

Traditional Chinese medicine syndromes in women with frequently recurring cystitis: frequencies of syndromes and symptoms

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SUMMARY. **Background:** Frequently recurrent acute cystitis in adult women is common in Western medicine. In prophylactic treatment, women are treated between attacks of acute cystitis to prevent recurrences. A recent study has shown that acupuncture seems effective for prophylaxis. **Objectives:** To describe the frequency of traditional Chinese medicine (TCM) syndromes found in females vulnerable to recurrent cystitis, and which symptoms most often form the basis for TCM diagnoses made in this condition. **Methods:** A descriptive study based on TCM diagnostic methods as used by experienced acupuncturists, and a questionnaire of symptoms used in TCM diagnostics. **Results:** Of 61 women with frequently recurring cystitis, 90% were diagnosed as having either a Spleen/Kidney yang xu/qi xu (54%), or a Liver qi stagnation (36%). Only 10% fell in other diagnostic groups. Of all symptoms noted, only three differed in frequency between the two main diagnostic groups: feeling cold (29/33 vs. 13/22, $P<0.05$), feeling tired (25/33 vs. 4/22, $P<0.001$), and having a preference for sweets (10/33 vs. 2/22, $P<0.05$). **Conclusion:** Our findings have implications for TCM-based diagnostic work in females with recurrent cystitis, and also indicate that recurrent cystitis may be used as a case for further TCM research. © 2000 Harcourt Publishers Ltd

INTRODUCTION

Acute uncomplicated lower urinary tract infection (cystitis), defined as acute cystitis in an otherwise healthy, non-pregnant, adult woman, is common. As many as 20% of the female population experience acute cystitis in the course of a year and one in three of these women will have three or more episodes of cystitis during a year.¹ Apart from the common symptoms of cystitis, there must be bacteriuria of $\geq 10^4$ colony-forming units per millilitre (cfu/ml).² In terms of Western medicine the pathogenesis seems to be well described. The infection is mostly

caused by the patient's own intestinal bacteria which, after having colonized the periurethral area, invade the bladder mucosa via the urethra. Virulence factors within the bacteria and lifestyle factors in the woman can both be of importance in this process.

A substantial proportion of adult women will report three or more acute episodes of cystitis each year.¹ According to Western medicine, these women are 'healthy' between the acute episodes.³ Nevertheless, they must be regarded as vulnerable to a new episode of cystitis. Such vulnerability in traditional Chinese medicine (TCM) literature is

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often said to reflect a 'disharmony' that may be diagnosed and treated.⁴ A recent study showed that acupuncture treatment may be indicated in the prophylaxis of recurrent cystitis.⁵ This brought to light a need for further diagnostic reflection on this matter.

Traditional Chinese medicine theory

Even when body organs have identical labels in TCM and Western medicine, the concepts may be different. In this paper we denote TCM organ concepts by using initial capital letters, e.g. Urinary Bladder.

As a diagnostic entity, acute cystitis is well described both in Western medicine and in TCM. In TCM, most sources describe an acute attack of cystitis as a damp heat condition of the Urinary Bladder.⁶ The primary symptoms are difficult and painful urination, urinary frequency and urgency, lower abdominal pain and low back pain. The description of symptoms corresponds well with that for acute cystitis in Western medicine.⁷

According to TCM a 'body in harmony' will not be diseased. A body in disharmony, however, may be attacked by external or internal causes. One example of an external cause in terms of TCM is exposure to a damp/cold environment, e.g. wading in cold water or not changing bathing suit after swimming. Examples of internal causes are anxiety and repressed anger. Dietary habits are classified as miscellaneous. In recurrent cystitis, acupuncturists will be looking for some patterns of disharmony underlying the development of the repeated attacks of damp heat in the Urinary Bladder. In other words they are looking for a cause for these women's

vulnerability to cystitis. Our study addresses this vulnerability in otherwise healthy women with recurrent acute cystitis.

