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Marriage variables relation to abnormal cervical Pap smears results in Nineveh governorate patient's women

ABSTRACT:

Background The cervical Pap smear test is a standard screening procedure used for cervical cytology testing for the diagnosis of premalignant and malignant cervical lesions .The risk factors for cervical cancer are early age at first intercourse, multiple sexual partners, nutritional status, hormonal changes, parity, host immune status, smoking, viral oncogenic Human Leukocyte Antigens (HLA) types and coinfection with other viruses such as human immunodeficiency virus-1 and herpes simplex

virus. **Aim:** is to study the relation of some of the marriage variants as risk factors for cervical cancer with abnormal Pap smears results for women in Nineveh governorate.

Materials and Methods: A cross-sectional study was carried out on patients' women attended the Obstetric and Gynecological Mosul Hospitals for the period from June 2013 through June 2014, after the collection of data through direct meeting and a questionnaire comprising patients' characteristics and the results of Pap smear. Five hundred fifty one Pap smears were collected from women between the ages of 11 and 76 years. The personal characteristics of women included the mean age at 1st marriage which was 18.9 years; 18.8 years mean age of duration of marriage, and mean age at 1st delivery as 20.3 years. Other features included the sequences among wives or husbands which were found to be higher in 1st sequence (who had one husband or those who her husbands never had another wife): 464, 84.21% and 508, 92.20% respectively.

Results: abnormal Pap smears were 99/551(17.97%). A significant relation were observed between abnormal Pap smear in highest percentage at age (25-45) years 51.52% (P=0.032), and mean age at early forty 41.6± 12.21(P=0.002). The highest rate of women with epithelial abnormal Pap smears results were 1st sequence among wives and husbands (79.80% and 91.92% respectively). The mean ± SD of women with epithelial abnormal Pap smears were 18.3 ± 4.66 years of age at 1st marriage, and 19.7 ± 4.90 years of age at 1st delivery. Non-significant relation was detected between abnormal Pap smears and each of (the sequence among wives or husbands, age at 1st marriage, and at 1st delivery). Mean ± SD of women with epithelial abnormal Pap smears results were 21.1 ± 12.41years of duration of marriage, and there was significant effect for duration of marriage by using the same test between the two mean ages (P=0.028).

Conclusion: the age, and duration of marriage were strongly related to abnormal cervical Pap smear results, while age at 1st marriage , 1st delivery , sequence among wives or husbands were not related with epithelial abnormal cervical Pap smear in Nineveh governorate women.

Keywords:

Cervical cytology
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Introduction

Cancer of the cervix comprises the second most common cancer in women worldwide, with an annual world incidence of almost half a million^[4], accounting for 529828 new cases each year. In Iraq there is 10.74 million women at ages 15 years and older who are at risk of progressing cervical cancer, while only 291 women are diagnosed with cervical cancer every year.

Cervical cancer rankings as the 12th most frequent cancer among women in Iraq, and the 10th most common cancer among women between 15 and 44 years of age^[5].

The Pap smear is a test used to collect cells from the cervix for cytology. The system used for describing Pap test results is the Bethesda System (TBS) version 2001 [6, 7, 8, 9, 10, and 11].

1. Negative for Intraepithelial Lesion or Malignancy (NILM).
2. Epithelial Abnormalities of the cells (EA).

Most invasive cervical cancers occur in women who have not taken usual Pap smears. Half of women diagnosed with cervical cancer are between the ages of (35-55)^[12]. It has been stated that between (20-60%) of all cervical cancer deaths could be avoided by improving screening programs^[13]. By this

technique early detection of abnormal epithelial changes is done^[14].

The is to study the relation of some of the marriage variants as risk factors for cervical cancer with abnormal Pap smears results for women in Nineveh governorate.

Materials and Methods

1. Patients selection

Over 12 months period from June 2013 through June 2014 a cross sectional study was performed with a total of 551 Pap smears were collected from women between the ages of 11 and 76 years, the mean of ages was 38.4 years. Epithelial abnormalities (EA) were detected in 99 cases of total Pap smears.

