A Comparative Study of Oral Azithromycin-to Erythromycine, Carbenicilline and Doxycycline in Patients with Chronic Bacterial Prostatitis

KRONİK BAKTERİYEL PRO S TATİTÜ HASTALARDA ORAL AZİTROMİSİNİN ERİTROMİSİN, KARBENİSİLLİN VE DOKSİSİKLİN'LE ETKİNLİĞİNİN KARŞILAŞTIRMALI ARAŞTIRILMASI

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SUMMARY

The efficacy of erythromycin, carbenicilline and doxycycline were compared with azithromycin in and open comparative study. The patients with chronic bacterial prostatitis received azithromycin orally 500 mg day for three days, three times. Totally three drug therapies were applied to each patient. Other antibiotics were given at normal doses for thirty days. Four steril containers were labeled VB1, VB2, EPS and VB3 (VB~ Voided bladder urine, EPS=Expressed prostatic secretion). Segmented urine samples (VB1, VB2, VB3) and expressed prostatic fluid samples were taken for cultures prior to therapy and ten days later. Most of the cultures were negative after therapy. At the end of the 2nd month, the patients treated with azithromycin have had a 65% cure rate and other have had a 55% cure rate. No significant adverse effect was seen in the patient during the course of therapy.

Key Words: Azithromycin, Chronic bacterial prostatitis, Therapy

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ÖZET

Eritromisin, karbenisillin ve doksisiklinin etkinliği açık, karşılaştırmalı bir çalışmada azitromisin ile karşılaştırıldı. Kronik bakteriye! prostatitli hastalar 3 gün süreyle günde 500 mg oral azitromisin aldılar ve bu kür 3 kez tekrarlandı. Diğer antibiyotikler normal dozlarda 30 gün süreyle verildi. Tedavi öncesi ve tedaviden on gün sonra kültür için segmente idrar VB7, *VB2, VB3 olarak işaretlenen steril tüplere ve prostat masajı sıvısı EPS olarak işaretlenen bagetti tüplere alındı. Tedaviden sonra kültürlerin çoğu negatifti, iki ayın sonunda azitromisinle tedavi edilen hastalarda %65, diğerlerinde ise ortalama* %55 *kür oranı belirlendi. Tedavi süresince hastalarda önemli bir yan etki görülmedi.*

Anahtar Kelimeler: Azitromisin, Kronik bakteriyel prostatit, Tedavi

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Prostatitis is a condition in adults associated with a variety of complaints located in the lower abdomen and perineum (1). Chronic bacterial prostatitis (CBP) is a nonacute infection of the prostate caused by one or more specific bacteria. Although the causative agents typically are gram negative aerobes, some clinicians believe that gram-positive bacteria (eg. staphylococci) may cause prostatitis; unlike prostatic infections due to gram-positive bacteria persist and lead to relapsing recurrent urinary tract infection (2).

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Because the diffusion of antibiotics in the prostatic tissue is difficult and cure rates are low, new drugs have been investigated lately. In this study, we compared azithromycin which is a new azalide antibiotic with erythromycine, doxycycline and carbenicilline that are used classically in chronic bacterial prostatitis.

MATERIALS AND METHODS

Segmented samples of initial, midstream urine and prostatic secretions obtained by prostatic massage and terminal urine were obtained for culture from 60 patients from August 1993-March 1994. The age of the patients ranged from seventeen to sixty-two years (mean 29.1 years). Complaints were pain, irritative bladder (Table 1). 8 patients (13,3%) were observed with complaints lasting at least two years. All patients

Table 1. Complaints and symptoms of patients with chronic bacterial prostatitis

Complaints	Number of patients
Pain	
Penoscrotal	30
Suprapubic	23
Perineal	13
Groins	11
Back	6
During ejaculation	5
Irritative bladder symptoms	
Frequency	24
Dysuria	7
Other symptoms	
Urehtral écoulement	8
Hematospermia	2

Table 2. Results of urine, prostatic exprímate, urethral cultures and number of positive cultures

Results of culture	VB1 (Urethra)	VB2 (Bladder)	EPS (Prostat)	VB3 (Prostat)
Staphylococcus aureus	10	—	37	37
Enterococci	8	—	14	14
Pseudomonas		2	3	3
Escherichia coli	12	32	3	3
Staphylococcus epidermidis	15	12	1	1
Negative	15	14	2	2

Table 3. Results of treatment versus use of antibiotics

Antibiotics	Number of patients	Improved (%)
Azithromycin	20	65
Erythromycin	20	60
Carbenicilline	10	50
Doxycycline	10	55

presented with prostatitis syndrome were accepted as chronic bacterial prostatitis. Azithromycin and erythromycine groups consist of 20 patients, other drug groups (Carbenicilline and doxycycline) 10 patients.

