A STUDY OF URINARY TRACT INFECTION IN 1000 ELEMANTRY SCHOOL CHILDREN

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SUMMARY

The incidence of symptomatic urinary tract infection in 1000 children aged 6-11 years old was studied over 8 months. U.T.I. was diagnosed if bacterial counts in two consecutive samples exceeded 100.000/ml. The incidence of U.T.I. was 0.9 per cent. Urinary pus cell counts were also carried our and sometimes found to be misleading. 9 children find to have truce bacteriuria and 4 of them had radiological abnormality. Urine cultures of all cases yielded 90 per cent E.Coli.

INTRODUCTION

Urinary tract infection (UTI) is one of the most common types of bacterial infection and in selected populations it is a source of considerable morbidity and mortality. It iss estimated that up to one-third of all women will have at least one episode of UTI during their lifetime (6). UTI is common in infants and children with a female preponderance except during early infancy (4). About three per cent of all girls contract symptomatic UTI before the age of 11 years (1). Half of them will have recurrences and 5-10 per cent of them will develop renal scarring. Children over 4 years of age are usually not at risk of renal scarring in previously undamaged kidney. At this age lower UTI's predominates and the main problem is the proness to recurrent infections, which is characteristic of many girls (3). Because of the high risk of recurrence and the risk of renal scarring, all girls after their first UTI should be followed up. Our aim was to study UTI in elementary school children and identifiy those girls at risk of developing renal damage.

PATIENTS AND METHODS

The number of children in this study, aged 6-11 years old during the 8 month survey was 1000 (500 boys, 500 girls). A clean midstream urine specimen analized with combur test BR (Multiplex 10 5 G) with this technique leucocyte bacteria, protein pH and red blood cells were investigated. Suspected specimens were centrifuged for 5 minutes at 2000rpm and the sediment examined under high power field 5-10 leucocytes per high power field in the sediment from a clean midstream urine specimen is considered to be the upper limit of normal count. Infection was diagnosed when bacterial counts in two consecutive specimens equalled or exceeded 100,000 of the some organisms per ml in pure culture (7, 8).

To quantitative bacteria, platinum loops that deliver 0.01 ml to streak urine onto ages plates were used. After incubating at 37 C for 24 hours the number of colony-forming units were counted, and the total number of organisms originallly present in the specimen was estimated by multiplying the colony count by 10.

The intial infection was treated with a 7 day course of an appropriate antibacterial agent usually trimethoprim-sulfomethoxasole or ampicillin. Children with recurring infections received long-term antibiotic treatment. All the patients referred hospital for assesment and most underwent radiological investigations (5). We followed up all the patients regularly.

RESULTS

In this study as a result of combur BR test 94 of 1000 children were initially suspected, but true bacteriuria was seen in only 9 children. All of them were symptomatic with frequent painful urination; one girl with enuresis and another with loin pain. Escherinchia Coli was 90 per cent frequent infecting organism. The second most frequent infecting agent was Protcus sp.

Of the 9 children with a recurrenht UTI 4 had radiological abnormality. In two paitents there were Grade I reflux, one had upper urinary tract infection with renal paranchimal scaring and calyceal clubbing. The other two patients had voiding disfunction including detrusor instability.

DISCUSSION

It is difficult to know the exact incidence of UTI in childhood. In 1979 Dickinson found that 3.1/1000 girls and 1.7/1000 boys ages 0-14 presented annually with a first symptomatic UTI (3). In our study the incidence was 0.9 per cent 9 bacteriuric children were all girls. No boy was found with bacteriuria. UTI in elementary school children may involve the lower UTI or may involve both the upper and lower tracts. In our study UTI is more common in girls then in boys. Once a girl develops UTI, she is more likely to develop subsequent infections.

In our study the diagnosis of UTI was made on no fewer than two cultures of clean voided, midstream urine in which the same organism was present in significant titers. E. Coli was 90 per cent frequent organism.

In 1972 Wein studied the UTI in 402 girls and found the same result (9).

We received good results from 5 patients due to urine culture therapy, 4 patients showed relapse and we applied a long term therapy. The most important sequela of UTI in childhood is renal paranchymal scarring. It's prevention is the most important goal of therapy.

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