

Original Article

EFFICACY OF UNANI FORMULATIONS IN CHRONIC ENDOCERVICITIS: A RANDOMIZED COMPARATIVE STUDY

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ABSTRACT

Objective: To compare the efficacy of Unani formulation in chronic endocervicitis.

Methods: A parallel, comparative randomized trial was conducted at Govt. Nizamia General Hospital, Hyderabad from 1998 to 2000 in 50 patients (25 in each group) with sign and symptoms of endocervicitis. The intervention was administered per oral and locally for 10 d from day 7 to day 16 of each menstrual cycle up to three consecutive months in both groups (A and B). Group A received 10 g powder of *mako khusk*, *chobchini*, and *gul surkh* with equal quantity of sugar orally, twice daily and locally douching with 100 ml of *joshandae* of *barge neem* (5g), and *gule tesu* (5g) was done per vaginum followed by insertion of *humool* (pessary) of *loabe khatmi* (5g), and *safoof sadberg* (3) mixed with *roghan neem* (10 ml). Group B received 7.5 g powder of *ushba* and *kasni* mixed with equal quantity of sugar orally, twice daily. *Humool* of *loabe hulba* (5g), and *raswat* (3g) with *roghane gul* was kept per vaginum. The outcome was inter-group comparison of effectiveness of Unani medicine by observing change in subjective and objective parameters of endocervicitis. Chi-square/Fisher Exact tests were carried out to observe the inter group comparison.

Results: The demographic characteristics were statistically not significant ($P > 0.05$) between the groups. No statistical difference was noted in the subjective and objective parameters of endocervicitis ($P > 0.05$), showing that both groups were comparable.

Conclusion: Group A and B were comparable in ameliorating sign and symptoms of endocervicitis because of anti-inflammatory, analgesic and anti-microbial effects. Further, randomized controlled trials are recommended.

Keywords: Abnormal vaginal discharge, Endocervicitis, Randomized trial, Unani formulation.

INTRODUCTION

With the changes in the lifestyles and demographic profiles in developing countries, non-communicable diseases are emerging as an important health problem which demand appropriate control programme before they assume epidemic propagation [1]. Worldwide, reproductive tract infections (RTI's) are a major cause of gynecological morbidity. Further, morbidity and mortality is comparatively very high in developing countries. The consequences of RTI's are several and may be severe in some cases [2]. Over 19 million STIs occur annually as per the Centre for Disease Control (CDC) and prevention estimation. The etiology of infective endocervicitis is variable and consists commonly of STIs [3]. Endocervicitis is defined as "inflammation of the columnar epithelium of the endocervix or inflammatory process in cervical epithelium and stroma or infection of the endocervix including stroma and glands" [4]. Although few population-based data are available to estimate the true prevalence of cervicitis, it appears to be an exceedingly common finding among women and is seen in a wide variety of clinical settings [5]. Chronic inflammation of the endocervix is very common, about 35-85% of women [6] and approximately, one-third of all women with vaginal discharge have endocervicitis. It is often asymptomatic in gonorrhoea, chlamydia, and *T vaginalis* infections [3]. Clinically presence of purulent exudates, more than 10 white blood cells per high-power field (HPF) on cervical gram staining, ectopy of cervix with erythema, edema and friability are clinical features of endocervicitis [7]. The other symptoms are often nonspecific, dysuria, urinary frequency, and intermenstrual or postcoital bleeding and in long-standing cases low abdominal or low back pain is also noted [3].

Unani scholars surmised that *galbae ghair tabayi khilt*, *asbabe sabiq* or *asbabe kharija* are causes of *waram unqur rahim* (endocervicitis). *Usr-i-hamal* (difficult labour), *isqat* (abortion), *ehtibas-i-tamth* (amenorrhoea) and *kasrati-i-jama* (frequent sexual acts) are some of the causes of *asbabe sabiq* or *asbabe kharija*. Ibn Sina described that *ajsam al khabisa* (micro organism) as one of the causes of endocervitis along with *akhlat* [4]. *Waram unqur rahim muzmim*

(chronic endocervicitis) comes under *waram barid*. Razi described that causes of *waram unqur rahim* and *waram rahim* are same [8]. He also assumed that there will be pain and fever in inflammation of the cervix, the discharge will be copious in infected cases and clear without bad odour in uninfected case [9].

