R E S U L T S

Two groups of patients were studied:

Group (A): Including thirty patients (27 males and 3 females) aged between 14 and 65 years old, suffering from cancer bladder with urinary tract infection.

Group (B): Including twenty patients (17 males and 3 females) aged between 15 and 73 years old, suffering from urinary tract infection and have not cancer bladder.

Results of Group (A)

Table (I) shows the following:

1. Bilharzial Ova:

   Twenty one cases (70%) showed bilharzial ova in wet preperations and nine cases (30%) ~~not~~ showed having bilharzial ova.

2. Red cells:

   The red cell count was below 10 red cells /H.P.F. in the urine specimens of nine cases (30%) and below 50 cells/H.P.F. in 16 cases (53.3%). Five cases (16.7%) Showed haematuria.

3. Pus cells:

Pus cell count was between 10-40 /H.P.F. in 14 cases (46.7%) and between 50-100 pus cells /H.P.F. in nine cases (26.7%). Seven cases (23.3%) Showed pyuria.

Organisms isolated:

Table and figure I, show that Pseudomonas pyocyanea was the most common organism being isolated from 14 cases (46.7%) followed by Klebseilla species which was isolated from eight cases (26.7%) then E.coli, which was isolated from six cases (20%).

Proteus mirabilis was isolated from one case (3.3%) and Staphylococcus aureus was isolated also from one case (3.3%) , both of them represented the least incidence.

From this study, no mixed infections were found and anaerobic cultures were done, but no strict anaerobic bacteria were isolated.

Serological identification was done for E.coli isolated from group (A) patients and the results are shown in the following table:

Case No.	Serotype
3	O 114 K 95
6	O 126 K 71
10	———
19	O 128 K 67
25	O 126 K 71
26	———

This Table shows that E.coli of cases number 6 and 25 have the same serotype (O_{126} K_{71}) and E.coli of cases number 10 and 26 are non-typable.

Antibiotic culture sensetivity was done for urine of patients with cancer bladder (Group A) using the antibiotics shown in Table III. Of the thirty urine cultures, twenty three cultures (76.6%) were sensetive to nebcin (tobramycin) and 16 cultures (53.3%) were sensetive amikacin followed by netromycin and cefotaxime (claforan).

Results of Group (B)

Table II shows the following:

Bilharzial ova:

Three control patients (15%) showed bilharzial ova in wet preperations and 17 patients (85%) showed no ova.

Red Cells:

The red cell count was below 20/H.P.F. in 13 control patients (65%) and below 40 red cells /H.P.F. in seven patients (35%). No specimens showed haematuria.

Pus cells:

The pus cell count was between 15-30 /H.P.F. in eleven control patients (55%) and from 30-50 red cells /H.P.F. in eight patients (40%). Only one patient (5%) showed pus cell count over 100/H.P.F.

Organisms isolated:

Table and figure II, Show that E.coli was the commonest organism being isolated from six control patients (30%) followed by Klebseilla species being isolated from five patients (25%) . Proteus mirabilis and Morgani were isolated from four patients (20%) and Pseudomonas species from three patients (15%).

Staphylococcus aureus and albus were isolated from two patients (10%) representing the least incidence.

From this study no mixed infections were found and no strict anaerobic bacteria were isolated from group (B).

Serological identification was done for E.coli isolated from group (B) patients and the results are shown in the following table:

Case No.	Serotype
3	O111 K58
4	O111 K58
7	O124 K72
10	----------
16	O128 K67
17	O119 K69

This table shows that E.coli isolated from cases number 3 and 4 have the same serotype (O111 K58) and E.coli of case number 10 is non-typable.

Antibiotic culture sensetivity was done for urine of patients of group (B) using the antibiotics shown in Table III. Of the twenty cultures, 15 cultures (50%) were sensetive to nebcin (tobramycin) and eleven cultures (36.6%) were sensetive to amikacin followed by nalidixic acid and netromycin.

gentamycin.

Table(I): Bacteriologic examination of urine in patients with cancer bladder (group A).

