SHORT REPORT

Are unexplained vaginal symptoms associated with psychosocial distress?
A pilot investigation

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ABSTRACT

AIM: Vaginal complaints cannot be definitively diagnosed in approximately one-third of women. We sought to determine if women without a diagnosis had higher levels of psychiatric disorders.

METHODS: This was an observational study in an urban family practice clinic. Prior to seeing a clinician, women with vaginal complaints completed the Patient Health Questionnaire (PHQ); symptoms were measured by the Vaginal Complaints Scale (VCS). Patients were then examined and treated by a family physician. At one and two weeks' time patients were contacted by phone regarding symptom resolution and clinical outcomes.

RESULTS: We enrolled 47 patients; one patient was excluded. A diagnosis was made in 36. Eighteen had bacterial vaginosis, 16 had candida, three trichomonas, two HSV, one chlamydia; there were eight dual diagnoses. PHQ diagnoses were slightly less common in women without an identified cause for their symptoms. We obtained follow-up data from 45 subjects at one week and 34 subjects at two weeks' time. At two weeks' follow-up, 97% of subjects had complete resolution or improvement of their symptoms. Symptom improvement was equivalent among women with a diagnosis and those without. We estimate 180 subjects would be needed to detect a clinically meaningful difference in PHQ diagnoses.

DISCUSSION: Our pilot study did not find an association between psychiatric diagnoses made by the PHQ and unexplained vaginal symptoms. Nearly all patients experienced rapid resolution of symptoms irrespective of whether a diagnosis had been made or not. These findings are limited primarily by the small sample size.

KEYWORDS: Vaginitis; psychosocial stress; symptom resolution

Introduction

Vaginal complaints are common in primary care, yet comprehensive microbiologic investigations fail to identify an aetiology in about one-third of cases.[1–4] Factors other than known microbes and dermatological reactions must, therefore, play a role in the development of vaginal complaints. Since vaginal symptoms can have important social meanings,[5–8] some investigators have postulated a role for psychosocial stress in their genesis. A population-based survey in India concluded that psychosocial factors were strongly associated with complaints of vaginal discharge, while reproductive tract infections (RTI) were not.[8] This may reflect specific cultural ideas in India concerning leucorrhoea (white vaginal discharge).[7,9] Chronic stress has been linked to vaginal candidiasis.[10,11] Studies on the role of stress in bacterial vaginosis have been contradictory.[12–14]

No study has examined the relationship between medically unexplained vaginal symptoms and psychosocial stress. To explore this relationship, we hypothesised that if unexplained symptoms resulted from psychosocial factors, then we would find higher levels of depression, somatisation, anxiety symptoms and psychosocial stress in patients who did not have an RTI when compared

J PRIMARY HEALTH CARE 2010;2(2):150–154.

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to patients who did have an RTI. In addition, we evaluated the impact of a having made a specific diagnosis on the resolution of vaginal symptoms.

Methods

Subjects

The study was conducted at an urban family practice clinic and residency training site. All women from 18 to 45 years presenting with vaginal complaints were eligible. Exclusion criteria included: fever; known diagnosis of gonorrhoea, chlamydia, or herpes; menstruation; and pregnancy. Women who had self-treated for vaginal symptoms were not excluded in order to assure a representative study population.

Recruitment and consent

Nurses queried all patients regarding their presenting problems. Patients with any vaginal complaints were referred to one of the authors (UA). Written informed consent was obtained from those who wished to participate.

Study protocol

Consenting patients completed a basic demographic survey, a sexual and contraceptive history, the Vaginal Complaints Scale (an 18-question survey designed by the authors)[15] and the depression, anxiety, somatisation, and stress sections of the self-report Patient Health Questionnaire (PHQ).[16]

Study patients were seen by their assigned clinical providers or by UA. All providers at the clinic are trained in the diagnosis of vaginitis. Resident physicians only examine patients under direct supervision of attending physicians. A pelvic examination was performed and a sample of the vaginal fluid obtained. The pH was measured, a whiff test performed, and the sample examined under a microscope using normal saline and potassium hydroxide (KOH). All specimens were reviewed by UA in addition to the primary clinician. Bacterial vaginosis (BV) was diagnosed using the Amsel Criteria. If microscopic examination did not reveal a definitive diagnosis, culture of yeast and *T. vaginalis* were obtained. Women were tested for gonorrhoea and chlamydia; physicians were free to order additional tests at their clinical discretion.

