

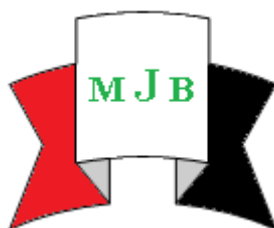
Prevalence of Abnormal Vaginal Signs and Symptoms among Attendees of Obstetrics and Gynecology Department of Shaqlawa Hospital

Hmadia Mirkhan Ahmed^a Vian Haji Rasool^b Namir Ghanim Al-Tawil^c

^a Maternity Nursing Unit, College of Nursing, Hawler Medical University, Erbil, Iraq.

^b Department of Nursing, Technical Institute, Shaqlawa, Iraq.

^c Department of Community Medicine, College of Medicine, Hawler Medical University, Erbil, Iraq.



Received 10 October 2013

Accepted 1 December 2013

Abstract

Background and objectives: Vaginal symptoms are among the most common reasons of visits in clinical practice, and occur frequently in women during their reproductive life, resulting very often in consulting an obstetrician or a gynecologist. The objectives of the study were finding out the proportion of women affected by abnormal vaginal signs and symptoms and to find out the factors that are associated with any of these signs and symptoms.

Methods: A cross-sectional study was conducted on 285 women (patients) consulting gynecologist, between 1st of Jan to 30th of Dec 2011, in the Shaqlawa Hospital, Erbil. Data were collected by an interview, using a questionnaire and observing clinical features based on guidelines issued by Center for Disease Control & Prevention and 2011 European Guidelines on the Management of Vaginal Discharge.

Results: The majority of the study sample (87.4%) had at least one abnormal vaginal sign and symptom. There was statistically significant association between presence of vaginal infection and age, educational level, localized skin disease in vulva and perineum, hypersensitivity or allergic reaction to soap, pads, or clothing, intercourse while using medication for treatment of vaginal infection, wearing nylon (or synthetic) underwear, vaginal douching, using oral contraceptives, having intrauterine contraceptive device and infertility.

Conclusion: Abnormal vaginal signs and symptoms are important chief complains with high proportion among women.

Key words: Prevalence, abnormal vaginal signs and symptoms.

نسبة انتشار العلامات و الأعراض غير الطبيعية في المهبل بين مراجعات قسم النسائية و
التوليد في مستشفى شقلاوة

الخلاصة

الخلفية و الأهداف: ان من أهم أسباب مراجعة النساء للعيادات الصحية هي ظهور علامات و أعراض غير طبيعيه في المهبل و تحدث عادة خلال سن الانجاب مما يؤدي الى استشارة طبية في مجال النسائية و التوليد. ان أهداف الدراسة هي لمعرفة نسبة النساء اللواتي يعانين من علامات و أعراض.

طريقه اجراء البحث: أجريت دراسة وصفية على ٢٨٥ امرأة (مریضه) يراجعن طبيبه نسائيه للفترة من ١ كانون الثاني الى ٣٠ كانون الأول ٢٠١١ في مستشفى شقلاوة التابعة لمدينة أربيل. تم جمع المعلومات بطريقه مقابلة والملاحظة لعينه البحث من خلال استعمال

استمارة أستيبيانيه اضافته الى ملاحظته الصفات السريرييه التي تظهر على النساء و بالأعتماد على الأدلة التي تم اعدادها من مركز ضع و السيطرة على الأمراض و الأدلة الأوروبيه لسنة ٢٠١١ حول علاج الإفرازات المهبليه.

النتائج: ان أكثرية عينه الدراسة (٧٨,٤%) كانت عندهم على الأقل أحد العلامات و الأعراض غير الطبيعیه في المهبل. و كانت هناك دلالة احصائية ايجابية بين وجود الالتهاب المهبلي والعمر والمستوى التعليمي و بعض الأمراض موضعي الجلديه في منطقه العجان و المهبل و كذلك الحساسية للصابون أو قطعة القماش و الاتصال الجنسي فقط عند استعمال الأدوية في علاج التهاب المهبل و كذلك هنا لاعلاقة عند الملابس الداخليه المتكونه من النايلون أو المواد الاصطناعية المستعمله في غسل المهبل و استعمال وسائل منع الحمل عن طريق الفم أو وسائل منع الحمل داخل الرحم و العقم.