Case No.	Age in years.	B.Ova	RBCs/ H.P.F.	Pus cells /H.P.F.	Isolated organism
1	56	+ve	6	50	Proteus mirabilis
2	50	+ve	6	50	Klebseilla species
3	62	+ve	12	> 200	E.coli
4	44	-ve	6	30	Pseudomonas species
5	28	-ve	6	30	Klebseilla species
6	63	+ve	50	100	E.coli
7	43	+ve	29	50	Pseudomonas species
8	35	-ve	6	30	Klebseilla species
9	34	+ve	6	40	Klebseilla species
10	65	+ve	6	30	E.coli.
11	40	-ve	6	30	Pseudomonas species
12	45	+ve	12	100	Pseudomonas species
13	40	-ve	12	> 200	Pseudomonas species
14	14	+ve	Hematuria	30	Pseudomonas species
15	21	+ve	12	> 200	Pseudomonas species
16	50	-ve	60	20	Pseudomonas species
17	40	+ve	30	20	Staph. aureus (coagulase +ve)
18	53	+ve	6	30	Klebseilla
19	46	+ve	12	100	E.coli
20	64	+ve	12	> 200	Pseudomonas species
21	46	-ve	12	50	Pseudomonas species
22	54	+ve	Hematuria	30	Klebseilla species
23	42	+ve	Hematuria	30	Pseudomonas species
24	55	+ve	50	> 200	Pseudomonas species
25	63	-ve	20	30	E.coli
26	53	+ve	12	> 200	E.coli
27	40	+ve	Hematuria	50	Pseudomonas species
28	36	+ve	Hematuria	30	Pseudomonas species
29	59	-ve	12	> 200	Klebseilla species
30	28	+ve	30	50	Klebseilla species

Fig.(II): The incidence of isolated organisms in group B (Control Patreints).

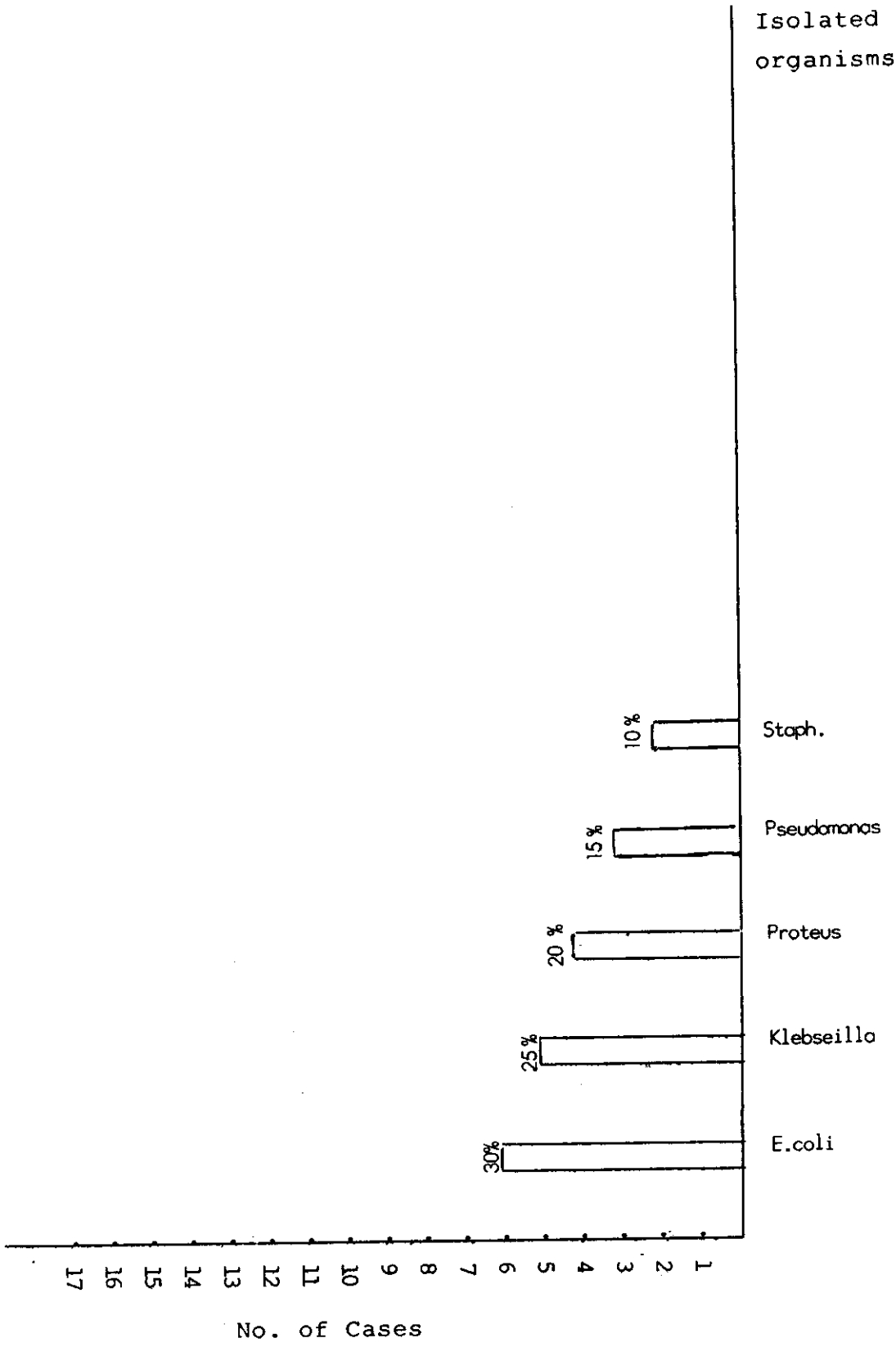

Table (III): Antibiotic sensetivity of Gram -ve bacteria isolated from groups (A) and (B).