WHAT GAP THIS FILLS

What we already know: Vaginal complaints are very common in primary care, but a cause cannot be identified in one-quarter to one-third of women. Some evidence has suggested that psychosocial morbidity may account for unexplained vaginal symptoms.

What this study adds: In this small pilot study, unexplained symptoms were not associated with measures of psychosocial distress. Most women experienced prompt relief of symptoms regardless of whether a diagnosis had been made or not.

Patients with an identified microbe were treated by their primary care provider. Patients without a definitive diagnosis were either treated or not treated according to their provider's assessment (typically based on the severity of symptoms or likelihood of disease on the basis of the pH or past history).

Follow-up

UA contacted subjects by phone at both one week and two weeks after initial presentation regarding symptom resolution, clinical outcomes, and any persistent patient concerns. Patients who remained symptomatic at the two-week follow-up call were referred for re-evaluation at the clinic.

Infection with trichomonas or candida

Reports indicating an RTI were returned to the primary care provider who initiated therapy for the patient and, when applicable, for their sexual partner(s).

Positive screening for psychosocial issues

Patients with evidence of any mental disorder or family violence were offered referral to a social worker.

Data analysis

Data was entered into an Access database and analysed using SPSS for Windows Version 15.0 software. Group differences were evaluated with two-tailed *t*-tests for independent samples or Fisher's exact test. We analysed the vaginal symptom score using a hierarchical linear regression model with a random intercept at the individual level. Fixed

Table 1. Basic demographic data

		All patients n=46	Diagnosis made n=36	No diagnosis n=10	P-value
Age, mean, range		29.8 [18–42]	29.9 [20–43]	29.6 [18–40]	.90*
Education	College or advanced degree	31	23	8	.74†
	High school	11	9	2	
	No high school	4	4	0	
Marital status	Single	36	27	9	.62†
	Unwed couple	3	2	1	
	Married	5	5	0	
	Separated/divorced	2	2	0	
Employment	Employed outside home	32	25	7	.87†
	Student	7	5	2	
	Not employed outside home	7	6	1	
Contraception‡	None	6	6	0	.17†
	Abstinence	4	1	3	
	Condoms	18	13	5	
	OCP/ring	12	10	2	
	IUD	2	2	0	
	Depo-Provera	1	1	0	
	Sterilisation	1	1	0	
	No response	2	2	0	
Annual income‡	<$20K	17	13	4	.59†
	$20–40K	14	12	2	
	>$40K–80K	11	8	3	
	Over 80K	2	1	1	

* Independent samples *t*-test
† Fisher's exact test
‡ Data not reported for two women

effects in the model reflected baseline differences between the groups, change in score from initial to one-week and two-week follow-up interviews, and differences between changes in scores between women with and without a diagnosis.

Ethics

The Institutional Review Board of the Institute of Urban Family Health approved the study.

Results

Study sample

Forty-seven patients were enrolled between 13 January and 16 June 2006. One patient was excluded from analysis because her trichomonas culture was lost. Baseline demographic data between those with and without a diagnosis were not significantly different (Table 1).

Historical data from the clinic suggested that approximately 200 women would be diagnosed with vaginitis during the five-month study period. We reviewed a sub-sample of 80 patients seen during the months of January to March 2006 with the diagnosis of vaginitis who were not enrolled in the study. Reasons for non-enrolment included absence of investigator, nurse not contacting investigator, vaginal symptoms uncovered only after patient saw clinician, and patient refusal.

Diagnoses

A definitive diagnosis was made in 36 of 46 (78%) patients. Thirty-three patients (72% of the total sample) were diagnosed based solely on the

basis of office tests (pH, microscopy, whiff test). Four additional diagnoses were made based on culture: one candida, one chlamydia and two herpes simplex (HSV). Taking into account both office diagnoses and culture, 15 women had BV alone, 13 women had candida alone, two women had trichomonas alone and two women had HSV. Four women had dual diagnoses: two with BV and candida, one with BV and chlamydia, and one with trichomonas and candida. No woman was diagnosed with a non-infectious cause of vaginitis (contact dermatitis or allergic reactions). Ten patients (22%) were undiagnosed.

Psychological distress and diagnosis

Eleven women had diagnoses suggested from scoring the PHQ survey. Seven women had a single diagnosis: three had somatisation, two had minor depression and one each had panic and anxiety. Three women had dual diagnoses; one patient each had somatisation associated with either minor depression, major depression or panic disorder. One woman was diagnosed with minor depression, panic disorder, and anxiety. PHQ diagnoses were not more common in women without a medical diagnosis (Table 2).