The *Zang Fu* system is the main part of the theoretical framework for understanding a development of acute cystitis (Fig. 1).⁸ As seen from the figure, there are several TCM syndromes that may lead to acute cystitis. Each syndrome may give rise to specific vulnerabilities. According to TCM literature, the main syndromes are caused by dysfunction of the Kidney, Spleen, Lungs and Liver. These considerations, however, do not tell us anything about the prevalence of the different TCM syndromes, and there is little published on this topic.⁹

The aim of this study was to describe the frequency of TCM syndromes found in females vulnerable for recurrent cystitis, and which symptoms most often form the basis for TCM diagnoses made in this condition.

MATERIAL AND METHODS

A total of 67 non-pregnant women, aged 18–60 years, were originally included in a parallel study on the effect of individual acupuncture in the prophylaxis of recurrent cystitis.⁵ Patients were recruited by advertisement in a local newspaper during 12 months from February 1994. The study took place in the Bergen area on the west coast of Norway. The main criteria for inclusion were three or more episodes of lower distal urinary symptoms during the previous 12 months, provided that at least two had been diagnosed and treated as cystitis by a medical doctor. Subjects were excluded if they had any complicating illness (e.g. diabetes, cancer, obstruction of the urinary tract).

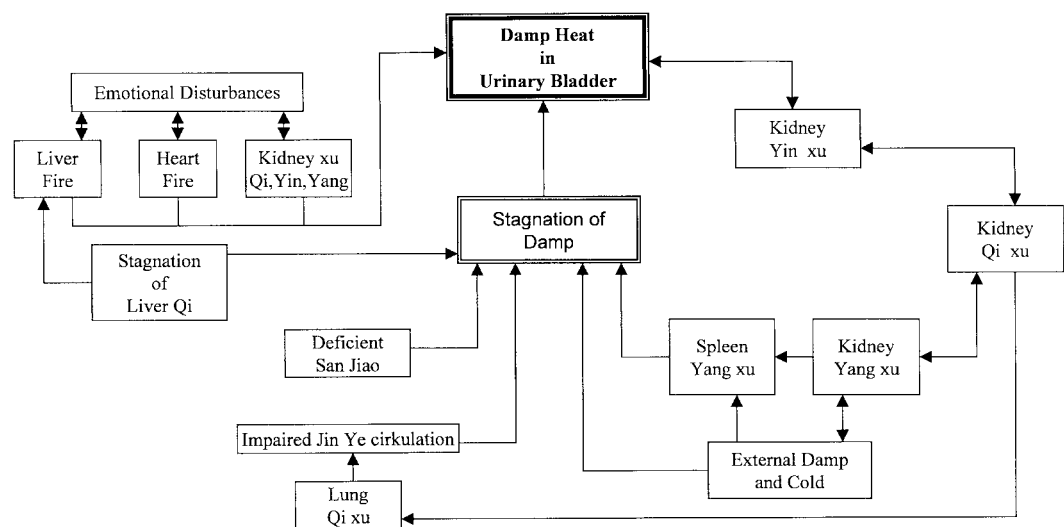


Fig. 1 Possible patterns, as copied from Ross,⁸ of disharmony which may lead to damp heat in the Urinary Bladder. Of the 61 females vulnerable to recurrent cystitis in the present study, 33 were diagnosed as having Spleen/Kidney Yang xu/Qi xu, 22 as having Liver Qi stagnation, and six to other syndromes.

Distal urinary symptoms were defined as dysuria, urinary frequency, and/or suprapubic discomfort. Acute cystitis was defined by the above-mentioned symptoms plus bacteriuria (10^4 or more cfu/ml of uropathogens, or any amount of *Staphylococcus saprophyticus*). This information was used mainly for the purpose of a parallel study, to which the patients had given their informed consent.⁵

The women were defined as vulnerable to recurrent cystitis if they met the main criteria of inclusion. TCM syndromes were used to categorize this vulnerability.

