

Prevalence of Abnormal Vaginal Discharge among Pregnant Women

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Abstract

Background: Vaginal discharge is a common gynecological condition among women of childbearing age that frequently requires care affecting about one-third of all women and half of pregnant women. Pregnant women commonly develop increased vaginal discharge, which in many instances is not pathological, which may lead to pregnancy complications like abortions, premature birth, low birth weight and other morbidities.

Aim of Study: The awernes of saudi female regarding vaginal discharge during pregnancy and the impact that on her's antinatal care.

Patient and Methods: A cross sectional study was conducted among 1407 of pregnant women, Jeddah, KSA. The study aimed to determine increased vaginal secretions during pregnancy. Participants were married Saudi women attending the Obstetrics & Gynecology Department, King Abdulaziz Hospital in Almina, South Jeddah, Saudi Arabia. A pre-designed disseminated questionnaire was distributed for data collection, and data were entered and analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 23.

Results: Increased vaginal secretions during pregnancy reported in 73.9% of cases. As regard characters of secretions; 41.9% had white translucent secretions, the majority of cases 72.1% had odorless secretions. 26.1% of cases had abnormal secretions due to bacterial infection, 24.7% fungal infection. The majority of cases 71.3% seeking medical advice and recovery occurred in 62.9% of cases.

Conclusion: This study concluded that the prevalence of abnormal vaginal discharge among pregnant women was 73.9%, the most common causes was bacterial infection with reported by 26.1 %.

Key Words: Discharge – Pregnancy – Saudi – Abnormal – Vaginal.

Introduction

VAGINAL discharge is a common gynecological condition among women of childbearing age that frequently requires care affecting about one-third

of all women and half of pregnant women [1,2]. It is 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 [3]. Abnormal vaginal discharge is a common clinical problem among women of reproductive age group with multiple etiologies. It is the second most common problem after menstrual disorders [4].

WHO has defined vaginal discharge syndrome as abnormal vaginal discharge (amount, color, and odor) with or without lower abdominal pain or specific symptoms or specific risk factors [5]. Abnormal vaginal discharge is predominantly caused by replacement of normal vaginal flora by pathogenic bacteria. It is not a disease for itself but it is a symptom of other diseases as reproductive tract infections and sexual transmitted diseases, and if it isn't treated well it may lead to severe complications as pelvic inflammatory disease, ectopic pregnancy, congenital anomalies, prognosis of genital tract malignancy, so early detection and treatment of abnormal vaginal discharge decreases the maternal morbidity and mortality [6].

Almost every fourth woman in Gynecological Outpatient Department has the complaint of vaginal discharge [7]. Many studies included different levels of society reported that the prevalence of abnormal vaginal discharge as 12.1 to 30% [8,9]. The complaint of vaginal discharge is very common, particularly in South East Asia where about a quarter of all adult women report this complaint [10]. Approximately, ten million office visits each year are attributed to vaginal discharge complaints [11].

Vaginal discharge is normal in women in their childbearing years. It derives from physiological secretion of cervical and Bartholin's glands and desquamation of vaginal epithelial cells resulting from bacterial action in the vagina [12]. It normally increases at puberty, during pregnancy, at ovulation,

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sexual arousal and premenstrual phase of menstrual cycle [13]. However, in pathological vaginal discharge the secretion accompanied by itching, rash or soreness, persistent, increased discharge, burning during urination, white, clumpy discharge, a discharge that is heavier and thicker than usual and grey/white or yellow/green discharge [14].

During pregnancy genital mucosa becomes thinner and has greater surface area making pregnant women more susceptible to infections [15,16]. Pregnant women commonly develop increased vaginal discharge, which in many instances is not pathological [17]. However, abnormal vaginal discharge is the result of vulvovaginal infections that include Bacterial Vaginosis (BV), candidiasis or trichomoniasis [18,19]. Pathological vaginal discharge can cause serious harm to pregnant women and their children including prematurity, low birth weight, chorioamnionitis, postpartum endometritis, and post cesarean wound infection [20,21].

