



PATTERN AND FACTORS AFFECTING PAP SMEAR
TEST IN NABLUS, A RETROSPECTIVE STUDY

Dr. Samar Ghazal/Musmar*, MD, American Board Certified

*Clinical Assistant Professor, Family Medicine, Al-Quds University, College of Medicine, An-Najah University, College of Pharmacy, and College of Medicine, Nablus Palestine.

Correspondence:

Dr. Samar Ghazal/Musmar

P.O.Box 608

Nablus/West Bank

Palestine

E-mail: smusmar@hotmail.com

Phone #: 970-9-2338722

Mobile#: 970-59-840440

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Abstract:

Background: This retrospective study was performed at the Family Practice clinic, Nablus, in the West Bank/Palestine. The objective of the study was to determine pattern and factors influencing pap smear test, and involved 201 women visiting the clinic for different gynecologic problems during the year 2002.

Methods: We analyzed the records of all patients who had pap smear done during this period, categorizing their age, occupation, level of education, their obstetric history including number of deliveries, methods of contraception, and menstrual period regularity.

Results: About 12% of the study sample had abnormal (precursors of cervical cancer) results and the majority (88%) had normal and benign changes. There was no statistically

significant relationship between the cervical cytology pap results and age, occupation, education, smoking, parity, contraceptive method or frequency of genital infections.

Conclusion: More than 50% of women in the study heard about pap test through their doctor. Primary health care doctors and gynecologists are encouraged to offer pap tests for their patients. A screening program for cervical cancer is called for through collaboration between all Palestinian health providers.

Introduction

Pap smear is a relatively simple cost-effective screening test that is carried out in conjunction with gynecologic exam at the primary health care level to detect abnormalities that might lead to cervical cancer (1). Pap test is at present the most essential element in prevention of developing cervical cancer (2).

Globally, cancer of the cervix is the second most common cancer in women after breast cancer, and is the most common cancer of women in developing countries, where it is estimated that only about 5% of women have been screened for the disease with pap smear, compared to 40-50% in developed countries (3). In Palestine, limited information is available on the incidence of cervical cancer in the West Bank and Gaza strip, and the mortality resulting from it. One review shows that the incidence of cervical cancer for 1991-1992 in the West Bank and Gaza was 2.3/100,000 females (4).

In review of literature, there are very few studies done on pap smear or cervical cancer in the Arab countries. Altaf found that 3.1% of screened cytology cases in Western Saudi Arabia have abnormal cervical smears (5).

A pap smear study in the west Bank, Palestine found that most of pap smears were done by Non Governmental Organizations or charitable institutions (81%), and only 18% were done by private clinics. The study also found that only 12 % of pap smears were done in Nablus area (6).

The aim of this study is to determine the pattern of cervical cytology of pap smears in Nablus area. The study also aims to find if there is any association between cytology results and risk factors for cervical cancer.

Materials and Methods:

This is a retrospective study of all Pap smears performed for women attending the Family Practice Clinic in Nablus, West Bank, Palestine during the year of 2002. Data were collected from files of all women who underwent pap smear test during that period. The Family Practice Clinic in Nablus is a private clinic operated by American Board certified female doctor. Women from all social classes attend this clinic for their medical care including gynecological care. A pap test is offered to every woman who undergoes gynecologic exam in the clinic provided that she did not have a test done in the previous year. A questionnaire containing data about patient's age, occupation, education, smoking, pap awareness, if a previous pap was done, parity, contraception use, menstrual

period, genital infections, and family history of cancer is usually filled out and attached to her file. All pap smear samples from this clinic are sent for pathology reports to Medlab (Nablu). This pathology lab. follows Bethesda System for reporting pap smear results which adopts descriptive diagnoses, (Benign cellular changes including infections, Reactive Changes including inflammation, Atrophy, & Intrauterine contraceptive device (IUD)related cellular changes, and finally Epithelia cell Abnormalities including Atypical squamous cells of undetermined significance (ASCUS), Low-grade squamous intraepithelial lesion (LGSIL), High-grade squamous intraepithelial lesion (HGSIL), Atypical glandular cells of undetermined significance (AGUS) and Squamous cell carcinoma (7).

A total number of pap tests done were 201. Data from the filled questionnaire and pathology reports for all the tests were computed and analyzed using Statistical Package for Social Sciences (SPSS) version 10.0. A relationship between cervical cytology results and all variables in the questionnaire is calculated applying Chi Square formula with $p = .05$ level of significance.