A self-administered questionnaire containing background data and clinical questions was adopted from Zhang Jie-Bin.¹⁰ As the theme of this study was recurrent cystitis, questions related to the Kidney aspect in TCM (childbirths and tiredness) were added. To address the damp-heat aspect, questions concerning vaginal discharge and menstrual cycle were added (Table 1).

Patients filled in the questionnaire on their own. They were then interviewed by one of the three skilled (more than 8 years' practice) acupuncturists for symptoms relevant to the TCM syndromes. Diagnosis of the patient's syndrome was based on the questionnaire, further detailed questioning when indicated, pulse and tongue diagnosis, combined with clinical experience. No patient was seen by more than one acupuncturist.

The participating acupuncturists were graduates of different acupuncture schools (The International College of Oriental Medicine UK 1978–82 (TA), the Swedish International Acupuncture School 1985–1986 with an advanced course at Nanjing College for TCM 1988 (AA), and Beijing Traditional Chinese Medicine College 1978–1983 (HLH)). All three have worked in private practice since they graduated, and the last 3 years in the same group practice.

The study has been approved by the Regional Ethical Committee and The Norwegian Data Inspectorate. It was funded by The Norwegian Research Board and The Norwegian Association of Traditional Chinese Acupuncture.

Statistics

Fisher's exact test was used to evaluate differences between proportions. A 95% Confidence Interval (C.I.) is presented in brackets when giving main frequencies.

RESULTS

In all 67 patients, aged mean 34.9 (range 18–60) years, were included. Six were later excluded owing to missing information/data. These were regarded as

Table 1 Acupuncture syndromes in 61 women with recurrent lower urinary-tract infection (UTI). The different symptoms were recorded by use of a questionnaire. Occurrences are given as frequencies (f = X/N where X = number of occurrences, and n = number of persons in the group).

	Spleen/Kidney Yang xu/Qi xu	Liver Qi stagnation	Other syndromes
Number	33	22	6
Age (mean)	35.1	33.3	39.3
UTI as child	9	7	3
Number of children (f)	0.9	0.8	0.5
UTI's last 5 years (f)	15.5	13.4	11.2
Acupuncture questionnaire			
feeling cold	29	13*	6
feeling tired	25	4**	0
feeling angry or depressed	17	10	3
heavy menstruation	13	11	0
vaginal discharge	8	5	0
regular meals	28	20 ^b	5
regular bowels	28 ^a	20 ^b	4
preference for cold drinks	15 ^a	14 ^d	6
preference for hot drinks	20	15 ^c	2
sweating at night	4	3 ^b	2
taste preference: sour	2	2	0
taste preference: sweet	10	2*	0
taste preference: salt	9	5	0
taste preference: spicy	13	7	0

*P < 0.05, Fisher's exact test
**P ≤ 0.001, Fisher's exact test
^aOnly 32 respondents
^bOnly 21 respondents
^cOnly 20 respondents
^dOnly 19 respondents

dropouts. Background data from the remaining 61 patients are given in the table. There were only minor differences between the two diagnostic groups regarding age, number of children, history of urinary-tract infection as child, and number of episodes of cystitis in the last 5 years.

Data showed that most females with frequently recurrent cystitis fell into two main TCM diagnostic categories. In all, 33 had Spleen/Kidney Yang xu/qi xu (54%, 95% C.I. 40.9 to 66.9%), and 22 had Liver qi stagnation (36%, 24.2 to 49.4%). Six of the patients, less than 10% (3.7 to 20.2%) had other TCM syndromes (Table 1).

The rest of the analysis and discussion concerns these two main categories. The table also shows the frequencies of each TCM symptom grouped by TCM syndrome. Only feeling cold, feeling tired, and taste preference for sweet things was significantly different between the two main groups.

For the other questions there appear to be no differences between the two groups. A substantial proportion of the participants reported eating regularly, having regular bowels, having no preference concerning hot or cold drinks, and no other taste preferences other than for sweet things.

