

ANTIBIOTIC OINTMENT IN THE MANAGEMENT OF RECURRENT, COMMUNITY-ACQUIRED BACTERIAL CYSTITIS IN WOMEN – OBSERVATIONAL STUDY

UPOTREBA ANTIBIOTSKIH MASTI U LEČENJU PONOVIH BAKTERIJSKIH CISTITISA U ŽENA – OPSERVACIONA STUDIJA

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Summary

Acute bacterial cystitis is the most common form of community – acquired urinary tract infections in women. Urinary tract infections are the second most common reason for antibiotic prescription in the USA. There is a need for alternative treatments that would help to avoid the use of systematic antimicrobials thus reducing the incidence of microbial resistance and side effects of the drugs. The aim of this study is to evaluate the role of antibiotic ointment treatment in recurrent UTIs in women. We followed up 34 non – pregnant women with a previous history of recurrent UTIs who were instructed to apply antibiotic ointment Bacitracin/Neomycin, locally, on the external urethral meatus area, once a day, for 30 days. 88% of patients responded to the treatment, with no further recurrences in 67.6% of cases and there was a reduced (< 3 cases per year) recurrence in 20.5% of patients. Bacitracin/Neomycin ointment could be a safe, cheap and successful tool for recurrent UTIs in women. To our best knowledge, this is the first published pilot – study of topical antibiotic ointment usage in management and prevention of recurrent urinary tract infections. We need a double blinded, randomized study with a larger number of patients in order to collect more evidence to support this conclusion.

Key words: urinary tract infections; antibiotic ointment.

Sažetak

Akutno bakterijski cistitis je najčešće zapaljenje urinarnog trakta u žena. Urinarne infekcije su drugi najčešći uzrok propisivanja antibiotika u SAD. Upravo zbog toga, kao i rezistencije bakterija na sistemsku antibiotsku terapiju ali i neželjenih efekata terapije, danas se sve više ispituju i alternativni načini lečenja urinarnih infekcija. Cilj ovog rada je da ispita potencijanu ulogu antibiotskih masti u lečenju rekurentnih infekcija urinarnog trakta u žena. Pratili smo 34 žene, koje nisu bile gravidne, sa prethodnom istorijom rekurentnih urinarnih infekcija i koje su bile instruisane da aplikuju antibiotsku mast Bacitracin/Neomicin lokalno, na spoljašnji otvor mokraćnog kanala, jednom dnevno, u trajanju od 30 dana. U ispitivanoj seriji 88% pacijentkinja je imalo benefit od ove terapije, bez rekurencije infekcije u 67.7% slučajeva, dok se kod 20.5% pacijentkinja broj rekurencija urinarne infekcije smanjio na manje od tri za godinu dana. Na osnovu ovih rezultata, lokalna terapija Bacitracin/Neomicin antibiotskom mašću može biti jedan od potencijalnih jeftinih terapijskih izbora u lečenju rekurentnih urinarnih infekcija, bez značajnih neželjenih efekata. Po nšem saznanju, ovo je prva pilot studija u kojoj se ispituje potencijalna mogućnost lečenja i prevencije rekurentnih urinarnih infekcija lokalnom antibiotskim terapijom. Svakako, dalja randomizirana, duplo slepa ispitivanja, na većem broju ispitanica su neophodna za viši stepen pouzdanosti ovakve tvrdnje.

Ključne reči: infekcije urinarnog trakta; antibiotske masti

INTRODUCTION

Acute bacterial cystitis is the most common form of community – acquired urinary tract infections (UTIs) in women (1). Frequent recurrent UTIs might affect 10 – 20% of women after the initial UTI episode (2,3). Although uncomplicated recurrent UTIs are considered to be a benign condition, they can have a significant impact on the quality of life and healthcare costs (2). Recurrent UTIs with more than 3 episodes per year generally require antibiotic prophylaxis (3). There is a need for alternative treatments that would help to avoid the use of systematic antimicrobials thus reducing the incidence of microbial resistance and side effects of the drugs (4,5).

