

# Treatment of Mucopurulent Cervicitis with Doxycycline

Sonthit Sutthijumroon MD,  
Somchai Tungphaisal MD,  
Verapol Chandeying MD.

*Department of Obstetrics and Gynaecology,  
Faculty of Medicine, Prince of Songkla University,  
Songkla, Thailand*

**Abstract:** *The study of treatment of mucopurulent cervicitis with doxycycline hyclate was carried out among 56 patients attending the Sexually Transmitted Diseases Clinic, Songklanagarind Hospital, from January 1 to December 31, 1987 to evaluate its efficacy. Those patients with infections of N. gonorrhoeae, herpes simplex virus, C. albicans, T. vaginalis and non-specific vaginitis were excluded. The characteristics of mucopurulent cervicitis included the presence of yellowish endocervical secretion and the presence of 10 or more polymorphonuclear leukocytes per microscopic field of 1000 magnifications. The patients were given 200 mg doxycycline hyclate orally initially followed by 100 mg twice daily for 8 days. Their sexual partners were treated likewise. Those receiving antibiotics within 2 weeks, pregnant women and women during lactating period and prostitutes were excluded from this treatment. A follow-up visit was scheduled 1-2 weeks after the completion of treatment. The results were, by self assessment, good and unchanged in 92.85 % and 7.14 % respectively. However, clinical evidence of yellowish endocervical secretion disappeared in 86.84 % with reduction of the presence of 10 or more polymorphonuclear leukocytes in 71.42 % (Thai J Obstet Gynecol 1989;1: 21-24)*

**Key words:** mucopurulent cervicitis, doxycycline

Mucopurulent cervicitis represents the portion of the iceberg which is largely on the clinical diagnosis of urethritis in males and on the treatment of the sexual partner of men with urethritis. Since mucopurulent cervicitis in females produces less symptoms than male urethritis it is of paramount importance in the control of the gonococcal and the chlamydial infection<sup>(1)</sup>. With the presence

of yellowish endocervical secretion and the increased number of polymorphonuclear leukocytes in smears from endocervical specimen such findings correlated well with isolation of *C. trachomatis*<sup>(2)</sup>.

Broad spectrum antibiotics are employed to treat mucopurulent cervicitis, including doxycycline hyclate<sup>(3)</sup>. It was the purpose of this study to evaluate

the efficacy of doxycycline hyclate in the treatment of such a condition.

## Materials and Methods

The study was carried out in the Sexually Transmitted Disease Unit, Songklanagarind Hospital from January 1 to December 31, 1987. The participants were sexually active women, 14-45 years of age, presented with one of the following: hypervaginal secretion not associated with mens, offensive vaginal discharge, and yellowish vaginal discharge.

The vaginal discharge was collected during vaginal examination and was examined for *C. albicans*, *T. vaginalis* and a smear was examined for predominant organisms. Endocervical discharge was also collected and examined for characteristics, cultured for *N. gonorrhoeae* and smeared for polymorphonuclear leukocyte count. The smear was dried and stained with methylene blue in conventional manner<sup>(4)</sup>. The polymorphonuclear leukocytes were counted under the microscope with magnification of 1000 in 5 nonadjacent fields. A specimen contained that 10 or more polymorphonuclear leukocytes was accounted for a significant finding of mucopurulent cervicitis. Those with infections of *N. gonorrhoeae*, herpes simplex virus, *T. vaginalis*, *C. albicans* and anaerobic vaginosis were excluded from the study.

The patients were given doxycycline hyclate 200 mg orally initially followed by 100 mg twice daily for 8 days, provided they were not pregnant or during lactating period and were not

prostitutes. Their sexual partners were treated likewise. They were advised to return for follow-up examination 1-2 weeks after completion of the treatment. The results of treatment were classified as follows:

- Good - both the clinical assessment and the laboratory testing were improved
- Fair - clinically improved, but laboratory testing not improved
- Stable - both the clinical assessment and laboratory testing were not improved

The patients were also asked for the adverse drug reactions or untoward side effects as well. Statistical evaluation was carried out by the Z-test.

## Results

There were 56 women enrolled in this study. The epidemiological characteristics are shown in Tables 1 and 2. All patients returned for follow-up examination and the results of treatment are shown in Table 3. It can be seen that clinical improvement was achieved in 92.85%. However, by only examining the cervical secretion, the yellowish discharge disappeared only in 86.84 %. In considering the presence of 10 or more polymorphonuclear leukocytes decreasing, 71.42 % was achieved.