The frequencies of the diagnostic categories (the two main diagnostic groups and miscellaneous) among the participating acupuncturists were HLH: 10, 9, 3; TA: 12, 6, 2; and AA: 11, 6, 1, respectively.

DISCUSSION

Of all possible syndromes relating to the vulnerability of females to recurrent cystitis (Fig. 1), we found that 90% of the women had either a Kidney/Spleen yang xu/qi xu, or a Liver qi stagnation. However, this finding is limited by the 10% dropouts. As far as we know few studies have reported the prevalence of the different syndromes in TCM.

Are our findings valid for cystitis-prone females in general? The patients in our study were recruited by advertisement in local newspapers. Participants may have had a preference for complementary medicine, but our impression was that they participated rather because they were sceptical of prolonged use of antibiotics, and because they appreciated that research on their condition was being done at all. Thus, the participants in our study probably are representative for most cystitis-prone females in similar societies.

During the inclusion of patients in the project, the acupuncturists based their diagnoses on the questionnaire, combined with a free clinical interview of the patient, and pulse and tongue diagnosis. This introduces a risk of circular reasoning. The acupuncturists, however, also used their clinical experience. Moreover, our data did not uniformly confirm TCM theory, nor were they always in accordance with the participating acupuncturists' preconceptions. Further, the questionnaire was developed by consensus

between the three acupuncturists. They had very different backgrounds, yet they found similar frequencies of syndromes. This may reduce the risk of circular reasoning. The syndromes found for the subjects in this study were used for treatment purposes in the parallel randomized clinical trial.⁵ As the results of the latter showed real acupuncture to be highly effective in reducing the reinfection rate among the cystitis-prone women, this may indicate that the TCM syndromes found are more or less correct.

All three participating acupuncturists had long experience, and all three worked within mainstream TCM. They also found the same prevalence of the main diagnostic groups. These considerations may enforce the general validity of our findings with regard to cystitis-prone adult females.

The concept of validity regarding TCM syndromes is difficult as there usually is no 'gold standard'. We present our data at face value. The following discussion may help readers decide whether these results are valid for their own practice. Different kinds of studies using different approaches including comparisons with healthy controls are needed to evaluate the validity of TCM syndromes, or even whether they really exist. Lacking gold standards, congregating evidences is needed. This study may be seen as a starting point.

The main differences between the two groups were the symptoms of feeling cold and feeling tired. Traditional theory holds that lack of Kidney and Spleen yang energy will make the patient vulnerable to external cold, and she will also feel cold more easily because of lack of the heating aspect of the yang. Western studies have also coupled being cold to the risk of getting cystitis.^{11,12}

While almost all patients with Kidney/Spleen yang xu/qi xu reported feeling cold, only half of the patients in the other group did so. The symptom of feeling cold in this latter group may be mainly due to the Liver qi stagnation, which in some ways can be related to a kind of tension. The resulting symptoms are cold hands and feet, but usually not a cold feeling in the whole body. Due to the tension in these patients most will normally not experience any tiredness, but rather an inability to relax.

Tiredness is not uncommon among Western patients. In our material, only patients with the Kidney/Spleen yang xu/qi xu syndrome reported tiredness with any frequency. As TCM theory states, the yang aspect of Kidney/Spleen deals with the transformation of fluids in the body.¹³ Yang deficiency of these organs may give rise to dampness in the body. Dampness inhibits the flow of yang qi in the lower jiao and patients present symptoms such as difficulties in urination, coldness, lethargy and tiredness.¹⁴ The effect of dampness in the lower jiao sounds strikingly similar to the medical notion of residual urine volume. One question for future research is whether this conceptual similarity also represents a clinical one, or as Nei Jing states: 'Only through qi transformation can the fluids emerge'.