الاستنتاج: ظهور العلامات و الأعراض غير طبيعیه في المهبل تعتبر من الشكاوى الرئيسيه عند النساء.

الكلمات المفتاحية: نسبة انتشار، علامات و أعراض غير طبيعیه في المهبل

Introduction

Vaginal symptoms are among the most common reasons of visits in clinical practice, and occur frequently in women during their reproductive life, resulting very often in consulting an obstetrician or a gynecologist [1].

Vaginal infection, also called vaginitis is the irritation of the vagina that causes an abnormal vaginal discharge, itching, burning, odor and other symptoms [2]. Vaginal discharge and itching of the vulva and vagina are among the most frequent reasons a woman seeks help from a health care provider; women complain of vaginal discharge more than any other gynecologic symptom. [3] The three principal types of vaginitis are bacterial vaginosis, candidiasis and trichomonal infection. [4] If a woman has bacterial vaginosis, she often complains of a fishy odor vaginal discharge, especially after sexual intercourse. If the vaginitis is caused by candidiasis species; pruritus, dysuria and vulvovaginal irritation tend to be the primary complaint, meanwhile a woman who has trichomoniasis usually complains of copious yellowish or greenish discharge with a foul odor, pruritus, vulvovaginal irritation, and dysuria. [5] The above mentioned three most common types of vaginitis cause 90%

of vaginal infections; [6,7] that affect 3 out of 4 women at least once in their lives.[4] It is estimated that 75% of all women will have a vaginal yeast infection at some point in their lives. [2] Bacterial vaginosis accounts for 40% to 50% of vaginitis, vulvovaginitis due to candidiasis accounts for 20% to 25% and vaginal trichomoniasis accounts for 15% to 20%. [5] In USA, the reported rate at general gynecologic clinics is 5-15%, while for sexually transmitted diseases (STDs) clinics, reported rates ranging from 32% to as high as 64%.[7] International rates are uncertain but probably are similar to those in the United States.[7]

Factors that alter vaginal environment (and may also be induced by an upset in the normal balance of vaginal organisms) include stress, contraceptives, feminine hygiene products, vaginal medication, sexually transmitted diseases, sexual intercourse, antibiotics, nylon pantyhose and douching. [2,7]

The traditional method of diagnosing STDs is by laboratory tests. However, such tests are very often unavailable or too expensive, therefore, syndromic management of STDs has been recommended by WHO since 1990 in patients presenting with symptoms of STDs. This approach permits treatment of STDs without costly laboratory

tests. It offers accessibility and immediate treatment, and is effective and efficient. Studies have shown that syndromic case management of STDs using flowcharts is more cost-effective than diagnosis based on either clinical examination or laboratory tests. Despite its shortcomings in women with vaginal discharge, this approach currently provides the best alternative guide to STDs management, especially where resources for laboratory tests are limited, as the case in Shaqlawa Hospital.[8]

The authors did not come across a similar study in Shaqlawa measuring the prevalence of vaginal infections in the city. An interview was carried out by authors with a local gynecologist showed that high number of women are affected with vaginal infections but still unreported (Personal communication: Dr. Aveen Wilya Mohammad, senior house officer in the department of obstetrics and gynecology/ Shaqlawa Hospital/ Dec 3, 2010). Accordingly the authors decided to carry out this study. The objectives of the study were finding out the proportion of women affected by abnormal vaginal signs and symptoms and to find out the factors (such as age, educational level, diseases, medication, lifestyle, personal hygiene, contraceptive method and obstetrical status) that are associated with any of these signs and symptoms among attendees of obstetrics and gynecology department of Shaqlawa Hospital.