METHODS

34 nonpregnant women (≥ 18 years old) with documented community – acquired recurrent cystitis (at least 3 or more episodes per year) were successively recruited for the study at our outpatient service. The study was approved by the local institutional review board and informed consent was obtained from the patients. History and medical files were used to confirm the frequency of recurrent cystitis over the preceding 12 months, the absence of underlying urological abnormalities, and mode treatment. Acute bacterial cystitis was confirmed by

Table 1. - Patients data and treatment outcome

Patient code	Age (years)	Disease duration (years)	No of episodes (over the preceding 12 months)	Isolated pathogen	Follow up (months)	No of recurrences during follow up
1	24	2	6	E.coli	24	0
2	56	8	5	E.coli	24	1
3	20	2	7	Enterococcus	23	0
4	62	6	4	Pseudomonas	Lost to F/U	NA
5	19	2	7	E.coli	23	0
6	58	5	6	Proteus	23	0
7	34	10	3	Enterococcus	22	1
8	28	7	6	E.coli	22	1
9	23	4	5	E.coli	22	0
10	42	10	6	E.coli	21	0
11	52	6	5	Klebsiella	Lost to F/U	NA
12	22	3	6	Enterococcus	20	2
13	28	7	5	E.coli	20	0
14	55	5	6	E.coli	19	0
15	63	10	6	Proteus	18	0
16	22	4	5	Enterococcus	17	0
17	43	3	4	E.coli	16	0
18	25	7	6	E.coli	16	0
19	20	3	7	Proteus	15	0
20	18	1	7	E.coli	15	1
21	26	4	3	E.coli	14	0
22	24	2	5	E.coli	14	0
23	50	4	3	Proteus	13	1
24	51	2	4	Enterococcs	13	0
25	29	2	6	E.coli	Lost to F/U	NA
26	24	3	4	E.coli	12	0
27	30	5	5	Klebsiella	12	3
28	29	3	5	Enterococcus	11	1
29	55	4	4	E.coli	11	0
30	21	2	4	E.coli	10	0
31	25	2	3	E.coli	10	0
32	32	3	5	Enterococcs	10	0
33	22	3	4	E.coli	9	0
34	26	4	6	E.coli	9	2

urinalysis and positive culture defined as the isolation of uropathogen at 10^5 CFU/ml. Gynaecological examination, ultrasonography of the urinary tract and post-voided residual urine measurement were done to exclude the presence of intrauterine devices and obstructions, respectively. Acute cystitis was first treated with antimicrobials according to EAU guidelines. Thereafter, the women were instructed to liberally apply antibiotic ointment, 1 g of which contains 62.5 IU of Bacitracin and 825 IU of Neomycin (B/N ointment), over their external genitalia around external urethral orifice and perineum, once a day, for 30 days. The patients were seen on a monthly basis or any time in case of infection recurrence.

RESULTS

At the end of the follow up period (range 24 to 9 months), 30 patients were evaluable. If women lost to follow up and those having 3 or more recurrences per year are considered to be treatment failures, then 30 (88%) patients responded to the treatment, with no further recurrences in 23 (67.6%) cases and a reduced number (< 3 per year) of recurrences in 7 (20.5%) patients. Side effects were not observed and the patients were highly satisfied with this treatment modality. It should be noted that prophylactic application of B/N ointment was effective in both pre- and postmenopausal women. (Summarized in Table 1.)

DISCUSSION

In most cases the infection is caused by the patient's own intestinal bacteria which, having colonized the periurethral area, invade the bladder mucosa via the urethra (6). One possible way to prevent re-infection, might be to block the spread of microorganisms from the anal area to the external genitals in females. We thus tested the effect of a widely available antimicrobial ointment applied over the external genital area on the recurrence rate of community-acquired recurrent cystitis in women.

The described management of frequent recurrent community-acquired female cystitis may be worth considering, having in mind its safety and convenience. As most young women are concerned about the effect of antibiotics on their possible pregnancy and are unwilling to take drugs over a long period of time, due to recurrent UTIs, this method might offer high compliance and reasonable efficacy. Despite the obvious weakness of an uncontrolled, blinded and randomized observational study, the results obtained are very encouraging, approaching the efficacy rates of most antibiotic prophylaxis regimens to date (6,7,8). To test the possibility of the ointment exerting its effect simply as a physical barrier to the spread of bacteria, a randomized study should be designed to compare the effect of antibiotic ointment and its vehicle.

CONCLUSION

Bacitracin/Neomycin ointment could be a safe, cheap and successful tool for recurrent UTIs in women. To the best of our knowledge, this is the first published pilot-study with topical antibiotic ointment usage in management and prevention of recurrent urinary tract infections in women. We need a double blinded, randomised study with a larger number of patients for gathering more evidence for this conclusion.

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