Results:

Demographic and Social Profile of the study sample: Table 1 shows that most of the study sample were 20-45 years old (75.1%), most of them were nonsmokers (81.8%), most of them were housewives (79.1%), and more than a half had high school education or below (59.7%).

Table 1. Frequency and percent of patient's age, smoking, occupation, and education (sociodemographic profile of the study sample)

Variable	Frequency	Percent
Age		
< 20	2	1.0
20-45	151	75.1
>45	48	23.9
Total	201	100.0
Smoking		
Yes	38	18.9
No	163	81.1
Total	201	100.0
Occupation		
housewife	159	79.1
employed	36	17.9
laborer	6	3.0
Total	201	100.0
<i>Education</i>		
No	16	8.0
High school or less	120	59.7
College or more	65	32.3
Total	201	100.0

Gynecologic Profile of the study sample:

Most of the study sample women have regular period (60.7%), almost half of them had less than 4 deliveries (49.3%), more than a third use IUD as birth control (39.3%) and majority have only occasional genital infection (77.6%), see table 2.

Table 2. Gynecologic profile of the study sample

Menstrual period	Frequency	Percent
Regular	122	60.7
Irregular	37	18.4
stopped completely	42	20.9
Total	201	100.0
Parity	Frequency	Percent
less than 4	99	49.3
4-8	85	42.3
more than 8	17	8.5
Total	201	100.0
Method of contraception	Frequency	Percent
Pill	16	8.0
IUD	79	39.3
Injection	1	0.5
local method	14	7
no method	90	44.8
BTL	1	0.5
Total	201	100.0
Genital infections	Frequency	Percent
more than 4 time / year	30	14.9
occasional (1-2 time)	156	77.6
Rare	15	7.5
Total	201	100.0

Cellular Changes on pap smear reports for the study sample:

Majority of pap results were in the category of normal or benign changes (84.6%), the rest had abnormal cellular changes in the form of ASCUS (8%), LGSIL (1%), AGUS (2%), and carcinoma (1%), see table 3.

Table 3. Results of pap smear for the study sample

Result	Frequency	%	Valid %	Cumulative %
normal	27	13.4	13.4	13.4
reactive	115	57.2	57.2	70.6
atrophy	28	13.9	13.9	84.6
ASCUS	16	8.0	8.0	92.5
LGSIL	2	1.0	1.0	93.5
AGUS	4	2.0	2.0	95.5
carcinoma	2	1.0	1.0	96.5
insufficient / inadequate sample	7	3.5	3.5	100.0
Total	201	100.0	100.0	

Relationship between different variables and cervical cytology results:

Table 4 shows that there was no statistically significant relationship between the cervical cytology pap results and age ($P=0.225$), occupation ($P=0.690$), education ($p=0.912$), Pap test awareness ($p=0.130$), and history of previous Pap test ($p=0.191$). Regarding other risk factors the table also shows no statistically significant relationship between the cervical cytology Pap results and smoking ($p=0.346$), family history of cervical cancer ($p=0.729$), parity ($p=0.693$), menstrual period regularity ($p=0.927$), contraceptive method ($p=0.470$), and finally the frequency of genital infections ($p=0.064$).

Table 4. Relationship between pap smear results and different study variables

Pap smear results				
Variable		*Normal & Benign changes N(%)	**Abnormal cellular changes N(%)	P value
Age	< 20	1(0.5)	1(0.5)	0.225
	20-45	134(66.7)	17(8.5)	
	>45	41(20.4)	7(3.5)	
Occupation	housewife	138(68.7)	21(10.4)	0.690
	employed	33(16.4)	3(1.5)	
	laborer	5(2.5)	1(0.5)	
Education	no	14(7)	2(1)	0.912
	≤High school	106(52.7)	14(7)	
	≥College	56(27.9)	9(4.5)	
pap smear awareness	media	19(9.5)	4(2)	0.130
	a friend	44(21.9)	29(14.5)	
	never heard	21(10.4)	6(3)	
	My doctor	92(45.8)	13(6.5)	
Previous pap	Yes	23(11.4)	1(0.5)	0.191
	No	153(76.1)	24(11.9)	
Smoking	Yes	35(17.4)	3(1.5)	0.346
	No	141(70.1)	22(10.9)	
Family history of cervical cancer	Yes	10(5)	1(0.5)	0.729
	No	166(82.6)	24(11.9)	
Parity	<4	86(42.8)	13(6.5)	0.693
	4-8	74(36.8)	11(5.5)	
	>8	16(8)	1(0.5)	
Period	regular	106(52.7)	16(2)	0.927
	irregular	33(16.4)	4(2)	
	menopause	37(18.4)	5(2.5)	
Contraception	Pill	13(6.5)	3(1.5)	0.470
	IUD	74(36.8)	5(2.5)	
	injection	0	1(0.5)	
	local method	9(4.5)	5(2.5)	
	no method	79(39.3)	11(5.5)	