Table 2. Diagnoses and association with psychological distress

Diagnosis Based on PHQ scoring	Women with a diagnosis (n=36)	Women without a diagnosis (n=10)
Somatisation	5 (14 %)	1 (10%)
Depression		
Depressive syndrome	4 (11%)	0
Major depressive disorder	1 (3%)	0
Panic syndrome	3 (8%)	0
Anxiety syndrome	2 (5%)	0
Women with any disorder	10 (24%)	1 (10%)

Note: No significant differences noted in any comparison using Fisher's exact test

Symptom resolution

We were able to contact 45 patients for follow-up at one week's time (one lost to follow-up) and 33 patients at two weeks' time (13 lost to follow-up). At one week 21 (47%) patients had complete resolution of symptoms, 20 (44%) had partial resolution of symptoms and four (9%) reported no change in symptoms. At two weeks 22 (67%) were completely better, 10 (30%) were a little better and only one patient was no better. No patient reported that symptoms were worse at either time.

Symptoms decreased markedly at the one week follow-up and decreased further at two weeks; these differences were statistically significant and occurred in both the diagnosis and non-diagnosis group. Differences in clinical resolution and symptom scores were not statistically different between the diagnosis and non-diagnosis groups.

We considered that three points on the Vaginal Complaints Scale represented a meaningful clinical difference. To have 80% power for detecting a difference of three using a two-tailed test with alpha = 0.05, and a correlation of zero between the baseline and follow-up measure would require 91 people in each group.

Discussion

In this pilot study we failed to find increased levels of psychosocial distress in women with undiagnosed vaginal symptoms when compared to those who did have a diagnosis. Both groups of patients experienced prompt symptomatic relief of their symptoms. Thus, in terms of psychological distress and symptom resolution, patients in our study who went undiagnosed seemed indistinguishable from patients with a medical diagnosis.

Our rate of non-diagnosis (22%) compares favourably to that reported in the medical literature as do our range of diagnoses. Our study is, however, limited by the small sample size, the convenience nature of the sample, relatively poor follow-up at two weeks (74%), and the fact that the PHQ is primarily a screening tool.

The simplest explanation of our findings is that women without a medical diagnosis are reacting appropriately to bodily changes in the same way as women with an identified cause. This would suggest that there may be unidentified infectious pathogens or processes that are causing their symptoms. Another explanation is that psychosocial stress is causing them to over-react to normal bodily functions but that the levels of stress are equivalent to those of persons with symptoms caused by a pathogen. It may be that the PHQ

Table 3. Clinical resolution at one and two weeks' time post-visit

		All women	With diagnosis	Without diagnosis
Completed interviews	At baseline	46	36	10
	At one week	45	36	9
	At two weeks	34	25	9
Total symptom score (mean, SD)	Baseline	14.3 (6.4)	15.0 (6.4)	11.6 (5.7)
	At one week	5.2 (4.0)	5.8 (4.4)	3.1 (3.2)
	At two weeks	2.3 (2.8)	2.3 (2.4)	2.3 (3.8)
Clinical resolution @ 1 week	Completely better	21 (47%)	17 (47%)	4 (44%)
	Somewhat better	20 (44%)	15 (42%)	5 (56%)
	Unchanged	4 (9%)	4 (11%)	0
	Worse	0	0	0
Clinical resolution @ 2 weeks	Completely better	23 (68%)	18 (72%)	5 (56%)
	Somewhat better	10 (29%)	6 (24%)	4 (44%)
	Unchanged	1 (3%)	1 (4%)	0
	Worse	0	0	0

Note: Clinical resolution at one and two weeks not significantly different by Fisher's exact test. For symptom score see text.

test did not measure the psychological processes that might be responsible for symptoms. It is important to note that even had we found association between unexplained vaginal symptoms and psychological distress at the time of presentation this would not necessarily imply that the distress caused the symptoms.

Since one-quarter to one-third of women in primary care with vaginal symptoms go undiagnosed, a better understanding of their symptoms remains an important problem in primary care.

ACKNOWLEDGEMENTS
Dr Clyde Schechter provided invaluable assistance with the statistical analysis of this paper.

FUNDING
Dr Aslam participated in this project as a Fellow of the New York State Empire Clinical Research Investigator Program (ECRIP).

COMPETING INTERESTS
None declared.

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