Conventional medicine includes therapeutic modalities such as antibiotics, antiseptics, electro-diathermy, cryotherapy and other surgical interventions [6]. However, they have their own side effects and complications. Therefore, patients are turning towards an alternative system of medicine that is easily available, cost-effective, safe, and non-surgical. In Unani medicine, the treatment of endocervicitis is based on two main principles, *tahleel* (dissolution) and *tajweef* (desiccation) and the drugs which have dissolution and desiccation properties are known to have *muhallil* (anti-inflammatory) and *mujaffif* (desiccators) properties respectively.

Till date none of the studies have validated and documented comparative effect of *mako khusk* (*Solanum nigrum* fruit), *chobchini* (*Simlax china* root), *gul surkh* (*Rosa damascene* petals), *barge neem* (*Melia azadirachta* leaves), *gule tesu* (*Butea frondosa* flowers), *roghan neem* (oil of *Melia azadirachta*), *loabe khatmi* (*Althaea officinalis* seed's mucilage), *sadberg* (*Calendula officinalis* petals), and *ushba* (*Hemidesmus indicus* root), *kasni* (*Cichorium intybus* leaves), *loabe hulba* (*Trigonella foenum-graecum* seed's mucilage), *raswat* (*Berberis vulgaris* extract), *roghane gul* (*Rosa damascene*) in endocervicitis. As these drugs have been comprehensively described in Unani literature to have *muhallil waram* (anti-inflammatory), *dafe taffun* (antimicrobial), *mulattif* (demulcent), and *musaffie khoon* (blood purifying) properties [10,11]. Hence, this study was carried out to compare the effectiveness of two different formulations in *waram unqur rahim muzmim*.

MATERIALS AND METHODS

Study design

A comparative, single centre, parallel, a simple randomized trial was conducted at Govt. Nizamia General Hospital, Hyderabad between

July 1998 and 2000. The protocol was approved by NTR University of Health Sciences, Andhra Pradesh and written informed consent was obtained. Each group had 25 patients, allotted randomly in a 1:1 ratio after screening by lottery method.

Participants

Married women, aged 20 to 45 y with clinical features of endocervicitis were included. Unmarried women, pregnancy, lactating women, malignancy, adenomyosis, salpingo-oophritis, pelvic Tb, HIV, gross cardiac and renal diseases were excluded.

Procedure

Thorough history included detail demographic data (name, age, marital status, occupation, religion and social economic status), physical examination and investigations of each patient was included in the study for diagnosis of endocervicitis. To evaluate endocervicitis related sign and symptoms pelvic examination was performed. Abnormal vaginal discharge, lower abdominal pain referring to the thigh and lower limbs, low back ache, dysmenorrhea, dyspareunia, pruritus vulvae and dysuria were subjective parameters.

The objective parameters were inflammation with or without signs of infection, oedema, nabothian follicle, erosion/ectopy, congestion of cervix seen by per speculum examination and tenderness felt by bimanual examination. Haemogram, erythrocyte sedimentation rate, VDRL and random blood sugar were done to exclude general diseases at baseline. Ultrasonography, cervical swab culture and Pap smear were done to exclude the pelvic pathology.

Progression or regression of symptoms and signs were recorded at each follow up during three consecutive months of treatment and one follow-up was conducted after three months to see reoccurrence of the disease. Any adverse effects were documented and patients fail to follow the protocol and/or lost to follow up or developed any serious adverse effects were withdrawn.

Intervention

The intervention was administered per oral and locally for 10 d from day 7 to day 16 of each menstrual cycle up to three consecutive

months in both groups (A and B). Group A received 10 g powder of *mako khusk*, *chobchini*, and *gul surkh* with the equal quantity of sugar orally, twice daily. Douching with 100 ml of *joshandae* of *barge neem* (5g), and *gule tesu* (5g) was done per vaginum followed by insertion of *humool* (pessary) of *loabe khatni* (5g), and *safoof sadberg* (3) mixed with *roghan neem* (10 ml). Group B received 7.5 g powder of *ushba* and *kasni* mixed with equal quantity of sugar orally, twice daily. *Humool* of *loabe hulba* (5g), and *raswat* (3g) with *roghane gul* was kept per vaginum.

Outcome

The outcome was to compare the effectiveness of Unani medicine between the groups by observing the change in subjective and objective parameters of endocervicitis.

Statistical analysis

Results on continuous measurements were presented on mean±SD and results on the categorical measurements were presented in Number (%). A P value<0.05 was considered as significant. Chi-square/ Fisher exact test has been used to find the homogeneity of samples on categorical scale. Statistical analysis for the efficacy of Unani formulation was performed to observe inter-group comparison

RESULTS

During the study period a total number of 70 patients were screened for endocervicitis and 15 patients were excluded from the study for different reasons and remaining fifty patients were subjected to preliminary investigations and randomly allocated to the each group (n=25).