Patients and Methods

A cross-sectional study was conducted in the obstetrics and gynecology department of Shaqlawa Hospital, Erbil Governorate, Kurdistan Region, Iraq, between 1st of Jan to 30th of Dec 2011. The sample was collected using

the convenience method of sampling. All the patients (285 women) attending the above mentioned department (for different complains) during the presence of one of the researchers in that department were included in the study. Data collection started after a formal consent of the director of Shaqlawa Hospital, during 1st of March to 30th of August, 2011. Informed verbal consent was obtained from all participants, and then data were collected by an interview, using a questionnaire designed by the researchers. The questionnaire included demographic characteristics, socio-economic status, obstetrical history, signs and symptoms and risk factors of common types of vaginal infection (bacterial vaginosis, candidiasis and trichomonal infection). Stressful life as risk factor of vaginal infection is defined as: events or experiences that produce severe strain, such as failure on the job, marital separation, and loss of a loved person.[9]

In addition to laboratory tests, diagnosis of vaginal infection is determined by clinical features based on guidelines issued by Center for Disease Control & Prevention (CDC), [10] the 2011 European (IUSTI/WHO) Guidelines on the Management of Vaginal Discharge,[11] and the syndromic management of STDs which has been recommended by WHO since 1990 for use in patients presenting with symptoms of STD. [8] Accordingly, bacterial vaginosis is diagnosed by presence of the following symptoms or signs: homogeneous, thin, white discharge that smoothly coats the vaginal walls and a fishy odor of vaginal discharge. A diagnosis of Candida vaginitis is suggested clinically by the presence of dysuria and vulvar pruritus, pain, swelling, and

redness, vulvar edema or thick, curdy vaginal discharge. Trichomonas vaginal infection characterized by a diffuse, malodorous, yellow-green vaginal discharge with vulvar irritation. In this study the presence of any of the above mentioned signs and symptoms was recorded as abnormal finding.

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS version 18). Chi-square test was used to study the significance of association between vaginal infection and different associated factors. A "p value" of ≤ 0.05 was considered as statistically significant.

Results

Results showed that, the mean age ($\pm$ SD) of the study sample was 29.37 ± 7.56 years old. Mean ($\pm$ SD) of years of formal education of women and their husbands were 5.56 ± 4.33 years and 7.57 ± 4.27 years, respectively. The majority of the study sample (80.7%) was housewives and 73.7% of their husbands were

employed (table 1). Results of this study showed that 87.4% of the study sample had at least one abnormal signs and symptoms of vaginal infection. The most common presenting signs and symptoms among the sample were vaginal & perineal itching (69.1%), pain in vulva (67.7%), malodorous vaginal discharge (67.4%), white vaginal discharge with a typical cottage cheese appearance (67.4%), increase in vaginal discharge (66.3%) and dysuria (64.6%) (Table2). Table 3 shows that there is statistically significant association between presence of vaginal infection and age, woman's educational level, localized skin disease in vulva and perineum, hypersensitivity or allergic reaction to soap, pads, or clothing, intercourse while using medication for treatment of vaginal infection, wearing underwear other than cotton one (e.g. nylon or any synthetic material), vaginal douching, using oral contraceptives, having intrauterine contraceptive device (IUCD) and infertility.

Table 1 Demographic characteristics of the study sample

	Variable	Mean ($\pm$ SD)
1	Age (year)	29.37 ± 7.56
2	Years of education(woman)	5.56 ± 4.33
3	Years of education (husband)	7.57 ± 4.27
		No. (%) N= 285
4	Occupation (woman) - Housewife - Employed	230 (80.7) 55 (19.3)
5	Occupation (husband) - Employed - Non employed	210 (73.7) 75 (26.3)