Samples were collected from women requesting gynecological guidance for different complaints from the major hospitals in Mosul at Al-Khanssaa Teaching Hospital, Al-Batool Teaching Hospital, and Al-Mosul General Hospital. Samples were taken in the Gynecology Clinical Units in the Hospitals with the aid of the Cytology and Pap Smear Units in these Hospitals.

2. Inclusion criteria:

The target population was every married woman with vaginal discharge, the vaginal bleeding (inter-menstrual, post-coital, and post-menopausal), and genital warts.

A standard questionnaire was filling by every woman included in the study for the collection of the sample and cervical Pap smear reporting paper determined by the Iraqi Ministry of Health.

The data included women's personal history and related risk factors such as general characteristics of women, lifestyle, marital status, and sexual history of patient were contained in the questionnaire.

3. Exclusion criteria:

Pregnant women refused the test because of fear of possible abortion, therefore was excluded, also menstruating women at the time of attending because of the artifact and the confusion caused by the red blood cells in the Pap smear was excluded.

4. Cervicovaginal Cytology

Conventional Pap smear used for the diagnosis of malignancy and premalignant dysplastic changes for cytological assessment of the cervix [15]. the Pap test which is recommended worldwide for mass screening, because of the efficacy in the detection of premalignant lesions, and cost-effectiveness [15].

The Pap test was often done by a senior gynecologist, with the aid of the speculum and the use of a wooden Ayer's spatula by gentle scraping of the cervix for cells collection from the endocervix and the endo-ectocervical junction by

rotating the end of the spatula at the junction of the cervix, at that time the sample was immediately spread onto a glass microscope slide, and while it is wet immediately immersed into a jar containing 95% ethyl alcohol for fixation (for 30 minutes) [1].

At the cytopathology department, the slides were stained by Pap stain for cytological diagnosis and all cases were categorized according to the Bethesda system and the report was designed and the results were groups according to Bethesda system (2001) [11].

5. Data and statistical analysis.

Data categorization and coding performed via Microsoft Excel-2007. The descriptive and analytic statistics was carried out by using Minitab version 16.2 software statistical program. Mean \pm Standard Deviation (SD) done for measurable variables. Chi-square test of independence; were used for two categorical variables. Independent t-test for two means. P-values ≤ 0.05 were considered statistically significant throughout data analysis.

Results

1. Personal Characteristics of the Sampled Women

The personal characteristics of 551 women included the mean age at 1st marriage which was 18.9 years; 18.8 years mean age of duration of marriage, and mean age at 1st delivery as 20.3 years...Table I.

Table I: Personal characteristics of the study sample (n = 551).

Characteristics	No.	Mean	SD	Minimum	Maximum
Age (years)	551	38.4	11.20	11.0	76.0
Age at 1 st marriage (years)	551	18.9	4.76	11.0	40.0
Duration of marriage (years)	551	18.8	11.33	0.1	61.0
Age at 1 st delivery (years)	512	20.3	4.90	12.0	41.0

2. Age Groups Distribution According to the Results of Pap Smears

Table II displays the comparison between the age groups and the result of the Pap smear and the statistical analysis was performed on the data presented in it by using Chi-square test. There were significant differences in P- value 0.032* among four categories of age groups with

Pap smear results, also independent t-test of two means was used between results of Pap smear and was significant result with a P- value 0.002. The highest rate of all women was within the age group 25 – 45 year. The highest rate of women with Cervical EA group was within the age group 25 – 45 year (51.52%), followed by those within the age group 46 – 64 year (35.35%).

Table II: Comparison between the age groups and the result of Pap smears.

Age groups (years)	NILM		Cervical EA		Total		P-value
	No.	%	No.	%	No.	%	
≤ 24	54	11.95	10	10.10	64	11.62	0.032*
25 – 45	289	63.94	51	51.52	340	61.71	
46 – 64	103	22.79	35	35.35	138	25.05	
≥ 65	6	1.33	3	3.03	9	1.63	
Total	452	100.00	99	100.00	551	100.00	---
Mean age	37.7 ± 10.80		41.6 ± 12.21		38.4 ± 11.20		0.002**

* Chi-square test was used, d.f = 3.

