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Role of Cystone in Management of Urinary Tract Infections

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ABSTRACT

The effects of Cystone therapy were studied in this comparative trial on 297 patients complaining principally of burning micturition and frequency of micturition. Twenty-two cases had some complications like kidney and bladder stones.

The study was in 2 phases: in the first the efficacy of therapy and in the second the efficacy of therapy on the rate of recurrence of infection. In the former it was observed that when Cystone was added to the usual alkalizer + specific antibiotic regimen, relief from symptoms was quicker than with alkalizer + specific antibiotic.

In the second phase the incidence of recurrence of infection and side-effects was much less with the addition of Cystone to the usual regimen than with alkalizer + specific antibiotic. It took longer for the urine to return to normal with the latter regimen.

INTRODUCTION

Urinary tract infections are quite frequent and are difficult to eradicate (Freedman 1971, Stanley 1972, Brumfitt *et al.* 1973). Some workers impressed by the frequency with which chronic, symptomless urinary tract infections may present after an acute infection with serious and even fatal consequences, would advise maintenance therapy of antibacterial agents at low dose for as long as 3 months (Laurence, 1973, Bailey 1971). Gut bacteria being the principal cause of urinary tract infection, if antimicrobials are used for long periods, the result is disturbed bacterial flora in the colon and drug resistance (Freedman and Epstein 1977).

In the present study we have explored the role of Cystone as:

1. An adjuvant to antimicrobial therapy in urinary tract infection (UTI).
2. Maintenance therapy once the acute phase of urinary tract infection has subsided, and
3. Chemoprophylaxis of urinary tract infection.

Cystone was chosen because it has proven its efficacy in burning micturition and acute urinary tract infection (Garg and Singh 1985, Prasad 1980) and been used for long-term therapy (for four to six months and even longer) in urolithiasis and various other urinary disorders (Chaudhury 1982, Chatterji 1982) without significant side-effects.

MATERIAL AND METHODS

The present study was done in 297 patients of either sex over a period of about 2 years, complaining of burning and frequency of micturition. Before starting therapy a urine sample was collected under strict sterile conditions. Immediately a portion of the sample was used for microscopic examination. If this showed presence of pus cells in increased number, then the sample

was sent for culture and sensitivity report. The specific antimicrobial drug was used depending upon the test report.

A study of the clinical characteristics of the patients with UTI revealed the following:

a)	Burning micturition alone	80 cases
b)	Frequency of micturition alone	67 cases
c)	Fever alone	32 cases
d	Burning micturition plus frequency of micturition	63 cases
e)	Burning micturition plus frequency of micturition plus fever	55 cases
	Total:	297 cases

Further, 22 cases of UTI were complicated as follows:

a)	Urethral dilation for stricture urethra	2 cases
b)	Nephrolithiasis	5 cases
c)	Ureteric stone	1 case
d)	Cystolithiasis	2 cases
e)	Catheterisation following surgery	6 cases
f)	Catheterisation following neurovascular accident	1 case
g)	Associated with diabetes mellitus	5 cases
	Total:	22 cases

The remaining 275 cases of UTI were without complications. Of the 297 UTI cases, 251 reported for the first time, while the remaining 46 were having recurrent infection.

The study was carried out in two parts: in the first the efficacy of therapy, and in the second its efficacy on the rate of recurrence of infection and side-effects, if any, were assessed.

Part 1

Out of 297 patients, 91 patients who showed increase of only epithelial cells in their urine were classified in group A. The remaining 206 who had increased number of pus cells were divided into Group B and C with 103 in each group.

Group A was given Cystone, 2 tabs. t.d.s. plus an alkalizer, 2 tsp. t.d.s. for 10 days. Pending culture and sensitivity reports, patients of Groups B and C, received Cystone 2 tablets t.d.s. plus alkalizer, 2 tsp. t.d.s. and alkalizer only, 2 tsp. t.d.s. respectively, for the same duration (10 days). On receiving the culture and sensitivity reports, the appropriate antibiotic was added to patients of Group B (Cystone and alkalizer) and Group C (alkalizer only), till such time as the pus cells decreased to normal limits. Microscopic examination of the urine was repeated after every 3 days and the duration of antimicrobial therapy recorded.