The main risk factors associated were young age, low socioeconomic condition, vaginal discharge in a previous pregnancy, depression, anemia, threatened premature labor, urinary infection, and hospitalization in the current pregnancy [12]. The women who complain of abnormal vaginal discharge don't seek medical examination except the complaint become intolerable and hinder the daily work, this may be due to modesty from reveal the genital area or felling shame to be examined by male doctor [22]. The problem of vaginal discharge contributes to a moderate degree of anxiety to both men and women in our society.

Methods and Participants

Study design and setting:

A descriptive study was carried out in Almina, South Jeddah, Saudi Arabia. The study was done in King Abdulaziz Hospital during the period from January to July 2019.

Sampling and data collection:

The targeted population was all pregnant married Saudi women in the Obstetrics & Gynecology Department, King Abdulaziz Hospital in Almina, South Jeddah, Saudi Arabia. All those agreed to participate were included. The total sample obtained was 1407 participants. All participants were pregnant, Saudi, married and could read and understand the questionnaire.

A pre-designed disseminated questionnaire was distributed for data collection throughout the period (January-July 2019).

Inclusion criteria: Participants enrolled in the study were pregnant female adults, Saudi, married, at the Obstetrics & Gynecology Department and completed the correct filling of the form.

Exclusion criteria: Participants who were not willing to participate, who did not understand the questions properly and incorrectly filled the form.

Data collection tools:

Participants were approached with a self-administered questionnaire to be filled by them with the guidance of the data collectors. A letter that explains the objectives of the study and asks for participants' consent was attached to the questionnaire.

The questionnaire required information about the history of discharge as well as questions regarding type, color, odor, medical history and treatment.

Sample size:

We expected a high response rate, however, we eliminated all invalid, incomplete responses or any responses that did not match the inclusion criteria with a total of 1407 participants.

Data management and Statistical analysis:

The collected data was entered and analyzed using the Statistical Package for the Social Science (SPSS Inc. Chicago, IL, USA) version 23. Descriptive statistics were performed. Percentages were given for qualitative variables. The determinant factors were determined using the Chi-square test. p -value was considered significant if $p < 0.05$.

Ethical considerations:

The participants were informed that participating is completely voluntary. All the participants were aware that their data will be dealt with confidentially. No names were written in the forms and the data was kept safely.

Results

Table (1): Show characteristics of participating pregnant women, the study included 1407 participants. The majority 49.6% were between 25-34 years old, 75.7% had university education. Hypertension was found in 73.9% of cases, only 2.5% had DM and the majority were non-smokers.

Table (2): Show vaginal secretions, causes, treatment and outcomes among pregnant females. Increased vaginal secretions during pregnancy occurred in 73.9% of cases, 74.3% had increased discharge during active infections. 45.1% of preg-

nant females had itching of the vulva, 44.6% had inflammation of the vulva. As regard characters of secretions; 41.9% had white translucent secretions, the majority of cases 72.1% had odorless secretions. 45.9% of cases was diagnosed as normal secretions, 26.1% due to bacterial infection, 24.7% fungal infection and only 3.3% sexually transmitted infections. 41.6% of women reported pain during intercourse and 34.2% had dysuria during period of increased secretions. The majority of cases 71.3% seeking medical advice, 73.3% had prescribed medications and recovery occurred in 62.9% of cases.

Table (3): Show association between increased vaginal secretions in pregnancy and characters of participants. There was a significant correlation between increased vaginal secretions in pregnancy and daily washing and cleaning, itching in the vulva, mass in the genital tract, inflammation of the vulva and pain during intercourse ($p < 0.05$). However, no relation found with age groups, educational level, obesity, hypertension and DM ($p > 0.05$).

Table (1): Characteristics of participating pregnant women, Jeddah, 2019 (n=1407).

