RESEARCH ARTICLE

PREVALENCE OF ABNORMAL PAP SMEAR AND COLPOSCOPY RESULTS IN WOMEN AT CLINIC OF ALZAHRAWI HOSPITAL IN 2015-2016

Hisham Al-Hammami[1], Lina Aldounia[2], Mhd Nezar Alsharif[3*], Yaser Fawaz[4]

Faculty of medicine, Syrian Private University. Damascus, Syrian Arab Republic

ABSTRACT

Currently, there is no screening program for the early detection and management of cervical cancer in Syria. This study aimed to determine the Prevalence of abnormal Pap smear and colposcopy results in a sample of women at clinic of ALZHRWI HOSPITAL in 2015-2016. This prospective descriptive longitudinal observational population study in women between 14-70 years old reviewing. Samples from the cervix were obtained by a standard method using the spatula. Data were analyzed using the Roc Curve and Kendall's tua-b factor and box plots using SPSS. Abnormal Pap smear results included 710 cases (69.4% of all sample) with dysplastic changes in 128 cases (12.5% of all sample) with the majority of them being LGSIL (low grade squamous intraepithelial lesion) with 55.5%(71 cases of the 128 cases). The highest percentage of a cervical abnormality in our study was LGSIL (6.9% of all sample). The Pap smear results were significantly related to marriage age, habits (smoker or not), living address, number of parities, age of first pregnancy, symptoms, cervical appearance, and colposcopy results. 48 women of the 250 who have had a colposcopy had abnormal changes (19.2% of all patients' who have had a colposcopy). Cervical biopsies were taken from 29 patients (11.6% of patients who have had a colposcopy and 2.8% of all sample). 37.9% (of all biopsy results' had dysplastic (precancerous) changes and 7 of them (63.6%) had dysplastic (precancerous) changes smear.

INTRODUCTION

Cervical cancer (CC) prevalence differs a lot around the world especially between developing and developed countries, which have a lower incidence because of the highly efficient screening tests. While on the other hand, the prevalence in developing countries is still high because it is difficult to have these tests regularly. According to the latest world cancer statistics. CC (with 528000 new cases annually) is considered the fourth most common cancer in women globally and the second most common in developing areas (445000 new cases per year). CC causes 266000 deaths per year around the world, which makes it the fourth place in cancer related deaths and in the third place in developing countries with a mortality rate of 230158 cases. (1) In the USA in 2017, it is estimated that about 12,820 new cases of invasive cervical cancer will be diagnosed and about 4,210 women will die from it. (2)

Cervical cancer has a long latency period (pre-cancerous) before transforming into a malignancy, because of this early detection can protect many women from death. (3)

HPV (human papilloma virus) (a sexually transmitted disease) is the cause of cervical cancer in 70% of the cases (4) and thus it is less common in conservative societies and religious countries.

The incidence could be limited by giving HPV vaccine for high-risk women and doing regular Pap smear test. (5)

Pap smear is an easy, effective and a cheap method for detecting women with cervical cancer. The risk factors for cervical cancer are early age of marriage, polygamy (multiple sexual partners), multiparty, smoking and long use of oral contraceptive pills and most of them are found in Syria especially early marriage and the long use of OCPs (Oral Contraceptive Pills), also there is no screening programs for cervical cancer currently active in Syria. (5)

In such a study ,conservative societies has a low potential of developing cancer but the lack of cervical cancer screening programs and the diagnosis of the cancer at a late stage make it highly fatal.(6).

Up to our Knowledge, there is no previous study published in Syria to compare with.

Our study aims to:

(i): increase the awareness about precancerous lesions prevalence.

(ii): emphasize the importance of screening programs among women.

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MATERIALS AND METHODS

This study was a prospective descriptive longitudinal observational population study in the patients reviewing AlZahrawi Hospital in 2016 in Syria. The study population included 14-70 year old women living in urban and rural areas of Damascus and the other cities in Syria. 1022 patients had the inclusion criteria stated below and were selected in our study .All participants were selected according to the inclusion criteria in and they were random patients reviewing the hospital for different reasons. (1060 patients who met the inclusion criteria were asked and 1022 of them agreed to participate). (3.5% of all women who were asked refused to participate due to religious beliefs or shyness).

The inclusion criteria: 1- voluntary participation and informed consent. 2- Application of the Pap smear test criteria including: no usage of sterilizing or lubricants with the speculum-no usage of any topical vaginal treatments-no sexual intercourse with in 24hrs of examination-no menses or vaginal bleeding at the time of smear taking. All the women were screened according to the inclusion criteria stated before. All The questionnaires were done by

medical students or doctors to insure the privacy.

Pap smear test was done in all married women with high risk for developing cervical cancer and that includes early age at first sexual intercourse, multiple sexual partners, history of previous STD (sexually transmitted diseases), post coital bleeding recurrent vaginal discharge, clinically suspected cervical lesions and history of any previous treatment for cervical lesions.