** Independent t-test of two means was used.

3. The Effect of Early Marriage, Early Delivery, and Duration of Marriage on Pap Smears Results

The effect of age of 1st marriage is also studied and no significant effect of age at 1st

marriage or at 1st delivery on Pap smear results, while there was significant effect for duration of

marriage by using the same test between the two mean ages on Pap smear results as shown in Table III.

Table III: The effect of age at 1st marriage, duration of marriage and age at 1st delivery on Pap smear result.

Parameters	NILM [n = 452] mean ± SD	Cervical EA [n = 99] mean ± SD	P-value*
Age at 1 st marriage (years)	19.0 ± 4.77	18.3 ± 4.66	0.157
Duration of marriage (years)	18.3 ± 11.00	21.1 ± 12.41	0.028
Age at 1 st delivery (years)	[n = 418] 20.5 ± 4.89	[n = 94] 19.7 ± 4.90	0.150

* Independent t-test of two means was used.

4. Sequences of the Study Women

Other features included the sequences of remaining multiple sequences 2nd or 3rd wives or women which were found to be higher in 1st husbands in smaller percentages were 15.78% among wives and husbands: 464, 84.21% and and 7.80% respectively as shown in Figure I. 508, 92.20% respectively. Compared with the

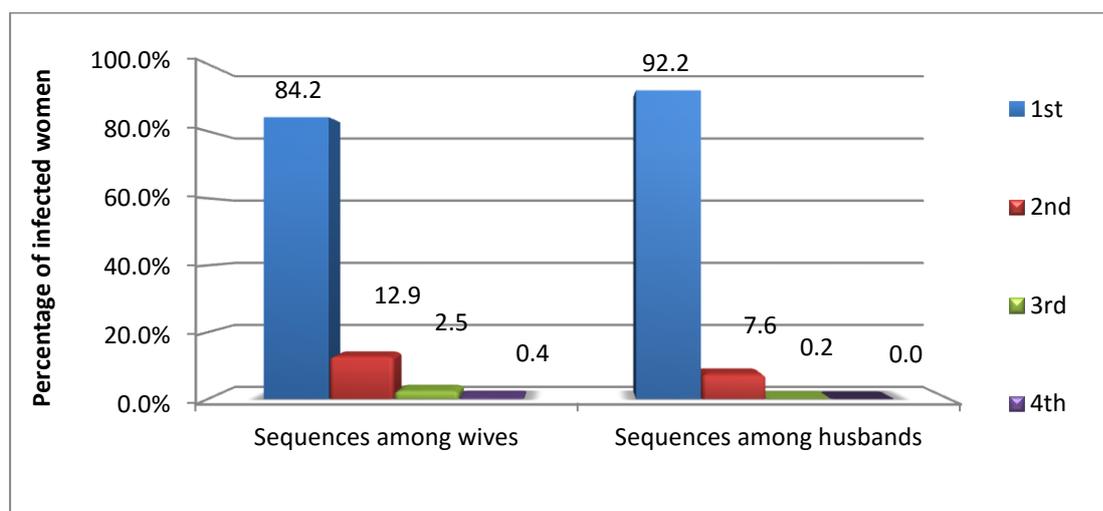


Figure I: Sequences of the study women among wives and husbands [n = 551].

5. Sequences of Wives and Husbands and Pap Smears Results.

The highest rate of women with cervical EA cytological results were women who had one husband or those who her husbands never had another wife (79.80% results was statistically non-significant and 91.92% respectively). The relation between number of wives or husbands with Pap smears

Table IV..

Table IV: The relationship between the sequences of wives and husbands and Pap smears results.

Parameters	NILM		EA cervical		Total		P-value*
	No.	%	No.	%	No.	%	
Sequences among wives							
1 st	385	85.18	79	79.80	464	84.21	0.184
≥ 2 nd	67	14.82	20	20.20	87	15.79	
Sequences among husbands							
1 st	417	92.26	91	91.92	508	92.20	0.910
≥ 2 nd	35	7.74	8	8.08	43	7.80	
Total	452	100.00	99	100.00	551	100.00	---

* Chi-square test was used, d.f = 1.