Variables	Frequency (N=268)	Percent
Age group:		
18-24	429	30.5
25-34	698	49.6
35-44	251	17.8
>=45	29	2.1
Educational level:		
Illiterate or primary	6	0.4
Elementary	32	2.3
Secondary	304	21.6
University or more	1065	75.7
Smoking:		
No	1358	96.5
Yes	49	3.5
Obesity:		
No	1167	82.9
Yes	240	17.1
Hypertension:		
No	1385	98.4
Yes	22	1.6
DM:		
No	1372	97.5
Yes	35	2.5
Monthly income:		
Poor	117	8.3
Average	510	36.2
Good	303	21.5
Very good	368	26.2
Excellent	109	7.7
Hypertension:		
No	367	26.1
Yes	1040	73.9

Table (2): Vaginal secretions, causes, treatment and outcomes among pregnant females, Jeddah 2019 (n=1407).

Variables	Frequency (N=268)	Percent
Increased vaginal secretions during pregnancy:		
Yes	1040	73.9
No	367	26.1
Mass in the genital tract:		
Yes	53	3.8
No	1354	96.2
Increased discharge during active infections:		
Yes	1045	74.3
No	362	25.7
Discharge associated with menstrual bleeding occurs:		
Before	764	54.3
During	146	10.4
After	497	35.3
Itching of the vulva:		
Yes	635	45.1
No	772	54.9
Inflammation of the vulva:		
Yes	628	44.6
No	779	55.4
Color of vaginal secretions:		
White translucent	589	41.9
White opaque	439	31.2
Yellow	379	26.9
Odor of the secretions:		
Odorless	1014	72.1
Offensive	393	27.9
Daily washing and cleaning:		
Water only	800	56.9
Water and soap	196	13.9
Anti-septic and medical products	411	29.2
Pain during intercourse:		
Yes	585	41.6
No	822	58.4
Dysuria during period of increased secretions:		
Yes	481	34.2
No	926	65.8
Seeking medical advice:		
Yes	1003	71.3
No	404	28.7
Diagnosis:		
Bacterial infection	367	26.1
Fungal infection	348	24.7
Sexually transmitted infections	46	3.3
Normal	646	45.9
Prescribed medications:		
Yes	1031	73.3
No	376	26.7
Prognosis:		
Recovery	885	62.9
No recovery	522	37.1

Table (3): Association between increased vaginal secretions in pregnancy and characters of participants, Jeddah 2019 (n=1407).

Variables	Increased vaginal secretions in pregnancy		Total	p-value
	Yes	No		
<i>Age groups:</i>				
18-24	101 (23.5%)	328 (76.5%)	429 (100.0%)	0.116
25-34	179 (25.6%)	519 (74.4%)	698 (100.0%)	
35-44	76 (30.3%)	175 (69.7%)	251 (100.0%)	
>=45	11 (37.9%)	18 (62.1%)	29 (100.0%)	
<i>Monthly income:</i>				
Poor	13 (11.1%)	104 (88.9%)	117 (100.0%)	0.002
Average	140 (27.5%)	370 (72.5%)	510 (100.0%)	
Good	77 (25.4%)	226 (74.6%)	303 (100.0%)	
Very good	102 (27.7%)	266 (72.3%)	368 (100.0%)	
Excellent	35 (32.1%)	74 (67.9%)	109 (100.0%)	
<i>Educational level:</i>				
Illiterate or primary	1 (16.7%)	5 (83.3%)	6 (100.0%)	0.178
Elementary	8 (25.0%)	24 (75.0%)	32 (100.0%)	
Secondary	94 (30.9%)	210 (69.1%)	304 (100.0%)	
University or more	264 (24.8%)	801 (75.2%)	1065 (100.0%)	
<i>Obesity:</i>				
Yes	55 (22.9%)	185 (77.1%)	240 (100.0%)	0.125*
No	312 (26.7%)	855 (73.3%)	1167 (100.0%)	
<i>Hypertension:</i>				
Yes	5 (22.7%)	17 (77.3%)	22 (100.0%)	0.469*
No	362 (26.1%)	1023 (73.9%)	1385 (100.0%)	
<i>DM:</i>				
Yes	9 (25.7%)	26 (74.3%)	35 (100.0%)	0.569*
No	358 (26.1%)	1014 (73.9%)	1372 (100.0%)	
<i>Daily washing and cleaning:</i>				
Water only	183 (22.9%)	617 (77.1%)	800 (100.0%)	0.007
Water and soap	58 (29.6%)	138 (70.4%)	196 (100.0%)	
Anti-septic and medical products	126 (30.7%)	285 (69.3%)	411 (100.0%)	
<i>Itching in the vulva:</i>				
Yes	8 (15.1%)	45 (84.9%)	53 (100.0%)	0.000*
No	266 (34.5%)	506 (65.5%)	772 (100.0%)	
<i>Mass in the genital tract:</i>				
Yes	8 (15.1%)	45 (84.9%)	53 (100.0%)	0.040*
No	359 (26.5%)	995 (73.5%)	1354 (100.0%)	
<i>Inflammation of the vulva:</i>				
Yes	102 (16.2%)	526 (83.8%)	628 (100.0%)	0.000*
No	265 (34.0%)	514 (66.0%)	779 (100.0%)	
<i>Pain during intercourse:</i>				
Yes	109 (18.6%)	476 (81.4%)	585 (100.0%)	0.000*
No	258 (31.4%)	564 (68.6%)	822 (100.0%)	