Table 2 Distribution of sample by abnormal vaginal signs and symptoms

	Signs & symptoms	No. (%) N= 285
1	Vaginal & perineal itching	197 (69.1)
2	Pain in vulva	193 (67.7)
3	Malodorous vaginal discharge	192 (67.4)
4	White vaginal discharge with a typical cottage cheese appearance	192 (67.4)
5	Increase in vaginal discharge	189 (66.3)
6	Burning on urination (dysuria)	184 (64.6)
7	Vaginal smell is strongest after sexual intercourse	167 (58.6)
8	Vaginal irritation	167 (58.6)
9	Milky, thin, scanty, gray or white discharge	163 (57.2)
10	Dyspareunia	143 (50.2)
11	Fishy odor	141 (49.5)
12	Thick discharge	124 (43.5)
13	Vulva & vaginal swelling	123 (43.2)
14	Green/ gray discharge	65 (22.8)
15	Frothy discharge	44 (15.4)

Table 3 Risk factors of vaginal infection

No	Risk Factors	N	Vaginal infection No. (%)	P
	A- Demographic characteristics			
1	Age (years) - Less than 25 - 25-35 - 35-44 - 45 and more	80 151 30 24	64(80) 146(96.7) 19(63.3) 20(83.3)	<0.001
2	Woman's educational level - Illiterate - Read and write - Primary school - Intermediate and secondary school - Institute and above	76 48 55 85 21	72(94.7) 48(100) 44(80) 68(80) 17(81)	0.001
3	Husband's educational level - Illiterate - Read and write - Primary school - Intermediate and secondary school - Institute and above	33 36 71 113 32	29(87.9) 32(88.9) 67(94.4) 97(85.8) 24(75)	0.095

A-	B- Diseases				
4	Previous vaginal infection				
	- Present	191	167	(87.4)	0.962
	- Absent	94	82	(87.2)	
5	Vaginal infection during previous pregnancy				
	- Present	138	126	(91.3)	0.053
	- Absent	147	123	(83.7)	
6	Diabetes				
	- Present	20	16	(80)	0.296
	- Absent	265	233	(87.9)	
7	urinary tract infection or problem				
	- Present	137	121	(88.3)	0.641
	- Absent	148	128	(86.5)	
8	Localized skin disease in vulva & perineum				
	- Present	65	65	(100)	<0.001
	- Absent	220	184	(83.6)	
C-	C-Medication & allergy				
9	Complete medical therapy course for previous vaginal infection				
	- Yes	168	152	(90.5)	0.058
	- No	117	97	(82.9)	
10	Using systematic antibiotic within the last month (for one month duration)?				
	- Yes	101	93	(92.1)	0.076
	- No	184	156	(84.8)	
11	Hypersensitivity or allergic reactions to soap, pads or clothing				
	- Yes	71	67	(94.4)	0.041
	- No	214	182	(85.0)	
12	Intercourse while using medication for treatment vaginal infection				
	- Yes	147	135	(91.8)	0.019
	- No	138	114	(82.6)	
13	Follow up visit after treatment of vaginal infection				
	- Yes	137	125	(91.2)	0.058
	- No	148	124	(83.8)	
A-	D-life style				
14	Stressful life				
	- Yes	121	109	(90.1)	0.236
	- No	164	140	(85.4)	

15	Frequently consumption of pastry products, sweets, milk, cheese - Yes - No	198 87	174 75	(87.9) (86.2)	0.696
16	Smoking - Yes - No	12 273	12 237	(100) (86.8)	0.374*
B-	E-Personal hygiene				
17	Using soap for cleaning genital area after each bathing - Yes - No	241 44	213 36	(88.4) (81.8)	0.228
18	Wearing cotton underwear - Yes - No	95 190	75 174	(78.9) (91.6)	0.002
19	Vaginal douching - Yes - No	113 172	89 160	(78.8) (93)	<0.001
20	Using perfumed or medicated sprays - Yes - No	13 272	13 236	(100) (86.8)	0.383*
21	Wearing tight clothing - Yes - No	28 257	24 225	(85.7) (87.5)	0.765*
22	Changing underwear every day - Yes - No	196 89	168 81	(85.7) (91.0)	0.212
23	Using sanitary pad during menstruation - Yes - No	237 48	205 44	(86.5) (91.7)	0.326
C-	F-Contraceptive method				
24	Using oral contraceptive - Yes - No	92 193	88 161	(95.7) (83.4)	0.004
25	Having IUCD - Yes - No	44 241	44 205	(100) (85.1)	0.006
	D- Obstetrical statues				
26	Pregnancy - Present - Absent	96 189	84 164	(87.5) (86.8)	0.863
27	Menopause - Present - Absent	12 273	8 240	(66.7) (87.9)	0.055*