Discussion

Whereas about 90% of women undergo a screening test in some developed countries, this rates decreases to in only 5% in developing countries, this is because of the relative low cervical carcinoma in Islamic countries in relation to the western countries because of the high and early cervical carcinoma due to HPV infection by the multiple sexual partners in western countries [16].

1. Age Groups Distribution According to The Results of Pap Smears

All sampled women mean age were 38.4 ± 11.4 in patients women with cervical lesion, while early forty the mean age of women with cervical EA 41 ± 12.12 with significant $P=0.002$ between two mean ages of normal and cervical EA in the present study , in agreement with study from Baghdad by Al-Alwan [17], and accordance with result of

study from Turkey^[18], in significant results $p < 0.01$ mean age 41.15 ± 11.44 in patients women with cervical lesion, but disagreement with result of study, which was higher mean age 52.1 years^[19]. Age factor was considered a prognostic factor in which survival will be better if early diagnosis and progress in therapy are carried on^[20].

The highest rate of women with Cervical EA group was within the age group 25 – 45 year (51.52%), followed by those within the age group 46 – 64 year (35.35%), and 13.13% in women with age less than 24 and more than 65. There were significant differences in $p = 0.032$ among four categories of age groups with Pap smear results. In other study from Baghdad, epithelial abnormal changes of Pap smear results were significantly associated with age group (41-50) years^[21]. More studies published between 2010 and 2011 in specific countries included study of 3011 Kuwaiti's, showed that 40.8% of epithelial abnormal Pap smear results were found in women who were (30-39) years of age, 29.6% in women (40-49) years of age, 19.7% in women above 50 years, and 9.9% in women less than 34 years old, and other study records in Thailand where 60% of women with epithelial abnormal changes of Pap results were with age less than 50 years^[22]. Use

of Pap test with linked diagnostic procedures and treatment decreases the incidence of invasive cervical cancer, and the advantage increases with age^[23]. Nearly all the papers in agree with the present study results about the common age of presentation of patients with EA Pap smear results. This is because that this age is the age of sexual activity, which is regarded as the most important route for transmitting the causative HPV, which by itself is regarded as the most significant risk factor of premalignant or malignant squamous cell changes in all of the genital tract.

2. The Effect of Early Marriage, Early Delivery, and Duration of Marriage on Pap Smears Results

Appearing in the present study early marriage (at early sexual relations) is not significantly related with HPV as Iraqi /Mosul women start sexual intercourse with marriage and with one partner, other works established that women who have their first intercourse at an early age are at high risk for HPV infection and cervical cancer^[24, 25, 26, 27, 28].

Other study from Colombia revealed that cervical EA Pap smears results were significantly linked with women married with age < 18 years, indicated that women with pre-malignant changes or malignant cervical lesions were younger, and

started their sexual practice earlier with more sexual partners than healthy women [29]. Furthermore, other study reported increased cervical EA Pap results with early sexual behaviors in USA [30, 31].

In 2013, a study registered significant relationship between marriage duration and the incidence of cervical cancer in Iraqi women, consistent with present study [32].

3. The Relationship Between The Sequences of Wives and Husbands and Pap Smears Results

The highest rate of women with cervical EA cytological results were women who had one husband or those who her husbands never had another wife (79.80% and 91.92% respectively). The relation between number of wives or husbands with cervical Pap smears results was statistically not significant. This result may be attributable to the strict social and religious sexual habits that prevent non marriage sexual activity even with married persons and this result in restriction of HPV transmission between married men and women from non-marriage sexual activity. Even with those with marriage with more than one woman is also considering the religious precautions and this prevent viral transmission.

Conclusion

1. Early forty the mean age of women with cervical EA 41 ± 12.12 at significant $P= 0.002$. In present study 51.52% of cervical EA were seen in women at child-bearing age (25-45), There were significant differences in $p=0.032$ among four categories of age groups with Pap smear results.
2. There was significant effect for duration of marriage on Pap smear results at mean ages 21.1 ± 12.41 . It is clear that the marital status and marriage duration were the determinants of their higher persistent exposure to HPV.
3. No significant relation of age at 1st marriage, age at 1st delivery, and sequences among wives or husbands with Pap smear results.

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