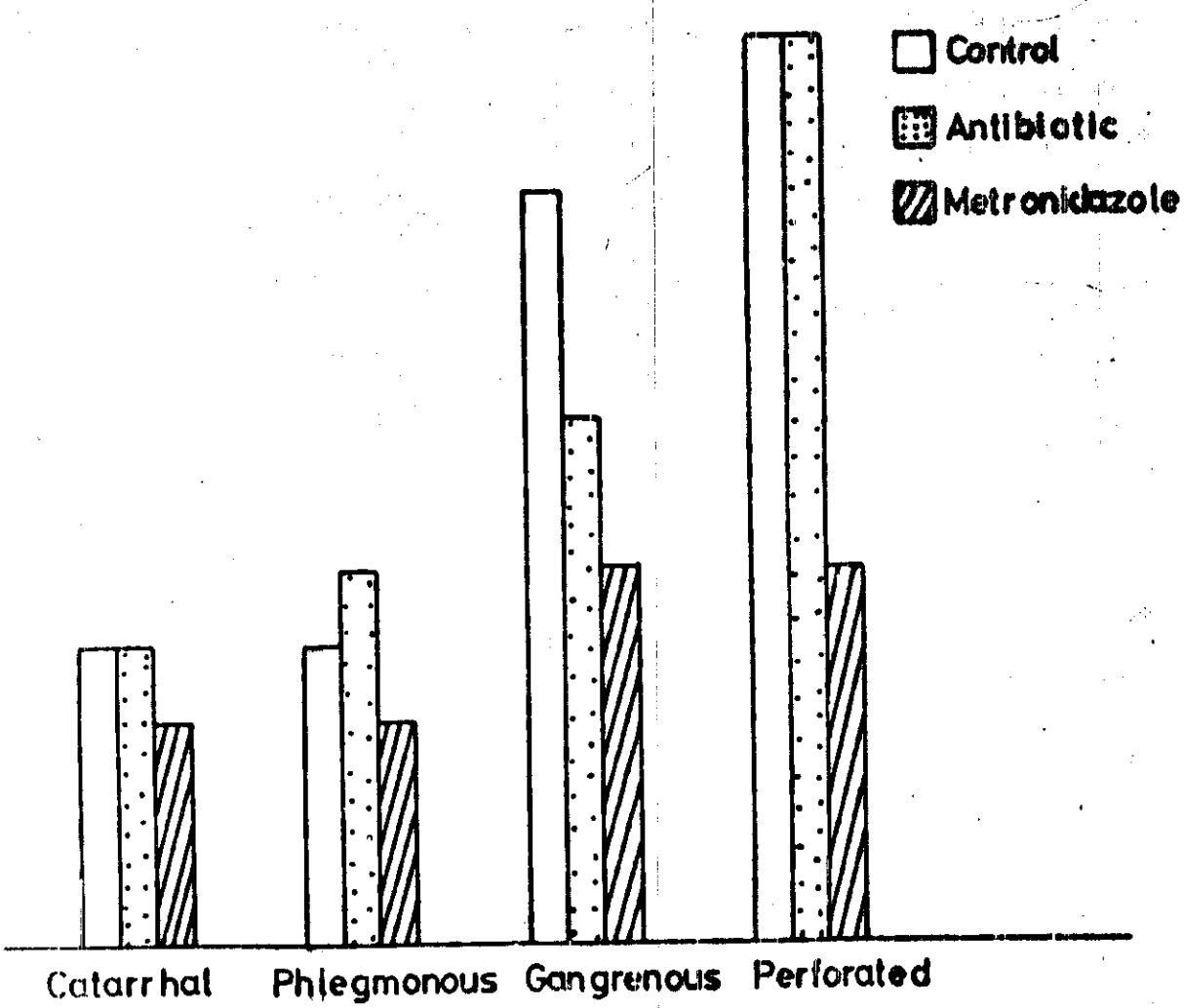


Fig (2) Mean duration of post-operative fever in the three groups.



(3) Relation between the mean duration of post-operative fever the pathological state of the appendix and the treatment

Delayed primary sutures were used in half the cases of gangrenous and perforated appendices. This method reduced significantly post-operative wound sepsis ($P < 0.05$) . (Table 7) .

The 24 patients in whom wound sepsis occurred were randomly allocated into 2 equal groups. The first group was treated with metronidazole. There was a marked reduction in the amount of discharge after an average of two days. The second group received the appropriate antibiotic after doing a culture and sensitivity test. There was a marked reduction in the amount of wound discharge after 3 days (comparable to the two days with metronidazole) . Aerobic cultures from post operative septic wounds grew E. coli (5 cases), staphylococcus aureus (4 cases) , Klebsiella (2 cases), and Proteus vulgaris (1 case) .

able (7) Relation between wound infection state of appendix and method of closure.

tate of Appendix	Primary closure		Delay primary sutures	
	Total	Septic	Total	Septic
Gangrenous	5	4 (80%)	6	2 (33 %)
Perforated	5	4 (80%)	4	2 (50%)
	10	8 (80%)	10	4 (40%