The baseline variables were almost comparable and statistically not significant (P>0.05) (table 1).

Random blood sugar was within the normal limit, and VDRL was negative in all patients. In all patients, punch biopsy and Pap smear showed chronic non-specific cervicitis and inflammatory smear respectively. None of the patients had dysplasia or carcinoma in situ. The subjective and objective parameters of endocervicitis are summarized in table 2 and 3 respectively.

Table 1: Demographic characteristics of patients in both groups

Parameters	Group A (n=25)	Group B (n=25)	Total (n=50)	P Value
Age (y)	30.76±6.31	33.48±6.44	32.12±6.46	
≤20	02(8)	0	02(4)	0.37
21-25	05 (20)	05(20)	10(20)	
26-30	07(28)	03(12)	10(20)	
31-35	07(28)	08(32)	15(30)	
36-40	02(8)	06(24)	08(16)	
41-45	02 (8)	03(12)	05(10)	
Socio-economic status				
Upper class	0	0	0	1.00
Upper middle Class	0	0	0	
Lower middle Class	5(20)	4(16)	9(18)	
Upper lower	20(80)	21(84)	41(82)	
Lower	0	0	0	
Parity				
Nullipara	4(16)	2(8)	6(12)	0.36
1-3	11(44)	12(48)	23(46)	
4-6	6(24)	10(40)	16(32)	
>6	4(16)	01(4)	5(10)	
Duration of illness in months				
<6	13(52)	12(48)	25(50)	1.00
6-12	03(12)	03(12)	6(12)	
13-18	0	01(4)	1(2)	
>18	09(36)	09(36)	18(36)	
Family planning				
Nil	07(28)	06(24)	13(26)	0.96
Barrier method	02(8)	03(12)	05(10)	
OCP	04(16)	03(12)	07(14)	
IUCD	03(12)	04(16)	07(14)	
Tubectomy	09(36)	09(36)	18(36)	

Data presented: No (%); P>0.05, not significant; Test Used: Chi-square/Fisher Exact test.

Table 2: Distribution of patients according to subjective parameters in both groups

Subjective parameters	Group A (n=25)			Group B (n=25)			P value
	B. T	Cured	No response	Cured	No response	P value	
White discharge	25 (100)	21(84)	4 (16)	25 (100)	22(88)	3(12)	0.91
Backache	22(88)	20(60)	2 (8)	20 (80)	18(72)	2(8)	0.98
Lower abdominal pain	18(72)	16(64)	2(8)	16(64)	15(60)	1(4)	0.91
Dysmenorrhea	07(28)	06(24)	1(4)	02(8)	02(4)	0	0.83
Itching of vulva	05(20)	5(20)	0	04(16)	02(8)	2(8)	0.51
Dyspareunia	02(8)	2(8)	0	03(12)	02(8)	1(4)	1.00
Burning micturition	02(8)	02(8)	0	01(4)	01(4)	0	1.00

Data presented: No(%); P>0.05, not significant; BT: Before treatment; Test Used: Chi-square/Fisher Exact test

Table 3: Distribution of patients according to objective parameters in both groups

Cervix	Group A (n=25)			Group B (n=25)			P value
	BT	Cured	No response	BT	Cured	No response	
Hypertrophy	08 (32)	06(24)	02(20)	08(32)	05(20)	03(12)	0.81
Inflamed	25(100)	22(88)	03(12)	25(100)	21(84)	04(16)	0.91
Nabothian follicles	05(20)	02(8)	03(12)	05(16.7)	01(8)	04(16)	1.00
Erosion	08(32)	06(24)	02(8)	09(36)	07(28)	02(8)	0.96

Data presented: No(%); P>0.05, not significant; BT: Before treatment; Test Used: Chi-square/Fisher Exact test.

Table 4 summarizes the results of cervical swab culture.