The colposcopy was done for patients with at least one of the following smear results: dysplastic changes, ASCUS (Atypical squamous cell of undetermined significance), evidence of HPV infection, multiple repeated unexplained inflammation or for patients with clinically suspected with cervical lesion or post-coital bleeding with negative smear results and in some patients at the same time with the Pap smear result based on the clinical examination because of the difficulty for these patients to come back and review the hospital (difficulties in road traveling due to living in the suburbs which are far from the hospital and health centers). It was also used for follow up in patients treated for CIN (cervical intraepithelial lesion) or cervical cancer.

Exclusion criteria included: any patient that did not fit the inclusion criteria also the patients with active cervicitis, postmenopausal women with no estrogen preparation, women with menorrhagia and uncooperative patients.

The data collection tool was a questionnaire on demographic and reproductive with information about the Pap smear test results and colposcopy results. The sections regarding demographic and reproductive information were obtained by interviews done by practitioners and students.

After obtaining written consents from the patients, sampling of the cervix was done by trained practitioners using standard methods. Spatula was used to obtain the samples from the cervix. After that, each sample was spread on a lam and then fixed with 95% alcohol. 1022 samples were obtained and sent to pathology examination (who used The Bethesda 2001 classification) accompanied by 30 punch biopsy samples taken during colposcopy. For the data analysis Roc Curve with Kendall's tua-b factor and box plots were used to show the correlation between the Pap smear test results and the study variables. Statistical Analysis was done by a specialized doctor in Syrian Private University using SPSS 23.0(SPSS Inc., USA)

RESULTS AND DISCUSSION

Most of the participants were between 20 and 55 years and housewives. The mean age of first marriage in participants was 19.43±4.97.The mean age of first pregnancy was 19.57±4.54.Most of the women had 2 -5 parities. 97.5% of the patients had not had a previous Pap smear. (Table 1)

Variable		frequency	percent	total
Age	≤25	177	17.3	
	26-45	603	59	1022
	46-70	242	23.6	
Living area	Urban[1]	490	48	1022
	Rural[2]	532	52	
Parity	≤3	649	63.5	
	4-6	360	28.7	1022
	≥7	155	7.7	
Previous Pap smear test	No	996	97.5	1022
	Yes	26	2.5	

[1]Urban areas: These included the people living in Damascus in areas considered expensive and of a more high-income group.

[2]Rural: These included the people living in Damascus in areas considered cheaper and of a more low-income group.

Pap smear test results revealed 69.4% of the cases (710 cases) with abnormal changes with inflammatory changes in 582 (81.9% cases of abnormal changes,56.9% of all sample) and cervical dysplastic changes in 128 cases (12.5% of all sample,18% of abnormal changes) with 55.5% (71 cases) of them related to LGSIL.(highest ratio). Table 2 shows the percentage of each abnormal change.

Table 2: Abnormal Pap smear results percentage based on Bethesda 2001.

Variable		frequency	Percent from the abnormal dysplastic changes	Percent from the whole sample
Abnormal changes		710	-	69.4
Inflammatory changes		582	-	56.9
Dysplastic changes	ASCUS	40	30.5	3.9
	LGSIL	71	55.5(highest ratio)	6.9
	HGIL	14	11	1.4
Cervical cancer		3	2.3	0.3

A statistically significant association was observed between the Pap smear test results and the age of marriage (P<0.04), habits (smoker or nonsmoker) (P<0.008), living address (P<0.001), number of parities (P<0.043), age of first pregnancy (P<0.02), symptoms (especially post-coital bleeding) (P<0.02), cervical appearance (P<0.000) colposcopy (P<0.000) and pathological examination of biopsies (P<0.001). Table 3 and Table 4.

Table 3: The relation between Pap smear results and risk factors 'with significant association

Kendall's tau_b		Smear
Age of marriage	Correlation Coefficient	-.052[*]
	Sig. (2-tailed)	.040
	N	1022
habits	Correlation Coefficient	-.080[**]
	Sig. (2-tailed)	.008
	N	1022
address	Correlation Coefficient	-.094[**]
	Sig. (2-tailed)	.001
	N	1022
number of parities	Correlation Coefficient	.194[**]
	Sig. (2-tailed)	.000
	N	1022
age of first pregnancy	Correlation Coefficient	-.094[**]
	Sig. (2-tailed)	.002
	N	727
symptoms	Correlation Coefficient	.091[**]
	Sig. (2-tailed)	.002
	Correlation Coefficient	-.052[*]

Table 4: The relation between Pap smear results and pathological examination of biopsies

Kendall's tau_b		smear
Pathological (biopsy) results	Correlation Coefficient	.569**
	Sig. (2-tailed)	.000
	N	29

**. Correlation is significant at the 0.01 level (2-tailed).

This relationship was not significant in patients' age, marital status (married, divorced, widow), number of abortions, number of marriages, number of abortions, the use of contraceptive methods, physical examination of cervix and uterus and Accompany examination (examination of the adnexa) (bimanual examination). (P value >0.050). (Table 5).