28	Infertility				
	- Present	52	36	(69.2)	<0.001
	- Absent	233	212	(91)	

*Fisher's exact test was applied.

Discussion

Vaginal infection is being increasingly recognized in most of developed countries but still under-recognized condition in many developing countries.[1] Bacterial vaginosis is the most prevalent cause of symptomatic vaginitis, with a prevalence of approximately 15% to 50%; trichomonas vaginal infection is the cause of acute vaginitis in 5% to 50% of cases depending on the population studied. In most populations greater than 90% of cases are caused by *Candida albicans*. The greater enigma of this condition is the recurrence rate after an apparent cure, varying from 20% to 80%.[12, 13]

In the present study the proportion of vaginal infection was 87.4%, which is higher than most of the studies that showed different rates from 17% to 37%. This could be attributed to the studied sample which was hospital based, and the sample was taken from the gynecology department. However, higher rates of bacterial vaginosis have been reported in some studies carried out in developing countries.[1] Prevalence differs depending on the population studied. However, in a group of middle-class women in the reproductive range, bacterial vaginosis represents approximately 50% of cases, whereas candidiasis and trichomonas infection each constitute approximately 25% of cases. In a study from Hyryama, India, bacterial vaginosis was diagnosed in a high percentage (48.5%) of rural women.[14] Different studies in Iran showed that prevalence rate of vaginal

infection (trichomoniasis) varied widely from 0.5 to 42%.[15] The overall prevalence of bacterial vaginosis, candidiasis and trichomoniasis in 297 women who attended Butare University Teaching Hospital in Rwanda, was 21.5%, 28% and 3.7%, respectively[1].

In the present study, the most common presenting signs & symptoms of infected women were vaginal & perineal itching, pain in vulva, malodorous vaginal discharge, white vaginal discharge with a typical cottage cheese appearance, increase in vaginal discharge and dysuria. A number of studies explored the association of vaginal discharge with vaginal infections. With regards to clinical manifestations of vaginal infection among symptomatic women, all these studies found a variable degree of association between complaint of vaginal discharge and vaginal infection. Although these symptoms are not reliable, they are described in textbooks, as aids for the clinician to make a diagnosis of vaginal infection and to help choosing the proper medication.[1] In a study done by Klufio *et.al* (1995) on 206 women revealed that 38% had symptomatic infection, also abnormal vaginal discharge was seen in 91% of cases, increasing in vaginal discharge 44% and vaginal and perineal itching 47%.[16] Result of the study done by Gavagani *et. al*, (2008) on 1000 women for determining trichomoniasis prevalence, showed that the most frequent reported symptoms included malodor (52.6%), itching (36%),

dyspareunia (27.6%), dysuria (23%).¹⁵ In a the study was done by Muvunyi & Hernandez (2009), most common symptoms identified was vaginal discharge (39.3%) followed by pruritus (31.6%), combination of vaginal discharge and pruritus (22.2%).^[1]

In the present study, there is statistically significant association between presence of vaginal infection and age, educational level of woman, localized skin disease in vulva and perineum, hypersensitivity or allergic reaction to soap, pads, or clothing, intercourse while using medication for treatment of vaginal infection, wearing underwear other than cotton, vaginal douching, using oral contraceptive, having intrauterine contraceptive device (IUCD) and infertility. Most vaginal infections have no apparent cause, but several factors are mentioned in the literature as risk factors of vaginal infection including: antibiotic therapy, hormonal contraceptives, contraceptive devices, diabetes, stress, pregnancy, wearing tight-fitting clothes and synthetic underwear, vaginal medication, feminine hygiene products, poor education levels, inadequate hygiene, cigarette and sexual activity. Use of antibiotics is widely perceived to be a risk factor for Candida vaginitis through alteration of the intervaginal flora. [7, 12,13] So, more or less, there was consistency between our results and what was mentioned in literature as contributing factors.