Discussion

Vaginal discharge is a very common symptom in primary health care [23]. One woman in 10 will present with vaginal discharge in the course of a year [24]. An initial symptom of most reproductive tract diseases is abnormal vaginal discharge, which can be physiological or pathological [25]. Pathological causes for vaginal discharge are due to genital tract malignancy, fistulae, allergic reactions,

atrophic vaginitis (menopausal) and reproductive tract infections [26]. The most common causes of vaginal discharge are physiological causes, bacterial vaginosis, and candidiasis [27]. Pregnant women commonly develop increased vaginal discharge, which in many instances is not pathological [17], which may lead to pregnancy complications like abortions, premature birth, low birth weight and other morbidities. This is across sectional study was conducted among 1407 of participating preg-

nant women, Jeddah, KSA. The study aimed to determine increased vaginal secretions during pregnancy.

Pregnant women commonly develop increased vaginal discharge. Ours study found that increased vaginal secretions during pregnancy occurred in 73.9% of cases. Similar to our results, another cross-sectional study was carried out on pregnant women in different regions of Saudi Arabia, reported that the incidence of increased vaginal discharge among the studied pregnant women was 72.2% [28]. Another cross-sectional study was carried out which included 233 pregnant females attending the obstetric clinic in the tertiary hospital of Western India found that; a total of 183 (78.54%) pregnant females had vaginal discharge on clinical examination [29]. Another study was conducted among 206 pregnant women reported high prevalence rate of abnormal vaginal discharge; the abnormal discharge was seen in (91%) of cases [30]. However, another study conducted in the city of the Rio Grande, Southern Brazil among 2,395 pregnant women, which reported that 43% of them had pathological vaginal discharge during pregnancy [12]. Also, another study carried out among 400 pregnant women reported; the prevalence of abnormal vaginal discharge in pregnancy was 31.5% [31].

Regarding to characters of secretions; 41.9% of cases had white translucent secretions and the majority 72.1% had odorless secretions. Another study reported that the discharge was colorless in 39.1% of cases, whitish in 32.1% and yellowish in 28.7% and similar to our findings the majority 69.9% reported not offensive smell of secretions [28].

Diagnosis of various causes of vaginal discharge are done by detailed history taking, physical examination and investigations. As regards causes of abnormal vaginal discharge; 45.9% of cases was diagnosed as normal secretions, 26.1% due to bacterial infection, 24.7% fungal infection and only 3.3% were due to Sexually Transmitted Infections. In contrast to our results another study reported; the most common causes were fungal infection in 23.3% of cases, a bacterial infection in 22.6%, only 2.4% for sexually transmitted diseases and similar to our results 51.6% reported normal discharge [28]. In contrast to these findings, studies were carried out in developing countries demonstrated that the vaginal discharge is caused by STIs in up to 90% of cases [32,33].