Table 5: The relation between Pap smear results and risk factors' without significant association:

Kendall's tau_b		smear
Age	Correlation Coefficient	.017
	Sig. (2-tailed)	.486
	N	1022
Marital status	Correlation Coefficient	.033
	Sig. (2-tailed)	.258
	N	1022
Contraceptive	Correlation Coefficient	-.052
	Sig. (2-tailed)	.062
	N	1022
Number of abortions	Correlation Coefficient	-.030
	Sig. (2-tailed)	.288
	N	1022
Number of marriages	Correlation Coefficient	-.005
	Sig. (2-tailed)	.864
	N	1022

Cervical cancer is one of the most common causes of death among women in Developing countries. It has many different risk factors and we studied most of them as shown in tables (3 and 5). We reviewed those with significant results (P value <0.05 and a strong correlation coefficient).

The mean age of marriage of women in our study was 19.5. It is thought that this detail is was important because women married at ages younger than 18 years old had significantly associated abnormal smear results(7). In a similar Indian study the cervical cancer prevalence dropped by 6.3% when the number of marriages between (15-19 years old) was reduced. (8).In our study, women who were married at ages between

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12-20 had the highest dysplastic changes ratio 69.5 % (89 of 128 cases).

68.6% of the patients were from areas of low socioeconomic status (like suburbs) and 71.2% of patients with dysplastic changes on Pap smear (89/125) were from these areas. (9)

Women who smoke are more likely to get cervical cancer than nonsmokers are. It is because tobacco by products damage cervical cells, also smoking weakens the immune system and therefore lowers its effectiveness against HPV infections (10). 30% of women in our study were smokers.

Number of parities is highly associated with CC risk. According to a study done by the International Collaboration of Epidemiological Studies of Cervical Cancer, women with 7 or more pregnancies had a 1.76 higher risk compared to women with 1-2 full term pregnancies. (11). in our study, about 8% of women had 7 or more parities.

The age of first pregnancy (AFP) is highly related to CC risk. In developing countries, AFP and age of first sexual intercourse (AFSI) are strongly correlated. In developing countries, early AFSI and thus early AFP have higher risk for having invasive cervical carcinoma (ICC). (12) In our study, the mean AFP was 19.5 and about 50% of women had a pregnancy while still younger than 20 years old.

Cervical ectropion does not increase the risk for developing CC. while cervical polyps have a 1:1000 incidence of malignancy especially in pre or post-menopausal women. Chronic cervicitis has a high risk of developing cervical cancer due to increased susceptibility of acquiring high risk HPV. In our study 71 patients (6%) had chronic cervicitis and 25% of them had an abnormal smear ranging from ASCUS to HGIL (high grade intraepithelial lesion).

Early CCs are usually asymptomatic until late stage. (10). Post-coital bleeding has many causes but the most serious one is cervical cancer. Post-coital bleeding prevalence in women with cervical cancer is between 0.7 and 39 %. In our study, post-coital bleeding has been reported in 22% of all LGSIL cases compared to 29% of all HGIL cases and in 33% of all cervical cancer cases.

Colposcopy, which is a procedure to closely examine the cervix, is used when the Pap smear test shows abnormal results and could be used in taking biopsies. In our study, 24.5% of the participants have had a colposcopy. Positive colposcopy results

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include finding vascular abnormalities such as (punctuation, mosaicism, and atypical vessels), whitening of the cervical epithelium after using acetic acid and iodine negative epithelium.

On the colposcopy examination, we found 48 patients with abnormal results (19.2% of all patients' who have had a colposcopy). The squamocolumnar junction was not visible on colposcopy (unsatisfactory colposcopy) in about 27% of participants who have had a colposcopy.

Cervical biopsies were taken from 29 patients (11.6% of patients who have had a colposcopy and 2.8% of all sample). 37.9 % (of all biopsy results' had dysplastic (precancerous) changes and 7 of them (63.6%) had dysplastic (precancerous) changes on Pap smear results.

We referred the cases with cervical cancer on colposcopy and biopsies to the hospital for further investigations and treatment, while the cases with dysplastic changes were treated with cryosurgery. Pap smear test results were abnormal in 69.4% of the cases (710 cases) and 81.9% of them (582 cases) had inflammatory changes. Cervical dysplastic changes were observed in 128 cases (18% of abnormal results, 12.5% of all sample) with 31.3 %(40 cases) of them

related to ASCUS, 55.5% (71 cases) related to LGSIL (highest ratio), 11% (14 cases) had HGIL and 2.3% (3 cases) had cervical cancer. A similar study by azam maleki (19) showed cervical dysplastic changes in 173 cases (4.04% of all sample) with 81 cases (47.2%) related to ASCUS, 43 cases (24.7%) had LGSIL and 6 cases (3.46%) had HGIL, this showed the high prevalence of LGSIL and HGIL in our study. However, there were no previous studies to compare with. This high ratio shows the importance of our study and is most likely due to lack of screening programs, health care, awareness of the disease and the decreasing number of healthcare practitioners. All led to the delay in the early detection and management of cervical abnormalities.

Compliance with Ethical Standers

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards Informed consent: Informed consent was

obtained from all individual participants included in the study.

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