	BTL	1(0.5)	0	
Genital infections	>4/year	24(11.9)	6(3)	0.064
	1-2 /year	141(70.1)	15(7.5)	
	rare	11(5.5)	4(2)	

* Normal & Benign changes: (normal, reactive, atrophy)

**Abnormal cellular changes: (ASCUS, AGUS, LGSIL, Carcinoma)

Discussion:

In this study only 12% (25/201) of the study sample had abnormal (precursors of cervical cancer) results and the majority 88 %(76/201) had normal and benign changes.

This study, the first of its kind to be conducted in Nablus area, shows that women from different ages will accept pap test if they are offered the test, regardless of their level of education, or occupation. It is obvious from the data in table 4 that doctors can play important role in offering this test to their patients (more than 50% of women first knew about the test from their doctor).

Some of the possible risk factors for cervical cancer has been explored in this study. Although cigarette smoking is commonly associated with risk of cervical cancer and some authors consider the association to be causal (8), this association was not statistically significant with cervical cytology results in this study. The percent of smokers in our study was relatively small to contribute to any association. However in the literature, Nicotine has been found in the cervical mucus of smokers and might possibly be a factor in the carcinogenicity of HPV (9).

The biological cause of cervical cancer is not known. However it is now believed to be strongly linked to HPV (Human Papilloma Virus) (10).Other associated risk factors for cervical cancer have been explored. Many studies have associated cervical cancer with sexual activity with numerous partners, and epidemiologically it behaves as sexually transmitted disease (11). Sexual activity before age 15 increases the risk of cervical cancer tenfolds (12).

Our study found no significant relationship between the frequency of genital infections and abnormal cervical cytology detected by pap smear.The association between high parity and increased risk of cervical cancer has been demonstrated in several studies in Western countries (13). The Latin American Cervical Cancer study showed that women with 12 or more live births were at a four-fold excess risk compared with women with one or no births (13).In our study, however there was no statistically significant association between parity and abnormal cervical cytology .

Although some studies have shown that wives of circumcised men are less at risk of cervical cancer (for example Jewish women in Israel), there is not sufficient evidence to

generalize this hypothesis. In Lebanon, the incidence is comparable in circumcised Muslims and non-circumcised Christians (9).

Barrier methods of contraception appear to offer a certain degree of protection against cervical cancer in both diaphragm users (14), and users of condoms (15). This protective effect is most probably due to the reduction in incidence of sexually transmitted diseases. Long term use of oral contraceptives (4years or more) has been shown in several studies to increase the risk of cervical cancer in some groups of people (12), due to hormonal influence of oral contraceptives on the cervix. However, this still remains controversial, and the role of oral contraceptives in the development of cervical dysplasia is unclear, which goes along with our findings that had no significant relationship between contraceptive method and abnormal cervical cytology.

There is some evidence that folic acid deficiency and low beta carotene levels may increase the risk of cervical dysplasia (12). Cancer prevention trials are currently being carried out to determine if supplements are effective in prevention, but at present there is no indication that they decrease the risk of cervical cancer (16). Low socioeconomic status is a major risk factor for cervical cancer (17).

Conclusion:

In summary, this is the first study about pap smear pattern in Nablus area. Results show that Palestinian women would accept having a pap test if properly offered to them. It is important to note that the precursors of cervical cancer are present in our society, and that the real incidence can be ascertained by designing screening programs that would involve the collaboration of all health sectors in the Palestine.

Education would play a major role in the success of a screening program. It is important to educate the public and physicians about cervical cancer and its precursors and encourage them to get involved in the screening program.

Data from studies in developing countries such as Western Cape, South Africa suggest that even limited Pap smear screening reduces the risk of cervical cancer (18).

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