According to association between increased vaginal secretions in pregnancy and characters of participants; we found that there was a significant correlation between increased vaginal secretions in pregnancy and daily washing and cleaning, itching in the vulva, mass in the genital tract, inflammation of the vulva and pain during intercourse ($p < 0.05$). However, no relation found with age groups, educational level, obesity, hypertension and DM ($p > 0.05$). In dis agreement with our results, another study reported that increased vaginal discharge with pregnancy was significantly associated with the age group of pregnant women ($p < 0.05$), similar to our findings no relations found with educational level, obesity, hypertension and DM ($p > 0.05$) [28]. Another study found that pathological vaginal discharge during pregnancy was significantly associated with; maternal age; living with a partner; household asset index; parity; vaginal discharge in a previous pregnancy; and diabetes, depression, threatened premature labor, urinary infection, and hospitalization during the current pregnancy [12].

The majority of cases 71.3% seeking medical advice, 73.3% had prescribed medications and recovery occurred in 62.9% of cases. Another study reported, 68.7% of cases seeking medical care, 66.3% had medical treatment and improvement occurred in 56% of cases, recurrence after treatment occurred in 43.4% [28].

Conclusion:

This study concluded that the prevalence of abnormal vaginal discharge among pregnant women was 73.9%, the most common causes was bacterial infection with reported by 26.1%.

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انتشار الإفرازات المهبليّة غير الطبيعيّة بين النساء الحوامل

الخلفية العلميّة: الإفرازات المهبليّة هي حالة شائعة في بين النساء في سن الإنجاب والتي تتطلب في كثير من الأحيان رعاية، وهي تؤثر على ثلث جميع النساء ونصف النساء الحوامل. عادة ما تصاب النساء الحوامل بإفرازات مهبليّة متزايدة، وهو أمر غير مرضى في نسبة كبيرة، ولكن قد يؤدي إلى مضاعفات الحمل مثل الإجهاض والولادة المبكرة وإنخفاض وزن المولود عند الولادة وغيرها من الأمراض.

طريقة البحث: أجريت دراسة مقطعية بين ١٤٠٧ من النساء الحوامل في جدة، المملكة العربيّة السعوديّة. تهدف الدراسة إلى تحديد نسبة زيادة إفرازات المهبل أثناء الحمل. الفئة المشاركة في البحث هي النساء السعوديات المتزوجات الزائرات قسم النساء والولادة بمستشفى الملك عبد العزيز، المينا، جدة. تم توزيع إستبيان منشور مُصمم مسبقاً لجمع البيانات، وتم إدخال البيانات وتحليلها باستخدام الإصدار الإحصائي للعلوم الاجتماعيّة SPSS IL , Inc. Chicago، الولايات المتحدة الأمريكيّة الإصدار ٢٣.

النتائج: زيادة الإفرازات المهبليّة أثناء الحمل في ٧٣.٩٪ من الحالات. فيما يتعلق بوصف الإفرازات، ٤١.٩٪ لديهم إفرازات شفافة بيضاء. وكان لدى غالبية الحالات ٧٢.١٪ إفرازات عديمة الرائحة. ٢٦.١٪ من الحالات لديها إفرازات غير طبيعيّة بسبب العدوى البكتيريّة، و٢٤.٧٪ بسبب العدوى الفطريّة. غالبية الحالات ٧١.٣٪ طلب المشورة الطبيّة والشفاء وقع في ٦٢.٩٪ من الحالات.

الخلاصة: تستنتج هذه الدراسة إلى أن معدل إنتشار الإفرازات المهبليّة غير الطبيعيّة بين النساء الحوامل (كان ٧٣.٩٪)، وكانت الأسباب الأكثر شيوعاً هي العدوى البكتيريّة التي أبلغ عنها بنسبة ٢٦.١٪.