Only 5 patients reported as having had untoward side effects from treatment. These were dizziness, nausea, nausea and vomiting, experienced in 2, 1 and 2 patients respectively.

**Table 1.** The epidemiological characteristics

Symptoms	Before treatment number N = 56	per cent	After treatment number N = 56	per cent	P value
Hypervaginal secretion not associated with menses	54	96.42	24*	42.85	< 0.001
Foul smelling discharge	19	33.92	0		
Yellowish discharge	21	37.50	0		
Itching	24	42.85	0		
Discomfort	16	28.57	4	7.14	< 0.01
Dysuria	4	7.14	0		
Dyspareunia	1	1.78	0		
Post coital bleeding	1	1.78	0		

\* 4 Cases with hypersecretion and 20 cases decreased in amount

**Table 2** Microscopic findings of mucopurulent cervicitis

Symptoms	Before treatment number N = 56	per cent	After treatment number N = 56	per cent	P value
Mucopus	38	67.85	5	8.92	< 0.001
PMN leukocytes 10 or more	56	100	16	28.57	

**Table 3.** Results of treatment

Level	Number N = 56	Percent
Good	32	57.14
Fair	20	35.71
Stable	4	7.14

## Discussion

As mentioned early that the aetiol-

ogy of mucopurulent cervicitis is still unknown, specific treatment is, therefore, not yet established. However, as data reviewed had indicated, clamydial infection should always be suspected in women with mucopurulent cervicitis.<sup>(1,2)</sup> Since the diagnosis of clamydial infection by laboratory means are not feasible in some places, the antibiotics given should be those effective against *C. trachomatis*.

Among antibiotics used, tetracy-

cline hydrochloride or doxycycline are recommended by the Centers for Disease Control<sup>(5)</sup>. A high efficacy rate, 90-98 %, has been achieved with the use of oxytetracycline,<sup>(6,7)</sup> while the rate of 100 % with tetracycline<sup>(8)</sup>.

Although it was reported that with the use of doxycycline for the treatment of mucopurulent cervicitis a 100 % efficacy rate was achieved,<sup>(3)</sup> the result of the present study seems to be slightly less effective. However, the use of doxycycline yielded a higher efficacy rate than our previous study<sup>(9)</sup>.

Since the efficacy rate of treating mucopurulent cervicitis is high while the side effects are less, it is concluded that the present treatment regimen is simple and effective for use.

### Acknowledgements

The authors wish to thank Ciba-Geigy Co. for providing doxycycline hyclate used in this study.

### References

1. Holmes KK. Lower genital tract infections in women: Cystitis/urethritis, vulvovaginitis, and cervicitis. In: Holmes KK, Mardh PA, Sparling PF, Wiesner PJ, eds. Sexually transmitted diseases. New York: McGraw-Hill, 1984: 557-89.
2. Brunham RC, Paavonen J, Stevens CE, et al. Mucopurulent cervicitis-the ignored counterpart in women of urethritis in men. *New Engl J Med* 1984; 311: 1-6.
3. Ripa KT, Svensson L, Mardh PA, Westrom L. Chlamydia trachomatis cervicitis in gynecologic outpatients. *Obstet Gynecol* 1978; 52: 698-702.
4. Mardh PA. Bacterial, chlamydiae, and mycoplasmas. In: Holmes KK, Mardh PA, Sparling PF, Wiesner PJ, eds. Sexually transmitted diseases. New York: McGraw-Hill, 1984: 829-856.
5. Centers for Disease Control. 1985 STD treatment guidelines. *MMWR* 1985; 34: 755-1085.
6. Oriel JD, Ridgway GL, Chamouloff T. Comparison of erythromycin stearate and oxytetracycline in the treatment of nongonococcal urethritis. *Scott Med J* 1977; 22: 375-9.
7. Rees E, Tait IA, Hobson D, Johnson FW. Chlamydia in relation to cervical infection and pelvic inflammatory disease, in nongonococcal urethritis and related infections. In: Hobson D, Holmes KK, eds. Washington DC: American Society of Microbiology, 1977: 67-76.
8. Stamm WE, Holmes KK. Chlamydia trachomatis infection of the adult. In: Holmes KK, Mardh PA, Sparling PF, Wiesner PJ, eds. Sexually transmitted diseases. New York: McGraw-Hill, 1984: 258-70.
9. Chandeying V, Sutthijumroon S. Minocycline in the treatment of mucopurulent cervicitis. *Songkla J Med* 1987; 5: 391-4.