Case No.	Polymyxin B	Neomycin	Rifampicin	Kanamycin	Gentamicin	Pyopen	Nalidixic acid	Nebcin	Amikacin	Ampiclox	Kefzol	Nitrofurantion	Netromycin	Cefotaxime
1	+	R	R	R	R	R	R	+	++	R	R	R	R	R
2	R	R	R	R	R	R	++	+	R	R	R	R	R	++
3	R	+	R	+	+	++	++	+	+	+	+	+	++	++
4	R	+	R	R	+	R	R	++	++	R	R	R	++	R
5	R	+	R	++	++	++	R	+	R	++	R	R	++	++
6	R	R	R	+	+	++	+	+	+	++	+	+	+	++
7	R	R	R	R	R	R	R	++	R	R	R	R	R	R
8	R	R	R	R	++	R	++	++	++	+	R	++	++	R
9	+	R	R	R	+	R	++	++	+	R	R	R	+	++
10	R	+	R	++	+	R	+	+	+	R	R	R	+	R
11	R	R	R	R	R	R	R	+	R	R	R	R	R	R
12	R	R	R	R	R	R	R	+	R	R	R	R	R	R
13	R	R	R	R	R	R	R	R	+	R	R	R	R	R
14	R	R	R	R	R	R	R	++	R	R	R	R	R	R
15	R	R	R	R	R	R	R	R	R	R	R	R	R	R
16	R	R	R	R	R	R	R	R	R	R	R	R	R	R
18	R	R	R	R	R	R	++	++	++	R	R	R	+	++
19	R	+	R	+	R	++	++	++	++	++	+	++	R	++
20	R	R	R	R	R	R	R	++	++	R	R	R	+	++
21	R	R	R	R	R	R	R	R	R	R	R	R	R	R
22	R	R	++	++	R	R	R	+	++	R	+	R	+	++
23	R	R	R	R	R	+	R	++	R	R	R	R	R	R
24	R	R	R	R	R	R	R	++	R	R	R	R	R	R
25	R	+	+	++	+	R	R	++	R	R	+	+	++	++
26	R	R	R	R	R	R	R	++	+	R	R	++	++	++

R - resistant

\+ moderately sensetive

++ highly sensetive

Cont. Table III.

27	R	R	R	R	R	R	R	R	R	R	R	R	R	R
28	R	R	R	R	R	R	R	R	R	R	R	R	R	R
29	R	+	R	+	++	+	++	++	++	+	++	+	++	++
30	R	R	R	R	R	++	R	R	+	R	+	R	+	++
C2	R	+	R	++	++	++	R	++	++	++	++	R	++	+
C3	R	R	R	R	R	R	++	++	++	R	+	++	R	++
C4	R	R	R	R	++	R	+	+	R	R	+	R	R	+
C5	R	+	R	+	R	R	R	+	+	R	R	R	+	R
C6	R	+	R	+	+	R	R	+	+	R	R	R	+	+
C7	R	++	+	++	++	++	+	++	+	++	++	+	++	R
C9	+	+	R	++	++	R	+	++	++	R	R	R	+	++
C10	R	R	R	R	R	R	+	+	+	R	R	R	R	++
C11	R	R	R	R	R	R	R	R	R	R	R	R	R	R
C12	R	R	R	R	R	R	R	+	++	R	R	R	+	R
C13	R	R	R	R	R	R	R	+	+	R	R	R	R	+
C14	R	R	R	R	R	R	++	R	R	R	R	R	R	R
C15	R	R	R	R	R	R	R	R	R	R	R	R	+	R
C16	R	R	R	R	+	R	++	++	R	R	++	R	+	++
C18	R	R	R	R	+	R	++	++	+	R	R	R	++	++
C19	R	+	R	+	+	R	+	+	+	R	R	R	R	R
C20	R	R	R	R	R	R	R	++	R	R	R	R	R	R

Cont. Table (III): Antibiotic sensetivity of Gram +ve bacteria isolated from groups (A) & (B)