Part-2

To check recurrence of infection, if any, maintenance therapy for 3 months was administered to the 206 patients who had shown positive urine culture. They were divided into 3 subgroups viz. Group I, II and III. Group I (68 patients) received only antimicrobial therapy in low doses. Group II (69 patients) received Cystone with an antimicrobial drug, while Group III (69 patients) received only Cystone as maintenance therapy. Any recurrence of urinary symptoms was recorded and in that event microscopic examination of the urine was repeated.

RESULTS AND DISCUSSION

Part 1

It is evident from Table 1 that Group A (91) patients, with increased frequency and burning micturition but non-infective, showing only an increase in number of epithelial cells, did not require any antimicrobial therapy and were relieved of their symptoms by Cystone plus an alkalizer.

Table 1: Group distribution of patients

Group	No. of patients	Microscopic examination of urine	Drugs given	Results	Side effects
A (Cystone + alkalizer)	91	Increased epithelial cells	Cystone 2 tabs. t.d.s. for 10 days + alkalizer 2 tsp. t.d.s.	Relieved of symptoms	Nil
B (Cystone + alkalizer + antibiotic)	103	Increased pus cells	Cystone 2 tabs. t.d.s. + alkalizer 2 tsp. t.d.s. + antimicrobial for 6-9 days	Relieved of symptoms	Occasional dyspepsia diarrhoea flatulence
C (Alkalizer + antibiotic)	103	Increased pus cells	Alkalizer 2 tsp. t.d.s. + antimicrobial for 9-12 days	Relieved for symptoms	Occasional dyspepsia diarrhoea flatulence

Group B patients (Cystone + alkalizer + specific antimicrobial) were relieved of their symptoms and acute infection in 6-9 days, while Group C patients (alkalizer + specific antimicrobial) took 9-12 days. Thus, the addition of Cystone to the usual antimicrobial plus alkalizer regimen for urinary tract infection, reduces the duration of the acute phase of infection and symptoms, and the cost of antimicrobial therapy by about 25%.

From Table 2 it can be seen that most of the patients (53 out of 103) of Group B (Cystone + alkalizer + specific antimicrobial) were relieved of their infection in 6 days, while only 39 out of 103 Group C patients (alkalizer+specific antimicrobial) took 9 days.

The total duration of antimicrobial therapy for curing the infection was more (12 days) in Group C patients (alkalizer + specific antimicrobial), while it was only 9 days. In Group B patients (Cystone + alkalizer + specific antimicrobial). So the addition of Cystone to the usual regimen for urinary tract infections (antimicrobial + alkalizer) reduces the duration and cost of therapy.

Table 2: Showing the number of urine examinations and days needed for the pus cells to drop within normal limits

Group B (Cystone + alkalizer + antimicrobial)		
No. of examinations	Days needed	No. of patients
One	3	21
Two	6	53
Three	9	29
	Total	103
Group C (alkalizer + antimicrobial)		
No. of examinations	Days needed	No. of patients
One	3	16
Two	6	24
Three	9	39
Four	12	24
	Total	103

Part 2

As far as maintenance therapy is concerned, Table 3 reveals that Cystone alone proved superior (with recurrence in only 5 patients and side effects in 7), than both low-dose antimicrobial therapy (recurrence in 16 patients and side-effects in the majority) and antimicrobial plus Cystone therapy (recurrence in 2 patients and side-effects in the majority).

Table 3: Results of various regimens in maintenance therapy

Group	No. of patients	Drug regimen	Results
I	68	Antimicrobial	Recurrence of symptoms in 16 patients Dyspepsia in 26 patients Flatulence in 39 patients Diarrhoea in 13 patients
II	69	Cystone + antimicrobial	Recurrence of symptoms in 2 patients Dyspepsia in 24 patients Flatulence in 43 patients Diarrhoea in 12 patients
III	69	Cystone	Recurrence of symptoms in 5 patients Dyspepsia in 3 patients Flatulence in 4 patients.

CONCLUSIONS

The addition of Cystone to the usual regimen for urinary tract infection (antimicrobial + alkalizer) reduces both the duration and cost of therapy.

For maintenance therapy, Cystone appears ideal as chances of recurrence of symptoms are very few, with least side-effects. At the same time the cost of maintenance therapy is much lower when compared to low-dose antimicrobial therapy.

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