Surprisingly for the participating acupuncturists, the latent heat aspect was not very apparent at the time when patients were included. Very few of the participants had a rapid pulse, or red tongue, which are both regarded as signs of heat in the body. TCM theory and the cystitis-prone women may agree on the heat aspect of symptomatic acute cystitis. This study, however, addresses the patient between episodes of cystitis. Our findings are in concordance with Western medicine, which regards women with recurrent uncomplicated cystitis as healthy between attacks.³ Moreover, TCM and Western medicine agree that these patients must have some vulnerability as the basis of their problems. TCM differs from Western medicine by providing syndromes for this vulnerability. These syndromes present options, useful in further research on the vulnerability of cystitis-prone women.

As for other symptoms, there were few differences between the two main groups, although this finding is limited by missing data and uniformly low scores for several symptoms. Few participants in our study reported irregular meals. Irregularities of the bowels are, differently for each syndrome, linked to both Spleen/Kidney yang xu/qi xu and Liver qi stagnation. Unexpectedly, most participants reported regular bowel movements. Eating regularly and regular bowels may be common to most adult Norwegian women. Thus, for the vulnerability to recurrent cystitis, questions on bowel function may at best provide limited differential diagnostic information.

In any case, this does not mean that questions concerning coldness, tiredness and preference for sweet things alone give the diagnosis in these patients. The reason for being cold, feeling tired and having preference for sweet tastes has to be related to other findings in each individual patient, or as Bensoussan states: 'The oriental model appears to be more dependent upon the integration of a wide range of data, and a decision is seldom based on one or two factors alone. In the Chinese model any piece of information gathered from the patient can only be interpreted subjectively in relation to other symptoms and signs'.¹⁵ Still our findings may be useful for the acupuncturist as possible key questions when diagnosing cystitis-prone women.

In TCM it is usually said that different taste preferences reflect the state of certain organs.⁶ If the Spleen is weak (as in Spleen qi/yang xu) one will prefer sweet food and drink. Similarly, Kidney problems (as in Kidney qi/yang xu) give a preference for salt, and Liver problems for sour food and drink, as in Liver qi stagnation. Our data do not support this line of reasoning. In text books, tastes are similarly described as a minor aspect of TCM.⁶ The preference for sweet tastes found in the Spleen/Kidney yang xu/qi xu group may rather be linked to their report of being tired; sugar may give them a momentary feeling of more energy. Indeed, information on taste preferences may be more

dependent on cultural traits than on TCM predicted experiences.

The Kidney is said to govern water metabolism in the body, and a deficiency here could lead to different urinary symptoms. For women with 'chronic' urinary-tract infection it is written that if the yang aspect of the Kidneys fails to transform fluids, this may give rise to dampness.¹⁴ The repeated attacks of dampness are also said to weaken the Kidney, especially the yin aspect.¹³ This was not found in the present group of women, possibly due to their age, as the yin xu aspect usually shows up later in life.¹³ Consequently, when treating younger women with recurrent cystitis, the syndrome of Kidney yin xu should not be the first to be considered.

The Lungs are held to communicate with the bladder and give it strength to perform its function of excreting water. Lung qi xu problems related to the bladder were very infrequent in our material. Again these problems seem to occur more in older people.

In conclusion, we found that two main TCM syndromes included most women vulnerable to recurrent acute cystitis. Of all TCM questions used, only the three questions on feeling cold, being tired and having preference for sweets distinguished between the two syndromes of Spleen/Kidney yang xu/qi xu and Liver qi stagnation. Our results may have implications for TCM-based diagnostic work on patients with recurrent cystitis. They may also have implications for TCM-based diagnostics in general, as our findings of discrepancies between TCM predictions and symptoms actually recorded may have parallels in other diagnostic entities. This indicates a need for further research into the basis for diagnosing TCM syndromes.

Further, it is our impression that the individualistic approach in TCM is said to make research more difficult, because patient groups will not be large enough for a conventional quantitative approach. Our findings indicate that cystitis, with its two main TCM syndromes, is a suitable case for TCM research.

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