Case No.	Nebcin	Amikacin	Ampiclox	Kefzol	Nitrofurantion	Netromycin	Cefotaxime	Bacitracin	Colistin sulphate	Amoxycillin	Erythromycin	Garamycin	Tetracycline	Ampicillin
17	R	R	R	R	R	++	R	+	R	+	+	++	++	R
C1	++	++	R	R	R	+	+	R	R	R	R	++	R	R
C8	+	++	R	R	R	R	R	+	R	++	+	R	R	++

D I S C U S S I O N

Infection is considered to be one of the major fatal complications of cancer patients despite therapeutic advances that have made remissions more frequent and prolonged survival (Dionigi et.al. 1980). Patients suffering from neoplastic diseases are highly susceptible to infection because of altered immune mechanisms. (Armstrong et.al. 1971). One of the most important malignant diseases is cancer bladder which may or may not be associated with bilharziasis of that organ. The bilharzial type is more sever and common (Makar 1942). A causal relationship between schistosoma haematobium and cancer of the urinary bladder had been suspected since the turn of this century (Ferguson 1911). This causal link was suggested by the tendency of bilharziasis to induce squamous metaplasia in the bladder mucosa (Elem and Purohit 1983). Morrison and Cole 1976, suggested other predisposing factors that induce bladder cancer, including occupational exposures, tobacco use, tryptophane metabolites, pelvic irradiation, coffee drinking, analgesic abuse and urinary tract infection. The present study verifies the relation between cancer bladder and urinary tract infection. Thirty cases of cancer bladder patients with significant, bacteruria of different age groups (14-65 years old) were studied for bacterial organisms in urine in comparison with twenty cases of simple urinary tract infection

of different age groups (16 - 73 years old).

All cancer cases were chosen before operation but some of them were subjected to instrumentation as cystoscopy and catheterization. As regards urine samples of 7 cases (23.3%), out of thirty cases showed severe pyuria. The tumour itself particularly when ulcerating or fungating will make a good nidus for the growth of microbial agents , as well as the effect of chematherapy and radiotherapy (Carel et.al. 1977).

In all cases of group A , there was a single infective agent with no mixed infection as shown by table I.

Gram negative bacilli represents the vast majority of infective agents. These organisms are common inhabitants of the intestine and probably get to the urinary tract from the bowel (Tanagho 1981).

Ries and kaye 1976 stated that, the most common organisms detected in urinary tract obstructed by malignany were Gram -ve enteric bacilli.

Pseudomonas pyocyaneas was isolated from 14 cases (46.7%), klebseilla from 8 cases (26.7%), E.coli from 6 cases (20%) and proteus from only one case (3.3%).

only one urine sample showed a pus cell count more than 100 pus cell /H.P.F. which is explained by the association of urinary bilharziasis, and the remaining urine samples showed pus cell count below 50 pus cell/H.P.F. Also the number of urine samples showing bilharzial ova was 3 samples (15%).

In the control group, the organisms isolated in their order of frequency were , E.coli (30%) , klebseilla (25%), Proteus (20%), Pseudomonas (15%) and staphylococci (10%) . Twenty bacteruries were studied by Laughlin et.al. 1978, and found that, of the twenty cases, 12 (60%) were infected with E.coli, 4 (20%) with klebseilla speci and 4 (20%) with proteus species. The incidence of staphylococcal infection was greater in control group (10%) rather than in patients with cancer bladder (3.3%).

The incidence of pseudomonas species was greater in patients with cancer bladder (46.7%) than in the control group with simple urinary infection (15%) , this was attributed to frequent instrumentations to which these patients were subjected in the course of their managment in addition to low resistance, (Ries and Kaye 1976).

Sever haematuria was observed in five patients (16.7%) with cancer bladder, this was attributed to the frequent bleeding from tumours in addition to manipulations, while this was not noticed in case with simple urinary infection.

Culture sensetivity for the isolated organisms was done for both the case and control groups by disc diffusion method (Cruikshank 1982). The organisms isolated in patients with cancer bladder were sensetive to the following antibiotics in their order of frequency, nebcin, netromycin, Cefotaxime, nalidiixic acid, gentamicin , kefzol, kanamycin, neomycin, pyopen, ampiclox, palymyxin B, nitrofurantion and rifampicin. Of the thirty urine cultures, twenty three cultures (76.6%) were sensetive to nebcin, and 16 cultures (53.3%) were sensetive to amikacin followed by netromycin and cefotaxime.

In the control group, the organisms were sensetive to the following antibiotics in their order of frequency, nebcin, amikacin, nalidixic acid, netromycin, cefotaxime, gentamicin, kanamycin, neomycin, kefzol, ampiclox, pyopen, palymycin B and rifampicin.