The main limitation of the present study was unavailability of laboratory test to confirm the diagnosis of vaginal infection and to know the type of responsible micro-organisms for women with signs and symptoms of vaginal infections.

Conclusion

Abnormal vaginal signs and symptoms are important chief complains of women attending obstetrics and gynecology department of Shaqlawa Hospital. Further study by performing laboratory tests to confirm diagnosis of vaginal infections with related causative microorganisms and assessing the knowledge and practice of women regarding vaginal infection is highly recommended.

References

- 1- Muvunyi CM, Hernandez TC. Prevalence of bacterial vaginosis in women with vaginal symptoms in south province, Rwanda. *Afr J Clin Exper Microbiol* 2009;10 (3):156-63
- 2- Munden J, Maryer B. Women's health: a guide to health promotion and disorder management. Philadelphia, Lippincott Williams & Wilkins; 2005, P: 494-496
- 3- Lowdermilk D, Perry S. Maternity and women's health care. 8th ed. St. Louis: Mosby; 2004, P: 206-208
- 4- Strong B, DeVault C, Sayad B, Yarber W. Human sexuality. 4th ed. Boston, The McGraw-Hill Companies; 2002, P:220-223
- 5- Littleton L., Engebretson J. Maternal, neonatal and women's health nursing. Australia: Delmar; 2002, P: 277-280
- 6- Matteson P. Women's health during the childbearing years. St.Louis: Mosby; 2001, P: 282-283
- 7- Tempera G. Vaginal infections: epidemiology and risk factors, 2005 (Accessed August 21, 2011, at www.ecosistemavaginale.it/vaginal%20infections.html)
- 8- UNAIDS Technical Update. The public health approach to STD control; 1998, P:4
- 9- Farlex Partner Medical Dictionary, 2012, (Accessed October 20, 2013 at

<http://medical-dictionary.thefreedictionary.com/life+stress>)

10- Centers for Diseases Control and Prevention; treatment Guidelines, Diseases characterized by vaginal discharge, 2006 (Accessed September 20, 2011 at [http:// www.cdc.gov/ std /treatment/ 2006/vaginal-discharge.htm](http://www.cdc.gov/std/treatment/2006/vaginal-discharge.htm))

11- Sherrard J, Donders G, White D. European (IUSTI/WHO) Guideline on the Management of Vaginal Discharge. Int J STD AIDS 2011;22(8):421-9

12- Rao K A. Textbook of gynecology. Delhi, Elsevier; 2008, P: 229-234

13- Katz VL, Lentz GM, Rogerio AL David MG. Comprehensive gynecology. 5th ed. Philadelphia, Mosby; 2007, P: 184-186

14- Aggarwal AK, Kumar R, Gupta V, Sharma M. Community based study of reproductive tract infections among ever married women of reproductive age in a rural area of Haryana, India. J Common Dis,1999;31(4):223-8

15- Gavgani A M, Namazi A, Ghzanchaei A, Alizadeh S, Sehhat F, Rostamzadeh S et al. Prevalence and risk factors of trichomoniasis among women in Tabriz. Iranian Journal of Clinical Infectious Disease 2008; 3(2):67-71

16- Klufio C A, Amoa A B, Delamare O, Hombhanjie M, Kariwiga G, Igo J. prevalence of vaginal infections with bacterial vaginosis, trichomonas vaginalis and candida albicans among pregnant women at the Port Moresby General Hospital/Antenatal Clinic. PN G Med J. 1995;38(3):163-71