Table 4: Cervical swab culture before and after treatment in both groups

Cervical Swab Culture	Group A (n=25)		Group B (n=25)	
	BT	Growth absent AT	BT	Growth absent AT
<i>Staphylococcus</i>	02(8)	02 (8)	03(12)	02 (8)
<i>Trichomonas vaginalis</i>	03(12)	02 (8)	02(8)	01 (4)
<i>Streptococcus</i>	03(12)	02 (8)	04(16)	03 (12)
<i>E. Coli</i>	02(8)	0	02(8)	01 (0)
<i>Candida albicans</i>	03(12)	0	03(12)	0
<i>Klebsiella</i>	01(4)	0	02(8)	0
Sterile	11(44)	-	09(36)	-

Data presented: No (%); BT: Before Treatment; AT: After Treatment

DISCUSSION

The inter-group comparison showed that both groups was equally effectively in ameliorating the sign and symptoms of endocervicitis with no statistical significant difference (P>0.05) in subjective and objective parameters. Group A ingredients like *mako khusk*, *chobchini*, *gul surkh*, *barge neem*, and *gule tesu*, *loabe khatmi*, *safoof sadberg* have *munzij* (concoctive), *muhallil waram* (anti-inflammatory), *musakkine alam* (analgesic), *mulattif* (demulcent), and *muqawwie aam* (general tonic properties) [10-12]. Group B ingredients like *ushba*, *kasni*, *loabe hulba* (5g), and *raswat*, *roghane gul* have *muhallil waram*, *musakkine alam* (analgesic), *mulattif* (demulcent), and *muqawwie aam* (general tonic properties)[10, 11, 12]. Hence, both groups had the similar effect for reducing sign and symptoms of endocervicitis. Further these drugs are pharmacological proven for anti-inflammatory, analgesic, antioxidant and antimicrobial effects. *S. nigrum* is pharmacologically proven for analgesic, anti-inflammatory and antimicrobial activities. The antibacterial and antifungal activities of *S. nigrum* species is probably because of steroidal alkaloid glycosides. The glycoprotein has been shown to stimulate apoptosis partly via reduction of nitric oxide (NO) in HCT-116 cells and NO has been associated with analgesic and anti-inflammatory activities [13]. *Smilax glabra* possesses antioxidant and anti-inflammatory activities [14]. Hydroalcoholic extract of *R. damascene* showed relieve in inflammatory pain [15]. This plant contains several components such as terpenes, glycosides, flavonoids, and anthocyanins and has analgesic, antimicrobial, anti-HIV, anti-inflammatory, and antioxidant properties [16]. *M. azedarach* has antioxidant, antimicrobial, anti-inflammatory, analgesic, antiulcer, antipyretic, antiplasmodial activities [17]. *B. frondosa* possesses anti-

inflammatory, hepatoprotective, wound healing, and chemoprotective properties [18]. Pharmacological studies reveal that *C. officinalis* exhibits antibacterial, antiviral, anti-inflammatory, antitumour and antioxidant properties [19]. The anti-inflammatory and analgesic activity of fenugreek is because of the presence of flavonoids and saponins bioactive compounds and different unsaturated acids of linoleic and linolenic acid series.

The aqueous alcoholic extract of fenugreek proven to have steroidal sapogenins as diosgenin, tigogenin, yamogenine and gatogenin, to which, the anti-inflammatory activity may be attributed. The anti-inflammatory activity of ether extract of different unsaturated fatty acids of linoleic and linolenic series present in fenugreek was also detected [20]. *H. indicus* possess antioxidant, hepatoprotective, anti-ulcer, antimicrobial, analgesic, anti-inflammatory and immunomodulatory activities [21]. Bark of barberry root includes a very noticeable amount of berberin which is of alkaloids and is anti-infection. Recent researches show that it kills infectious microorganisms such as *Staphylococci* and *Streptococci*, Salmonella and Shigella (microbes causing diarrhoea), *Entameba histolytica* (a microbe causing dysentery), *Vibrio cholerae* (a microbe causing cholera) and *Escherichia coli* (a microbe causing urethra infection) as an effective antibiotic. It also possesses fungicide, anti-oxidant, antibacterial and anti-inflammatory activities [22]. Hence, both groups were useful for the treatment of endocervicitis as these drugs possesses antimicrobial, anti-inflammatory, analgesic and antioxidant effects.

Strengths of the study

This study was prospective, comparative, randomized with good compliance. The biochemical laboratory investigations were with normal limits and no side effects of drugs were noted.

Limitations and recommendations

The limitations were small sample size without sample size calculation, no blinding, and standard control. The double blind study could not be conducted due to lack of infrastructure, manpower facility, and resources. Further, randomized standard controlled, double-blind, phase III trials are recommended.

CONCLUSION

Both groups were similar in efficacy for ameliorating sign and symptoms of endocervicitis. Further RCTS are recommended in large samples.

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CONFLICT OF INTERESTS

We declare that we have no conflict of interest

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