In this prospective study the patients were analysed according to the following parameters: age, duration of complaints, kind of complaints, urine analysis, urine culture, expressed prostatic fluid sample culture, urethral culture, choice of antibiotics and result of treatment.

Segmented samples were used for cultures ten days and two months. Clinical and microbiologic improvement was accepted as cure.

Ki square test was used for statistical analysis.

RESULTS

In this study, no significant abnormalities were seen in 72 percent of the samples and there were 0-5 erythrocytes per high-power field in the 22 percent of the patients more than 5 erythrocytes per high power field in 9 percent. 68% of the urine samples showed no leukocytes, and in 24% and 8% of the urine samples 0-10 and more than 10 leukocytes per high power field were found respectively.

The results of the urine and urethral cultures are presented in Table 2.

Since our laboratory was not convenient to isolate the Ureaplasma urealyticum, we couldn't perform It. The patients who had negative bacterial cultures were not included in the study. In the prostatic cultures, the most common causative agents were Staphylococcus aureus (64%) and enterococci (24%). In the urine cultures, Escherichia coli was common (53%). Other organisms were Staphylococcus epidermidis and Pseudomonas aeruginosea.

Azithromycin was administered 500 mg daily, po. for three days and after 7 days interval the administration was restarted. In this manner three courses were applied for this drug. For the other drugs, the period of treatment was one month. Their doses were as follow erythromycine 500 mg po qid, carbenicilline 500 mg po qid, doxycycline 100 mg po twice a day. Statistical analysis showed that azithromycine has better results than doxycycline and carbenicilline but no statistical differences were encountered between azithromycine and erythromycine (According to urine samples cultures).

Evaluation of the results of treatment with regard to the antibiotics is shown in Table 3.

COMMENT

Although prostatitis appears to be one of the most common pathologic conditions encountered in urology, there are still some questions related to its etiology, diagnosis and tteatment.

The age distribution in the study is comparable with that of reported elsewhere (3). Penoscrotal and suprapubic pain were the most common symptoms in the patients. The duration of complaints were varied between several months and frequently more than a year. The duration of complaints before treatment was not a significant factor in determining the success rate of the treatment.

For diagnosis of patients with prostatitis syndromes, the fourglass test is used. However, the major problem in diagnosis of these patients is interprete the evaluation of this test.

The causative organism In bacterial prostatitis are similar in type and incidence to those responsible for

urinary tract infection: Common strains of E.coli clearly predominate. Infections caused by species of Proteus, Enterobacter, Serratia, Klebsiella, Pseudomonas and other les common gram-negative organisms occur less frequently (4).

On the other hand, the role played by gram-positive bacteria in the etiology of prostatitis is contraverslal. Most investigators agree that strains of Enterococcus fecalis cause CBP and are related with recurrent enterococcal bacteriuria.

However, Drach (5) reports that gram-positive bacteria are frequently localized by culture to the prostatic secretions of men with prostatitis. More recently, Bergman and colleagues (6) analysed the bactériologie findings in patients with chronic prostatitis and reported an apparent causative role for gram positive bacteria in several patients. In our study, staphylococcus aureus (64%) and enterococci (24%) were the most common causative agents.

Despite prolonged administration of these agents, failure to eradicate bacterial prostatitis is usually 30% to 40%. We used azithromycin, a new azalide antibiotic, and obtained comparable results. The cure rate was 65%, whereas the other antibiotics had a 55% cure rate. In addition, it has some advantages for example; it can be taken once a day for three days, and it is a tolerable agent.

Finally, we believed that azithromycin is a preferable antibiotic in the patients with chronic bacterial prostatitis because of its long term high tissue concentration and efficacy.

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