<u>Case Report</u>

TREATMENT OF RECURRENT ACUTE CYSTITIS WITH SULBACTOMAX: A CASE REPORT

V. SRINIVAS

Nightingale Hospital, Nagargiuna Sagar Road, Santhosh Nagar, Hyderabad 500059. Email: masilaragunath@gmail

ABSTRACT

UTI is most common in woman and UTI is often recurrent, there are many reasons for recurrent UTI in woman, the most relevant cause may be due to developing resistance. E.coli is the most important uropathogen its isolates in 2009-2010 from urinary tract infection form hospitalized patients in countries world wide has shown ESBl resistance rates were high in Asia pacific region of 27%.This case report is presented here to address the need for altering the available antibiotic regimen for recurrent UTI and we suggest here Sulbactomax (Ceftriaxone + Sulbactum + Ethylene-diamine-tetracetic acid) as an empirical therapy in the treatment of UTI to prevent recurrent UTI.

Keywords: UTI- Urinary tract infection, Ceftriaxone +Sulbactum+EDTA , ESBL- Extended spectrum betalactamases, *E.coli,*

INTRODUCTION

Urinary tract infection (UTI) is one of the commonest infections which occur more frequently in women than in men[1]. Uncomplicated infections caused by , usually *Escherichia coli*, a potential reservoir for recurrent infection ascend from the perineum into the bladder and overcome host innate immunity. A diagnosis of UTI can be made on the basis of the history and clinical examination. However, only 65% of women presenting with symptoms of cystitis will have a confirmed infection[2]. For woman with uncomplicated cystitis empirical treatment with a 3 day course of antibiotics will achieve cure in 85-90% ;[3]. The choice of antibiotic will depend on the clinical scenario and may differ in patients with renal impairment or cystic disease. A short-term antibiotic therapy [4] is the treatment of choice for each episode of acute, uncomplicated cystitis. this therapy effectively leads to a rapid disappearance of clinical symptoms and a reduction of morbidity. Short-term treatment has several advantages over longer use of antibiotics. But short-term administration of antibiotics also has a lower impact on periurethral, vaginal, and rectal flora compared with longer treatment because it exerts a lower selection pressure for antibiotic-resistant strains. Uropathogen resistance has indeed become a serious problem for certain types of antimicrobials in the recent Antimicrobial Resistance Epidemiology in Females with Cystitis [5]. This case represents a diagnosis and treatment of recurrent acute cystitis (UTI) caused by extended spectrum beta-lactamase – positive (ESBL+) of *E.coli* with sulbactomax (Ceftriaxone + sulbactum +EDTA).

CASE REPORT

Young primigravida female 32yrs of age presented to our hospital with a typical symptoms of cystitis such as fever, supra pubic pain, hematuria and dysuria. Her medical history included a history of UTI during post elective cesarean 5 month earlier. She was empirically treated with amoxicillin daily for 5 days and was relieved of all the UTI symptoms during the first episode. There was no family history of recent gastrointestinal symptoms. Condom was used as a contraceptive method in her sexual life. Physical examination reveled a body temperature of 39.5⁰C. The patient was admitted to our hospital. She was started with Amoxicillin + Clavulanic acid empirically. Blood and early morning mid stream urine was collected and sent for analysis and culture. Even though she was started with amoxicillin + Clavulanic acid for two days there was no clinical improvement, her body temperature was 39.8C, and her suprapubic pain, dysuria and hematuria symptoms still persisted. The results of urinalysis were positive for blood nitrates,and leukocytes. And the urine culture showed ESBL strains producing *E.coli* highly sensitive to Sulbactomax {(ceftriaxone + Sulbactum + Ethylenediamine tetracetic acid (EDTA)} and not to Ciprofloxacin, Amoxicillin, Amoxicillin+clavulanic acid, Cefuroxime, Ampicillin, Ceftriaxone, ampicillin sulbactum, which were only moderately sensitive, except amoxicillin which was not sensitive at all. The antibiotic treatment was changed from Amoxicillin + Clavulanic acid to Sulbactomax (ceftriaxone+Sulbactum+ EDTA) 3gm once a day therapy. Clinical improvement was noted soon after 48hr of initiation of Sulbactomax . The patient was discharged after 5 days of hospital stay, She had completely cured from all the symptoms she was advised and discharged. she was followed up for 6months post discharge from our hospital, and it revealed no recurrence of UTI symptoms.

DISCUSSION

The most common cause of uncomplicated UTI is *E.coli* [6]. In our case the primary infection might have occurred during perioperative stage probably due to indwelling catheter[7], moreover patients are more susceptible to noscomial infection. Recurrent UTI are most common; 20-30% of adult woman will have recurrence within 3-4 months after an initial UTI [1], this was true in our case also, as our patient had experienced UTI with an interval of 4 months and several factors are known to increase a patients susceptibility to recurrent UTIs such as recent use of antibiotics. Currently, antibiotic prophylaxis is recommended as a first line strategy for the prevention of recurrent UTIs . However, more and more uropathogens become resistant to certain types of antimicrobials. Hence, alternative prophylactic strategies are gaining importance. For instance a study on multiple drug resistance pattern in Urinary Tract Infection patients in Aligarh found that % *E.coli* resistance was 90% for ampicilin, 60% for chloramphinicol, 70% for erythromycin 23% for norfloxacin, 60% for rifampicin, 60% for sulphamathiazole, and 79% for tetracycline and most of the isolates showed multiple antibiotic resistance[8]. A recent publication [9] on Antimicrobial susceptibility of global inpatient urinary tract isolates of *Escherichia coli*: results from the Study for Monitoring Antimicrobial Resistance Trends (SMART) program: 2009–2010 has reported a Overall, 17.9% *E. coli* were ESBL positive and varied by geographic region: Asia/Pacific (27.7%), Latin America (23.3%),Europe (18.8%), Middle East/Africa (16.2%), and North America (7.4%). Only 2 agents demonstrated N 90% susceptibility for ESBL-positive *E. coli* : imipenem (99.7%) and ertapenem (98.0%). Amikacin and piperacillin– tazobactam were 10– 15% less active with susceptibilities of 87.1% and 84.4%, respectively. Antibiotic resistance is developing day to day for the older drugs as in our case a very strong broad spectrum antibiotic Amoxicillin + Clavulanic acid failed to produce clinical improvement even after 48hrs of initiation of therapy. From this case report we found good clinical improvement with the use of Sulbactomax, with no side effects even though it was given intravenously, the patient showed no discomfort as compared to other IV drugs and follow up as an outpatient also did not find any recurrence even after 6months.

CONCLUSION

In view of changing pattern of bacterial resistance and multiple resistance to common drugs for UTI , only higher antibiotics such as imepenem, ertapenem are highly sensitive but frequent use of these drugs would also result in developing resistance of their own.

Therefore Reserving higher antibiotics would most likely benefit their long term effectiveness. From our experience we suggest to use 'Sulbactomax' as an empirical therapy which looks promising in patients with recurrent UTI in the view of preserving higher antibiotics for the future.

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